प्रकाशक : त्रिवि, सूचना तथा जनसम्पर्क महाशाखा, कीर्तिपुर

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प्रकाशन समिति

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प्रा.डा. बलराम प्रसाईं विभागीय प्रमुख, भाषाविज्ञान केन्द्रीय विभाग	सदस्य
प्रा.डा. कृष्णप्रसाद न्यौपाने विभागीय प्रमुख, नेपाली केन्द्रीय विभाग	सदस्य
श्री भीमबहादुर श्रेष्ठ प्रमुख, सूचना तथा जनसम्पर्क महाशाखा	सदस्य-सचिव

२०८१ असार ३१ गते सोमवार

१५ जुलाई २०२४

“त्रिविबाट मिति २०२४ सालदेखि हरेक वर्ष त्रिवि दिवसका (आषाढ शुक्ल नवमी) दिन प्रकाशन हुँदै आएको त्रिवि वार्षिक दिवस विशेषाङ्क-(वर्ष र अङ्क उल्लेख हुँदै आएको) प्रकाशन वर्ष २०७९ देखि त्रिवि वार्षिक दिवस प्रकाशनका नामबाट प्रकाशित”

विषयसूची

विषय/लेखक **पृष्ठ**

विषयसूची

विषय/लेखक **पृष्ठ**

त्रिभुवन विश्वविद्यालय सञ्चालन र व्यवस्थापन सम्बन्धी उपकुलपतिको सोचपत्र तथा व्यावसायिक कार्ययोजना : एक समीक्षा

*महेन्द्र न्यौपाने**
*देवराज आचार्य***
*गुरूप्रसाद पौडेल****

लेखसार

नेपालको उच्चशिक्षाको महत्त्वपूर्ण हिस्सा बोकेको त्रिभुवन विश्वविद्यालयले नेपालको समग्र उच्चशिक्षालाई प्रतिनिधित्व तथा मार्गदर्शन गर्दछ । राष्ट्रका विविध क्षेत्रका जनशक्ति उत्पादनमा समेत महत्त्वपूर्ण हिस्सा ओगट्ने यस विश्वविद्यालयको सफलतासँग राज्यको समृद्धि पनि गाँसिएको छ । विश्वविद्यालयको उपकुलपति नियुक्तिका क्रममा वर्तमान उपकुलपतिद्वारा प्रस्तुत सोचपत्र र व्यावसायिक कार्ययोजना विश्लेषण गर्नु यस लेखको उद्देश्य रहेको छ । उपकुलपतिद्वारा प्रस्तुत सोचपत्र र व्यावसायिक कार्ययोजनामा प्रस्तुत विचारलाई साक्ष्यका रूपमा प्रस्तुत गरी विश्वविद्यालय सेवाबाट आर्जित अनुभव र निर्मित दृष्टिकोण, विश्वविद्यालय सञ्चालनका मान्यता र विश्वका विभिन्न विश्वविद्यालयले गरेका असल अभ्याससमेतका आधारमा विश्लेषण गरिएको छ । यी दस्तावेजमा प्रस्तुत विश्वविद्यालय तथा केन्द्रीय विभागको पुनसंरचना, कार्यतालिकाका आधारमा पठनपाठन सञ्चालन, राजनीतिक आस्थाका आधारमा नभई क्षमताका आधारमा नियुक्ति, पारदर्शिता, समयतालिकासहितको कार्ययोजनाको प्रस्तुति जस्ता पक्षलाई सकारात्मक पक्षका रूपमा पहिचान गरिएको छ । चारवर्से स्नातकलाई तीनवर्से बनाउने, अनुसन्धान केन्द्रलाई विभागमा गाभ्ने, जनशक्ति विकास र व्यवस्थापन, विद्यार्थी आकर्षण र नियमितता, प्राज्ञिक उन्नयनका लागि पाठ्यक्रम र शिक्षण पद्धतिमा सुधार जस्ता गम्भीरतापूर्वक अध्ययन गर्नुपर्ने विषयलाई समेत सामान्य रूपमा प्रस्तुत गरिएको छ । गहन अध्ययनपछि मात्र निर्क्यौल गर्नुपर्ने तथा छुटेका कैयौं विषय समावेश गर्नुपर्ने आवश्यकता यस लेखको निष्कर्षका रूपमा प्रस्तुत भएको छ । सोचपत्र र व्यावसायिक कार्ययोजनामा प्रस्तुत सकारात्मक उद्देश्यका साथ आएका विचारलाई गम्भीरतापूर्वक समीक्षा गरी अल्पकालीन, मध्यकालीन र दीर्घकालीन गरी विभाजन गरी कार्यान्वयनको दरिलो आधार बनाउनु आवश्यक छ । विश्वविद्यालय प्रवेशका क्रममा निर्मित यी दस्तावेजलाई आधारका रूपमा लिई विश्वविद्यालयका अवस्था र सम्भाव्यता पहिचान गरी आवश्यक स्रोतसाधनको व्यवस्था र परिचालनसमेत गरी राज्यका लागि आवश्यक जनशक्ति विकासको दिशामा ठोस र योजनाबद्ध प्रयास गर्नु आवश्यक छ । मूलतः आम जनसमूहलाई शिक्षा दिने विश्वविद्यालयबाट अनुसन्धानमुखी विश्वविद्यालयमा रूपान्तरण गरी अनुसन्धानका प्राप्तिका आधारमा विश्वविद्यालयका साथै समग्र राज्यव्यवस्था र अन्य विश्वविद्यालयलाई समेत मार्गदर्शन गर्ने दिशामा दरिलो गरी त्रिविलाई अगाडि बढाउनु आवश्यक छ ।

शब्दकुञ्जी : गुणस्तर प्रत्यायन, सोचपत्र, विश्वविद्यालयको पुनर्संरचना, व्यावसायिक कार्ययोजना, स्वायत्तता ।

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विषयप्रवेश

वैयक्तिक, आर्थिक, प्राविधिक र सामाजिक विकासका लागि उच्चशिक्षाको महत्त्वपूर्ण भूमिका हुन्छ । माध्यमिकतहपछि विश्वविद्यालयबाट प्राप्त गरिने शिक्षा नै उच्चशिक्षा हो जसलाई अन्तिम र औपचारिक तहको शिक्षाका रूपमा लिइने गरिन्छ । उच्चशिक्षाको दिगो विकास राष्ट्रिय, क्षेत्रीय र विश्वव्यापी विकासका लागि समेत महत्त्वपूर्ण हुन्छ (Azeiteiro et al., 2015) । शिक्षाको प्रभावकारिता राज्यका नीतिमाथि निर्भर रहेको हुन्छ जसले राज्यको निर्माणमा महत्त्वपूर्ण भूमिका निर्वाह गर्दछ । त्यसैले शिक्षा देशको विकास र समृद्धिसँग प्रत्यक्ष रूपमा सम्बन्धित रहेको हुनुपर्छ । उच्चशिक्षा प्रदायक संस्थाका रूपमा रहेका विश्वविद्यालयहरूले व्यक्ति, संस्था र समाजका लागि आवश्यक पर्ने ज्ञान, सिप र सक्षमतायुक्त पेसाकर्मीहरू उत्पादन गर्न नैतिकरूपमा जिम्मेवार हुन्छन् (Bergsmann et al., 2015) । विश्वविद्यालयले अनुसन्धानका माध्यमबाट ज्ञान उत्पादन गरी त्यही ज्ञानको शिक्षण गर्ने, प्रकाशनका माध्यमबाट विस्तार गर्ने, समाजका लागि उच्च क्षमतायुक्त दक्ष जनशक्ति उत्पादन गर्ने, शिक्षानीति निर्माणका लागि योगदान दिने, आलोचना (क्रिटिसिजम) को केन्द्रका रूपमा रही कार्य गर्ने र जिम्मेवारी वहन गर्ने जस्ता दायित्व निर्वाह गर्दछन् (Ozdem, 2011) । यस खालको जिम्मेवारी पूरा गर्नका लागि विश्वविद्यालयले आफू सक्षम बनेर निश्चित दूरदृष्टि, लक्ष्य उद्देश्य निर्माण गरी योजनाबद्ध किसिमले भूमिका निर्वाह गर्नु आवश्यक देखिन्छ । यसका लागि नेपालमा उच्चशिक्षासम्बन्धी विभिन्न आयोगबाट प्राप्त प्रतिवेदनलाई मध्यनजर गरी समयानुकूल दायित्व र जिम्मेवारीको बोध गर्ने र त्यसै अनुसार नीतिनिर्माण गर्ने कार्य गरेमा अपेक्षित उपलब्धि हासिल हुनसक्ने देखिन्छ ।

नेपालमा उच्चशिक्षाको थालनी वि.सं. १९७६ मा त्रिचन्द्र कलेजको स्थापनासँगै भएको हो । तर उच्चशिक्षाको व्यवस्थापनसम्बन्धी कार्य भने विदेशी (तत्कालीन भारतको) पटना विश्वविद्यालयबाट हुँदै आएको थियो । यसै सन्दर्भमा वि.सं. २००७ मा प्रजातन्त्रको प्राप्तिपछि गठित नेपाल राष्ट्रिय शिक्षा आयोग २०११ ले देशमा राज्यको शिक्षानीति निर्माण र व्यवस्थापन तथा उच्चशिक्षालाई व्यवस्थित गर्न विश्वविद्यालय स्थापना गर्नुपर्ने सिफारिस गरेअनुसार वि.सं. २०१६ मा त्रिभुवन विश्वविद्यालयको विधिवत् स्थापना भएको हो । नेपाल संस्कृत विश्वविद्यालय (स्थापनाकालीन महेन्द्र संस्कृत विश्वविद्यालय) को स्थापना (वि.सं. २०४३) पूर्व करिब तीन दशक (२७ वर्ष) सम्म त्रिवि नै देशको एकमात्र विश्वविद्यालयका रूपमा रहेको थियो । हाल देशमा सङ्घीय स्तरबाट एघारओटा विश्वविद्यालय, पाँचओटा विश्वविद्यालय सरहका स्वास्थ्य विज्ञान प्रतिष्ठान र प्रदेश स्तरमा समेत विभिन्न विश्वविद्यालय स्थापना भएका छन् । यद्यपि उच्चशिक्षाको तीन चौथाइभन्दा बढी हिस्सा त्रिभुवन विश्वविद्यालयले नै ओगटेको छ । सन् २०२१/२२ मा नेपालका सङ्घीय तथा प्रादेशिक विश्वविद्यालय र प्रतिष्ठानमा गरी जम्मा ५,७९,४४८ विद्यार्थीहरू भर्ना भएका थिए जसमध्ये त्रिभुवन विश्वविद्यालयअन्तर्गतका क्याम्पसमा ४,५४,०६५ जना (कुल विद्यार्थीको ७८.३६ प्रतिशत) विद्यार्थी अध्ययनरत रहेका थिए (विश्वविद्यालय अनुदान आयोग, सन् २०२३) । यसरी राज्यका उच्चशिक्षाका विद्यार्थीमध्ये तीनचौथाइ विद्यार्थीको भार त्रिभुवन विश्वविद्यालयले वहन गरेको देखिन्छ । त्यस्तै देशमा रहेका उच्चशिक्षा प्रदायक १४५५ संस्था/क्याम्पसहरूमध्ये ६२ आङ्गिक, ५२८ सामुदायिक र ५५४ निजी गरी कुल ११४४ क्याम्पससहित देशका क्याम्पसहरूको ७८.६८ प्रतिशत हिस्सा त्रिविले ओगटेको छ (विश्वविद्यालय अनुदान आयोग, सन् २०२३) । लामो इतिहास बोकेको यस विश्वविद्यालयले अवलम्बन गर्ने नीति, अभ्यास र कार्ययोजना तथा यसबाट उत्पादित जनशक्ति देशको आर्थिक, प्रशासनिक, शैक्षिक, सामाजिकलगायत क्षेत्रको विकासका साथै अन्य विश्वविद्यालयका

लागिसमेत मार्गदर्शक हुन्छ । यसर्थ सबल सक्षम त्रिवि र नेपालका अन्य विश्वविद्यालय विकासको समेत आधार हो ।

गर्विलो इतिहाससहित वर्तमानसम्म नेपालको उच्चशिक्षाको मियोको रूपमा स्थापित त्रिविले विगतको समीक्षा गरी सुन्दर भविष्यका लागि सुझबुझपूर्ण ढङ्गले आफ्नो क्षमता, अवस्था र दायित्व बुझेर योजनाबद्ध रूपमा अगाडि बढाउनु आवश्यक छ । त्रिविले विगतदेखि हालसम्म निर्वाह गरेको भूमिकाको कारण यसले लिने नीति, कार्यक्रम र योजनाहरूमा सबैको चासो, चिन्ता र उत्सुकता रहनु स्वभाविक हो । मूलतः समयको परिवर्तनसँगै शिक्षाको विकासका सन्दर्भमा भएका अन्तरराष्ट्रिय अभ्यास, विज्ञान तथा प्रविधि र सूचना तथा सञ्चार प्रणालीमा आएको चामत्कारिक परिवर्तन जस्ता कुराहरू समयसान्दर्भिक र अद्यावधिक हुन नसकेको महसुस विश्वविद्यालयभित्र र बाहिरबाट समेत हुने गरेको छ । यस सन्दर्भमा प्रमुखताका साथ उठ्ने गरेको मुद्दाका रूपमा पदाधिकारीको नियुक्तिमा हुने गरेको राजनीतिकरणलाई लिने गरिन्छ । योग्यता र क्षमताभन्दा पनि राजनैतिक पहुँचका आधारमा विश्वविद्यालयका पदाधिकारी नियुक्ति हुँदा नीति, योजना र कार्यक्रम प्रभावकारी बन्न नसकेको भन्ने कोणबाट विगतदेखि नै विविध खालका टिकाटिप्पणी हुने गरेका थिए । विश्वविद्यालयमा राजनैतिक हस्तक्षेप बन्द गरी खुला प्रतिष्पर्धा गर्नुपर्ने आवाजका बिचमा पछिल्लो पटक विश्वविद्यालयभित्र र बाहिरबाट समेत उठिरहेको सन्दर्भमा खुला प्रतिष्पर्धाका माध्यमबाट त्रिविको उपकुलपति नियुक्तिका लागि सिफारिस गर्न गठित सिफारिस समितिले २०८० पुस २३ गते सूचना प्रकाशित गरी त्रिभुवन विश्वविद्यालयको उपकुलपति पदका लागि सोचपत्र र व्यावसायिक कार्ययोजनासहित आवेदन माग गरेको थियो । छनोट समितिले निर्माण गरेको कार्यविधिको मापदण्डअनुसार सिफारिसमा परेका तीन जनामध्येबाट कुलपतिबाट त्रिविको उपकुलपतिका रूपमा प्रा.डा. केशरजङ बराल नियुक्त हुनुभएको छ । विश्वविद्यालयको नेतृत्व सम्हालेसँगै उपकुलपति बरालले उपकुलपति पदमा नियुक्तिका लागि आवेदन पेस गर्ने सन्दर्भमा आफ्नो योजना र रणनीतिलाई समेटी तयार पार्नुभएको त्रिभुवन विश्वविद्यालयको सञ्चालन र व्यवस्थापनसम्बन्धी सोचपत्र तथा त्रिभुवन विश्वविद्यालयको व्यावसायिक कार्य योजना सार्वजनिक भएको छ । उपकुलपतिमा विश्वविद्यालयको पूरा समय काम गर्ने प्रमुख पदाधिकारी हुने भएकाले विश्वविद्यालयका सबै कामकारबाहीमा सामान्य नियन्त्रण रहने, विश्वविद्यालयको कामकारबाहीमा निर्देशन दिन र रेखदेख गर्न सक्ने, शिक्षाध्यक्ष तथा रजिष्टार नियुक्तिका लागि सिफारिस गर्ने तथा कार्यकारी परिषद्को नेतृत्व गरी कार्यकारी प्रमुखको भूमिका निर्वाह गर्ने (त्रिभुवन विश्वविद्यालय ऐन, २०४९) गहन जिम्मेवारी रहन्छ । उपकुलपतिको प्रशासनिक नेतृत्वमा आगामी चार वर्षसम्म विश्वविद्यालय सञ्चालन हुनेछ । उपकुलपतिको सही नीति, सोच र स्पष्ट कार्ययोजनाले मात्र विश्वविद्यालयलाई सही दिशामा अग्रसर गराउन सक्दछ । यस सन्दर्भमा उपकुलपतिद्वारा प्रस्तुत यी दुई दस्तावेजको समीक्षामा यो लेख केन्द्रित छ ।

अध्ययन विधि

प्रस्तुत लेखमा त्रिविका वर्तमान उपकुलपतिद्वारा प्रस्तुत सोचपत्र र व्यावसायिक कार्ययोजनालाई अध्ययन सामग्रीका रूपमा लिई समीक्षा गरिएको छ । यसका लागि उपकुलपतिद्वारा दृष्टिकोण तथा कार्ययोजनाका रूपमा प्रस्तुत दुई दस्तावेजलाई नै मुख्य आधारका रूपमा लिइएको छ । यस क्रममा सामग्रीले अगाडि सारेका विषयलाई साक्ष्यका रूपमा लिई सेवामा रहेर प्राप्त गरेका अनुभव तथा दृष्टिकोण, विश्वविद्यालयको शैक्षिक तथा प्रशासनिक कार्यसञ्चालनसम्बन्धी नीतिगत तथा प्रचलित मान्यता र विभिन्न विश्वविद्यालयले

गरेका असल अभ्यासजस्ता कुरालाई मूल आधार बनाइएको छ । अध्ययनका क्रममा यस सामग्रीले उठाएका विषयप्रतिको सहमति तथा असहमति, त्यसमा समावेश हुन नसकेका पक्ष तथा नवीन मान्यतासमेतलाई निश्चित थिम निर्माण गरी क्रमबद्ध रूपमा व्याख्या गरिएको छ । अन्त्यमा विश्वका सफल विश्वविद्यालयहरूले गरेका असल अभ्यासलाई दृष्टान्तका रूपमा प्रस्तुत गर्दै नेपालको समसामयिक सामाजिक र आर्थिक परिवेशको आवश्यकता तथा वैश्विक परिवेशमा विश्वविद्यालयीय शिक्षाको सान्दर्भिकता तथा उपादेयताको सापेक्षतामा त्रिविले लिनुपर्ने नीतिलाई निष्कर्षका रूपमा प्रस्तुत गरिएको छ ।

विषयवस्तु र छलफल

त्रिभुवन विश्वविद्यालयका उपकुलपतिद्वारा अगाडि सारिएको सोचपत्र र व्यावसायिक कार्ययोजनाको विश्लेषण यस खण्डमा गरिएको छ । त्रिभुवन विश्वविद्यालयको सञ्चालन र व्यवस्थापनका सम्बन्धमा उपकुलपतिका दृष्टिकोणलाई सोचपत्र र व्यावसायिक कार्ययोजनाका माध्यमबाट प्रस्तुत गरिएको छ । यी दुई दस्तावेजमा त्रिविको परिचय, पृष्ठभूमिलाई समेट्दै त्रिविलाई भविष्यमा कसरी सञ्चालन गर्ने भन्ने सम्बन्धमा आफ्नो बुझाइका आधारमा निर्मित धारणालाई सोच तथा व्यावसायिक योजनाका रूपमा प्रस्तुत गरिएको छ । त्रिविको सञ्चालन र व्यवस्थापनसम्बन्धी सोचपत्रमा पृष्ठभूमि, विश्वविद्यालयको गुणस्तर अभिवृद्धि र प्रभावकारिता, विश्वविद्यालयको सम्पत्तिको आर्जन, उपयोग र आत्मनिर्भरता, आङ्गिक तथा सम्बन्धन प्राप्त क्याम्पसहरूको सुदृढीकरण, विश्वविद्यालयलाई प्राज्ञिक उत्कृष्टताको केन्द्रको रूपमा विकास गर्ने, विश्वविद्यालयको पारदर्शिता र जवाफदेहिता गरी छओटा उपशीर्षकमा विश्वविद्यालयसम्बन्धी सोचलाई प्रस्तुत गरिएको छ । त्रिविको व्यावसायिक कार्ययोजनामा विश्वविद्यालयको स्थापना कालदेखि हालसम्मको अवस्थाको चर्चा, सबल तथा दुर्बल पक्ष, चुनौती, अन्य विश्वविद्यालयहरूसँगको सम्बन्ध, रणनैतिक सुधार गर्नुपर्ने क्षेत्रहरूको पहिचान तथा २०८० फागुनदेखि २०८४ माघसम्मको त्रिविको समग्र सुधार कार्यायोजना प्रस्तुत गरिएको छ ।

उपकुलपतिद्वारा प्रस्तुत दुई दस्तावेजमा उपकुलपतिद्वारा अगाडि सारिएका सोच तथा व्यावसायिक योजनाले सबल पक्षहरूको चर्चा गरी तिनप्रतिको सहमति तथा असहमतिलाई विश्लेषणात्मक ढङ्गले प्रस्तुत गरिएको छ । यसका साथै विश्वविद्यालयका अध्ययन अनुसन्धानलाई प्रभावकारी ढङ्गले अगाडि बढाउन लिनुपर्ने नीति तथा रणनीतिसमेत प्रस्तुत गरिएको छ । अन्त्यमा विश्वका विभिन्न विश्वविद्यालयले गरेका असल अभ्यासलाई समेत दृष्टान्तका रूपमा प्रस्ततु गरिएको छ ।

विश्वविद्यालयको पुनर्संरचना

त्रिभुवन विश्वविद्यालयको फैलावट देशका सातओटै प्रदेश तथा हिमाल, पहाड र तराईसम्म छ । यसको भीमकाय संरचनाका कारण कार्यमा प्रभावकारिता आउन नसकेको विगतदेखि नै महसुस हुँदै आएको छ । यस सन्दर्भमा यस सोचपत्रले विश्वविद्यालयको गुणस्तर र प्रभावकारीता वृद्धि नहुनुको कारण विश्वविद्यालयको विशाल संरचनालाई लिँदै यसको पुनर्संरचनालाई महत्त्वका साथ उठइएको छ । सोचपत्रमा खासगरी त्रिविको भिजन २०३० अनुसार पुनर्संरचनाको तयारीका क्रममा महेन्द्र बहुमुखी क्याम्पस, नेपालगञ्ज, पृथ्वीनारायण क्याम्पस पोखरा र महेन्द्रमोरङ आदर्श बहुमुखी क्याम्पस, विराटनगरलाई उपाधि दिने संस्थाको रूपमा विकास गरी त्रिवि प्रदेश विश्वविद्यालय स्थापनाको लागि प्रारम्भिक तयारी गरिने उल्लेख गरिएको छ । यस्तै केन्द्रीय विभागहरूलाई महाविद्यालय (स्कुल) को संरचनामा परिवर्तन गर्ने, विद्यार्थी सङ्ख्या कम भएका

सामुदायिक क्याम्पस तथा तिनका कार्यक्रमलाई आपसमा मर्ज गर्ने नीति पनि अवलम्बन गर्ने सोच देखिन्छ । विश्वविद्यालयलाई प्राज्ञिक उत्कृष्टताको केन्द्रका रूपमा केन्द्रीय विभागलाई शैक्षिक, आर्थिक र प्रशासनिक स्वायत्ततासहित महाविद्यालयमा पुनर्संरचना गर्ने तथा क्षेत्रीय परीक्षा नियन्त्रण कार्यालयलाई जिम्मेवार बनाउने (बराल, २०८०क) भन्ने सोचलाई अगाडि सारिएको छ । यसैगरी चारवर्षे वार्षिक प्रणालीका कार्यक्रमलाई क्रमशः हटाएर शैक्षिक वर्ष २०८२/०८३ देखि तीनवर्षे सुरू गर्ने (बराल, २०८०ख) भन्ने योजनालाई पनि अगाडि सारिएको देखिन्छ ।

उपर्युक्त सोचको मूल्याङ्कन गर्दा विश्वविद्यालयको भौगोलिक फैलावट र सङ्ख्यात्मक विशालतालाई समस्याका रूपमा भन्दा पनि पुँजीका रूपमा लिई विश्वविद्यालयको पुनर्संरचना गर्नु उपयुक्त हुने देखिन्छ । यसका लागि विश्वविद्यालयका केन्द्रीय विभागलाई स्कुलमा परिणत गर्ने तथा प्रादेशिक विश्वविद्यालय र विद्यार्थी सङ्ख्या धेरै भएका विश्वविद्यालयलाई उपाधि दिने संस्थाका रूपमा विकास गर्नु उपयुक्त हुन्छ । तर त्यसको प्रभावकारी ढाँचा, केन्द्रसँगको अन्तरसम्बन्ध, स्रोतको व्यवस्थापन तथा सहायता प्रणालीको स्पष्ट व्यवस्थापनबिना पुनर्संरचना सफल हुन कठिनाइ पर्ने देखिन्छ । यसरी पुनर्संरचना गर्दा प्रत्येक निकाय र तहको अधिकार तथा जिम्मेवारी र जवाफदेहिता स्पष्ट किटान गरी सक्षमता विकास गर्नुपर्छ । चारवर्षे कार्यक्रमलाई तीन वर्समा झार्ने कार्यलाई तत्कालै गर्नुभन्दा पनि तीन वर्षसम्म सम्बन्धित विषयको सैद्धान्तिक अध्ययन गराउने अनि चौथो वर्षमा प्रयोगात्मक अभ्यास तथा सम्बन्धित कार्यस्थलमा आधारित ज्ञान (इन्टर्नसिप) लिने व्यवस्था गरी व्यवहारिक सिपसमेत भएका जनशक्ति तयार गर्ने र चौथो वर्ष सकिनासाथ नतिजा र प्रमाणपत्र प्रदान गरी विद्यार्थीको समय खेर नफाल्ने व्यवस्था गर्नु सान्दर्भिक हुन्छ । स्नातकमा एकवर्ष बढी भएकै कारण अध्ययनमा आकर्षण घटेको हो वा होइन भन्ने पत्ता नलगाई तत्कालै परिवर्तन गर्दा कार्यक्रममा अस्थिरता सिर्जना हुनपुग्छ । विश्वविद्यालयमा विद्यार्थीको आकर्षण कम हुँदै गएको तथा भर्ना भएका विद्यार्थी पनि तह उत्तीर्ण गरूञ्जेलसम्म नटिक्ने समस्या त्रिविमा विद्यमान रहेको देखिन्छ । यस समस्यालाई समाधानका लागि मूलतःशैक्षिक क्यालेन्डर लागु गरी समयमै भर्ना, परीक्षा र नतिजा प्रकाशन गर्ने, छात्रवृत्तिको व्यवस्था, बजारको आवश्यकता सम्बोधन गर्ने खालका कार्यक्रमहरू ल्याउने, शिक्षासँगै आयआर्जनमूलक कार्यक्रम तथा अनुसन्धान परियोजनामा विद्यार्थीलाई पनि सहभागी गराउने, विद्यार्थीको आकर्षण बढ्ने खालका कार्यक्रमको विस्तार गर्नु आवश्यक छ । विकसित विश्वविद्यालयका उत्कृष्ट विश्वविद्यालयलाई हेर्ने हो भने उनीहरूले नवीन कार्यक्रम र गुणस्तरमा जोड दिँदै अन्तराष्ट्रिय स्तरमा प्रचारप्रसारलाई समेत जोड दिई विश्वभरिका विद्यार्थीलाई आकर्षित गरेको पाइन्छ । यसर्थ त्रिविले पनि अल्पकालीन रूपमा नेपालका विद्यार्थीलाई विदेश अध्ययन गर्न जानबाट रोक्ने र दीर्घकालीन रूपमा विदेशी विद्यार्थीलाई समेत आकर्षित गर्ने गरी योजनाबद्ध रूपमा कार्य गर्न सकेमा विद्यार्थी घट्टै गएको समस्या समाधान गर्न सकिन्छ ।

गुणस्तर अभिवृद्धि र प्रभावकारिता

गुणस्तर अभिवृद्धि विश्वविद्यालयलको प्रमुख र महत्त्वपूर्ण कार्य हो । सोचपत्रमा मूलतः विश्वविद्यालयमा उत्तीर्ण दर कम हुनु, शैक्षिक क्यालेन्डर निर्माण र कार्यान्वयन नहुनु, उत्पादित जनशक्तिको खपत नहुनु, योग्य विद्यार्थीको प्रवेश नहुनु तथा पाठ्यक्रम अद्यावधिक नहुनु, शिक्षाशास्त्र सङ्कायले विद्यार्थीमा उपयुक्त विधि र ज्ञान विकास गर्न नसक्नुलाई विश्वविद्यालयमा राजनैतिक हस्तक्षेप हुनु (बराल, २०८०क) लाई मुख्य समस्याका रूपमा चित्रण गरिएको छ । यसको समाधानका लागि पाठ्यक्रम अद्यावधिक गरी सिपमुखी

बनाउने, शिक्षाशास्त्र सङ्कायका कार्यक्रमको पुनरावलोकन गरी शिक्षक उत्पादन गर्ने दिशामा उन्मुख गर्ने, आवश्यकताअनुसारको ज्ञान र सिपको विकास गर्ने तथा अध्ययन अध्यापनलाई अनुसन्धान र व्यावहारिक ज्ञानसँग जोड्ने शैक्षिक क्यालेन्डर कार्यान्वयन गर्ने जस्ता सोच (बराल, २०८०क) अगाडि सारिएको छ । यसका साथै व्यावसायिक र प्राविधिक विषयको अध्ययन अध्यापनमा जोड दिने, विविध जातजातिका भाषा, संस्कृति, उच्च पहाडी अध्ययन अध्यापन गर्ने व्यवस्था गर्ने सोचसमेत अगाडि आएको छ ।

विश्वविद्यालयले गुणस्तरीय शिक्षाका माध्यमबाट दक्ष जनशक्ति विकास गर्ने मुख्य लक्ष्य लिनुपर्नेमा त्यसो हुन नसकेको सन्दर्भलाई सोचपत्रले सही रूपमा मूल्याङ्कन गरेको छ । यद्यपि गुणस्तर केलाई मान्ने र यसका प्रमुख कारणको खोजी गहन रूपमा हुन नसकेको देखिन्छ । विश्वविद्यालयले उत्पादन गर्ने जनशक्तिको योजना नै नहुनु, त्यसका लागि आवश्यक जनशक्तिको योजना, विकास तथा तयारी विश्वविद्यालयसँग नहुनु गुणस्तर विकास नहुनुको प्रमुख कारण हो । यसका लागि विश्वविद्यालयले आवश्यक जनशक्तिको प्रक्षेपण गरी सोहीअनुसारका सिप र क्षमताले युक्त जनशक्ति उत्पादन गर्नुपर्छ । यस सन्दर्भमा रोजगारमुखी मात्र नभई स्वरोजगारमुखी शिक्षामा जोड दिन सक्नुपर्छ । विश्वविद्यालय र यसअन्तर्गतका निकायको गुणस्तर निर्धारण गर्नका लागि गुणस्तर प्रत्यायन मानक (क्वालिटी एस्युरेन्स स्टान्डर्ड) निर्माण गरी विश्वविद्यालय र यसअन्तर्गतका शैक्षिक संस्थाहरूलाई विश्वविद्यालय र स्वयम् संस्थाले नै मूल्याङ्कन गर्ने व्यवस्था गर्नु सान्दर्भिक हुन्छ ।

पाठ्यक्रम र शिक्षण पद्धति

विश्वविद्यालयमा गुणस्तर अभिवृद्धि गर्ने प्रमुख पक्षका रूपमा पाठ्यक्रम र शिक्षण सिकाइको विधि, प्रविधि जस्ता पक्षहरूको मुख्य भूमिका हुन्छ । बजारको आवश्यकताअनुसार जनशक्ति उत्पादन हुन नसकेको, उत्पादित जनशक्तिमा कारिन्दा प्रवृत्ति भएको भन्दै राष्ट्रिय र अन्तराष्ट्रिय श्रमबजारको आवश्यकताअनुसार आवधिक रूपमा पाठ्यक्रम अद्यावधिक गर्न (बराल, २०८०क) जोड दिइएको छ ।

त्रिविमा पाठ्यक्रम आवश्यकताअनुसार अद्यावधिक र विद्यार्थीमा सिप र सक्षमता विकासकेन्द्री हुन नसकेको आवाज उठेको पाइन्छ । बजारको माग व्यवस्थित रूपमा नआएको, सरकारी र निजी क्षेत्रसमेतले यस्ता सिप र क्षमता भएका जनशक्ति आवश्यक रहेको भनेर माग नगरेको अवस्थासमेत विद्यमान छ । यद्यपि त्रिविमा पाठ्यक्रम निरन्तर अद्यावधिक र परिमार्जन हुन सकेको, पाठ्यक्रम निर्माण प्रक्रियामा जटिल प्रशासनिक प्रक्रिया पूरा गर्नुपर्ने, सम्बद्ध विषय शिक्षकको सहभागिता नरहेको अवस्था कठिनाइका रूपमा महसुस गरिएको छ । यसका लागि शिक्षकको सक्षमता वृद्धि गरी पाठ्यक्रम निर्माण र कार्यान्वयनमा जिम्मेवार बनाई सम्बन्धित विभागबाट पाठ्यक्रम स्वीकृत गर्नुपर्छ । भौतिक उपस्थितिमा शिक्षककेन्द्रित र व्याख्यान विधिलाई विस्थापित गर्दै विषयको प्रकृतिअनुसार प्रविधिमैत्री शिक्षणविधि र प्रक्रिया अवलम्बन गर्नुपर्छ । नवीन शिक्षणविधि र पद्धतिको प्रयोगका लागि अध्ययन अनुसन्धान, शिक्षकको क्षमता विकास तथा प्रयोगका लागि पूर्वाधार तयार गर्नुपर्छ ।

अनुसन्धानमा आधारित शिक्षा

अनुसन्धान ज्ञान निर्माणको आधार हो । विश्वविद्यालयले ज्ञानको प्रसार मात्र नगरी अनुसन्धानका माध्यमबाट ज्ञानको प्रसारसमेत गर्नुपर्छ । त्रिविमा अनुसन्धान कार्यका लागि चारओटा अनुसन्धान केन्द्रहरू छन् । त्रिविले अनुसन्धान केन्द्रलाई विश्वविद्यालयको आयआर्जन, ज्ञान उत्पादन, प्रविधि विकास र हस्तान्तरणको लागि

परिचालन गर्न नसकेको तथा ज्ञानको उत्पादन र प्रविधिको हस्तान्तरणमा प्रभावकारी रूपमा लाग्न नसकेको भन्दै ती केन्द्रलाई रणनैतिक रूपमा सम्बन्धित महाविद्यालयमा समायोजन गर्ने (बराल, २०८०ख) योजना अगाडि सारिएको छ ।

अनुसन्धान केन्द्रलाई सम्बन्धित विभागमा समायोजन गर्नुभन्दा पहिले के कारणले अनुसन्धान केन्द्रका कार्यहरू प्रभावकारी हुन सकेनन् भन्ने खोजी आवश्यक छ । अनुसन्धानकेन्द्री उच्चशिक्षाको व्यवस्था गर्ने विश्वव्यापी मान्यता तथा अनुसन्धान तथा प्रकाशनलाई विश्वविद्यालय मूल्याङ्कनको विश्वस्तरीय मानक बनेको सन्दर्भमा अनुसन्धान केन्द्रहरूलाई थप प्रभावकारी बनाउनु आवश्यक छ । वर्तमानमा अनुसन्धानका लागि शुन्य बजेटमा अन्य प्रस्तावका आधारमा अनुसन्धानकार्य गरिरहेका अनुसन्धान केन्द्रलाई पर्याप्त बजेट, स्रोतसाधन तथा सशक्तीकरण गर्नु आवश्यक छ । अनुसन्धान केन्द्रलाई प्रभावकारी बनाउन यसलाई स्रोतसाधनसम्पन्न गराई दर्शनाचार्य (एमफिल) र विद्यावारिधि (पिएचडी) कार्यक्रम सञ्चालन गर्ने जिम्मेवारी अनुसन्धान केन्द्रलाई दिनु सान्दर्भिक हुन्छ । यसो गर्न सकेमा त्यस तहको अध्ययनलाई अनुसन्धानमा आधारित बनाउन सकिन्छ । अनुसन्धान केन्द्रमा कार्यरत शिक्षकले सम्बन्धित केन्द्रीय विभाग तथा महाविद्यालय (प्रस्तावित) मा पठनपाठनसमेत गर्ने तथा अनुसन्धानमा स्नातकोत्तर, दर्शनाचार्य, विद्यावारिधि तहका विद्यार्थीलाई समावेश गर्ने व्यवस्थासमेत गरी अनुसन्धानलाई कक्षाकोठासँग जोड्नुपर्छ । साथै विभिन्न क्याम्पस तथा महाविद्यालयले सानो स्केलका अनुसन्धान आफ्नै महाविद्यालयबाट तथा ठुलो स्केलका अनुसन्धान आफ्नो अध्यापन कार्यलाई जारी राख्दै अनुसन्धान केन्द्रमार्फत् गराउने व्यवस्था मिलाउनुपर्छ ।Gibb (सन् २०१०) ले गुणस्तरका विविध प्रारूपहरूमध्ये अनुसन्धानमा आधारित शिक्षा एक महत्त्वपूर्ण पक्ष हो जुन फिल्डमा गएर गरिने अनुसन्धानलाई मात्र नभई कक्षाकोठामा, शिक्षकको शिक्षणविधि, संस्थाको शैक्षिक उपलब्धिमा देखिनुपर्छ भन्ने मान्यता राख्छन् । यस आधारमा त्रिविले राज्यका लागि मात्र नभई आफ्नै शिक्षण पद्धति, शैक्षिक विधि तथा विद्यार्थीको शैक्षिक उपलब्धि सुधारका लागि समेत योगदान दिनु आवश्यक देखिन्छ । ठुलो स्केलका अनुसन्धानमा अनिवार्य रूपमा एमफिल तथा विद्यावारिधिका विद्यार्थीलाई पनि अनुसन्धानका साथै उपाधि प्रदान गर्ने व्यवस्था गराउनुपर्छ । राज्यका विभिन्न नीतिगत अनुसन्धान तथा अन्य विविध विषयगत अनुसन्धानका कार्य एनजिओ तथा आइएनजिओ मार्फत् गर्ने कार्य बन्द गरी विश्वविद्यालयका अनुसन्धान केन्द्रमार्फत् प्राध्यापक तथा विद्यार्थीको सहभागितामा गर्नुपर्छ । विद्यार्थीमा समेत अनुसन्धान सिप, अनुसन्धेय विषयक्षेत्रसँग परिचित हुने तथा क्षमता विस्तार हुने देखिन्छ । यसले विश्वविद्यालय, प्राध्यापक तथा विद्यार्थी सक्षम बन्न गई विश्वविद्यालयले गुणात्मक फड्को मार्ने देखिन्छ । विश्वविद्यालयलाई व्यापक रूपमा ठुलो जनसमूहलाई शिक्षा दिने विश्वविद्यालय (मास युनिभर्सिटी) र अनुसन्धानकेन्द्री विश्वविद्यालयलाई (रिसर्च युनिभर्सिटी) गरी दुई प्रकारमा विभाजन गर्ने गरिन्छ (Ozdem, 2011) । त्रिविलाई अनुसन्धान विश्वविद्यालय बनाउनका लागि अनुसन्धानलाई जोड दिई सोअनुसारको नीति र अभ्यासलाई जोड दिनु आवश्यक छ ।

सक्षम पदाधिकारी, क्षमतावान् प्राध्यापक र कर्मचारीको नियुक्ति

सोचपत्रले विश्वविद्यालयमा पदाधिकारीहरूको नियुक्तिलाई विश्वविद्यालय सुधारका रूपमा महत्त्वपूर्ण बाधाको रूपमा चित्रण गर्दै यसको अन्त्यका लागि उपकुलपतिको नियुक्ति प्रक्रियालाई प्रतिष्पर्धात्मक प्रक्रियाका रूपमा महत्त्व दिएर चित्रण गरेको छ । यसका साथै विश्वविद्यालयका अन्य पदाधिकारीको नियुक्तिका लागि निश्चित मापदण्ड तयार गरी सोहीअनुसार पदाधिकारीको नियुक्ति गर्ने परिपाटी विकास गर्ने तथा राजनैतिक आस्थाका

आधारमा आंशिक, कोर्स करार र करारमा शिक्षक तथा कर्मचारी नियुक्तिको अन्त्य गर्दै योग्यताका आधारमा आङ्गिक क्याम्पसमा शिक्षक भर्ना गर्ने सोच (बराल, २०८०क) अगाडि सारिएको छ । सोचपत्र (बराल, २०८० क) मा विश्वविद्यालयको गुणस्तर सुधारका लागि राम्रो शैक्षिक पृष्ठिभूमि भएका शिक्षक हुनुपर्ने र शिक्षकहरूमा प्राज्ञिकता र आफ्नो पेसाप्रतिको समर्पणभाव हुनुपर्ने विषय पनि उठान गरिएको छ । अध्यापन र अनुसन्धानका लागि न्युनतम योग्यता विद्यावारिधि बनाउने सोचसमेत अगाडि सारिएको छ ।

विश्वविद्यालयमा राजनैतिक प्रभावका आधारमा पदाधिकारी नियुक्ति भएमा कम सक्षम व्यक्ति नियुक्ति हुने तथा सक्षम व्यक्ति नै नियुक्ति भएमा पनि त्यस्ता पदाधिकारीहरूलाई विश्वविद्यालयका पदाधिकारीका रूपमा भन्दा पनि सम्बन्धित पेसागत सङ्घसङ्गठनको प्रतिनिधिका रूपमा हेरेर काममा बाधा सिर्जना हुन्छ । यसर्थ विश्वविद्यालयका पदाधिकारी लगायत विभिन्न पदमा मेरिट र बरिष्ठतालाई आधार मानेर योग्य व्यक्ति उपयुक्त पद (राइट म्यान राइट पोजिसन) मा पुग्ने व्यवस्था गर्नुपर्छ । राष्ट्रिय उच्चशिक्षा आयोग २०७५ ले पनि त्रिविलगायतका अन्य उच्चशिक्षा प्रदायक विश्वविद्यालयहरूमा बोर्ड अफ ट्रस्टी (प्रबन्ध समिति) मार्फत् गठन गर्ने तथा कार्यकारी पदहरूमा खुला प्रतिष्पर्धाबाट नियुक्ति गर्ने सुझाव दिएको छ ।

सेवा आयोगलाई नियमित गराएर विश्वविद्यालयमा आवश्यक शिक्षक तथा कर्मचारी नियुक्ति नियमित गराउन सकेमा आंशिक, करार, कोर्स करार आदिमा शिक्षक कर्मचारी नियुक्ति गर्न आवश्यक हुँदैन । विश्वविद्यालयमा आवश्यक शिक्षक कर्मचारीको अनुपात निर्धारण गर्ने, विद्यार्थी सङ्ख्या तथा कार्यक्रमका आधारमा शिक्षक र विद्यार्थीको अनुपात मिलाउने तथा आवश्यकताअनुसार सहज रूपमा शिक्षक र कर्मचारीको सरूवाको व्यवस्था गर्ने, विशिष्ट भूगोल र परिवेशमा गरिने कार्यको सही मूल्याङ्कन गर्ने परिपाटी बसाल्नुपर्छ । विश्वविद्यालयमा देशभित्रैबाट मात्र नभई विदेशी विश्वविद्यालयबाट समेत भिजिटिङ प्रोफेसर तथा विदेशी नागरिकलाई समेत प्रध्यापनमा आकर्षित गर्ने, विश्वविद्यालय सेवाका उपप्राध्यापक पदमा मात्र नभई सहप्राध्यापक तथा प्राध्यापकमा समेत अध्यापन तथा अनुसन्धानमा विशिष्टता प्राप्त व्यक्तिलाई प्रवेश तथा क्षमताअनुसार वृत्तिविकासको अवसरसमेत प्रदान गर्नुपर्छ । उच्चशिक्षामा प्राध्यापन र अनुसन्धान गर्न चाहने व्यक्तिहरूको विज्ञताको लेखाजोखा गर्न राष्ट्रिय योग्यता परीक्षण प्रणाली (राष्ट्रिय शिक्षा नीति, २०७६) वा यस्तै प्रकारका योग्यता निर्धारण गर्ने प्रणाली निर्माणको आवश्यकता रहेको छ । योग्य व्यक्तिलाई प्रवेश मात्र गराउने रणनीति मात्र नभई सेवामा प्रवेश गरिसकेका प्राध्यपक तथा कर्मचारीको क्षमता विकासका लागि नीति र कार्यक्रम निर्माण गरी सही कार्यान्वयन गर्नुपर्छ । फेरि त्रिभुवन विश्वविद्यालयका अधिकांश शिक्षक तथा कर्मचारी त्रिभुवन विश्वविद्यालयकै उत्पादन भएकाले कमजोर पृष्ठभूमिका शिक्षक तथा कर्मचारी प्रवेश भए भनेर अरूलाई दोष दिन मिल्ने पनि देखिँदैन । बरू छनोट प्रक्रिया चुस्त बनाउन तथा छनोट भइसकेपछि तिनलाई प्रभावकारी तालिम दिनेतर्फ ध्यान दिनु अवाश्यक छ । यद्यपि यसको स्पष्ट योजना सोचपत्र र कार्ययोजनामा समावेश भएको देखिँदैन । त्रिवि जस्तो पुरानो र राज्यको प्रमुख विश्वविद्यालयमा प्राध्यापक तथा कर्मचारीको क्षमता विकासका लागि हालसम्म ठोस कार्यसमेत भएको छैन । यसका लागि एउटा स्थायी निकाय र स्पष्ट नीतिनियम, बजेट र कार्यान्वनयोग्य कार्यनीतिको आवश्यकता पर्छ । 'त्रिवि शिक्षक तथा कर्मचारी सम्बन्धी विनियमावली, २०७६ (संशोधनसहित) मा 'तालिमको व्यवस्था गरिने छ' भन्ने उल्लेख भए पनि कसले, कस्तो प्रकृतिको र कुन कुन पक्षमा जोड दिई तालिम सञ्चालन गर्ने भन्ने स्पष्ट उल्लेख गरिएको छैन । त्रिविको खुला तथा दूर सिकाइ केन्द्र (ODEC) ले २०७८ भाद्रदेखि पौष मसान्तसम्म वि.सं. २०७७/०७८ का नवप्रवेशी प्राध्यापकहरूलाई ४८

घण्टाको सेवाप्रवेश तालिम सम्भवतः इतिहासमै पहिलोपटक प्रदान गरिए पनि त्यो सहभागीको आवश्यकतामुखी तथा मागमा आधारित नभई सबै विषय, स्तर र सङ्काय तथा संस्थानकालाई एकै स्थानमा राखेर शिक्षण प्रक्रियाका बारेमा सामान्य परिचय दिने खालको मात्र थियो । विश्वविद्यालय अनुदान आयोगले वार्षिक रूपमा अनुसन्धान लगायतका क्षमता विकासका विविध कार्यक्रमका लागि प्रस्ताव माग गरेर बजेट दिने व्यवस्था गरे पनि वर्सौंदेखि एकै खालका कार्यक्रमको निरन्तरता, तिनको गुणस्तर नियन्त्रणको अभाव जस्ता कार्यक्रमले वितरित स्रोतसाधनको उचित उपयोग अन्यन्त न्यून मात्रामा भएको देखिन्छ । कर्मचारीको क्षमता विकासका लागि पनि समय समयमा तालिम लगायतका कार्यक्रमहरू सञ्चालन गरिएको पाइन्छ । यद्यपि तालिमका लागि स्पष्ट पाठ्यक्रम, स्थायी निकाय, तालिम तथा क्षमता विकासका कार्यक्रमको सही मूल्याङ्कन तथा त्यसबारेको तथ्याङ्क सङ्कलन व्यवस्थित नहुँदा प्रभावकारि हुन सकेको छैन । यसर्थ त्रिविको गुणस्त सुधारका लागि शिक्षक र कर्मचारीको दक्षता महत्त्वपूर्ण पक्ष भएकाले एउटा स्थायी संरचना निर्माण गरी दक्ष प्रशिक्षकबाट कार्यक्रमबद्ध र नियमित रूपमा पेसागत क्षमता विकासका कार्यक्रम सञ्चालन गर्नुपर्छ । यसका लागि पर्याप्त बजेट, दक्ष प्रशिक्षकको व्यवस्थासमेत गरी आधुनिक सूचना प्रविधिको अधिकतम उपयोग गरी भर्चुअल माध्यमलाई समेत उपयोग गर्दै सूचना प्रविधिसम्बन्धी सिपलाई प्राथमिकता दिई क्षमता विकासका कार्यक्रम सञ्चालन गर्नुपर्छ ।

तालिम प्रशिक्षण, उच्च शैक्षिक कार्यक्रमका लागि अवसर र क्षमताअनुसारको जिम्मेवारी (Anderson, 2004) प्रदान गर्न सकेको खण्डमा त्रिविले गुणस्तरीय जनशक्ति अभावको समस्यालाई पनि केही हदसम्म सम्बोधन गर्न सक्छ ।

सहकार्य र समन्वय

विश्वविद्यालय समाजका लागि समाजमै स्थापित भएको निकाय भएकाले विभिन्न निकायहरूसँग सहकार्य तथा समन्वय गरी अगाडि बढ्नुपर्छ । त्रिविले एसिया, युरोप, अष्ट्रेलिया, उत्तर अमेरिका र अफ्रिकाका १६७ राष्ट्रसँग समझदारीपत्रमा हस्ताक्षर गरी औपचारिक सम्बन्ध स्थापना गरकेकाले विद्यार्थी र शिक्षकहरू आपसमा आदानप्रदान गरी शिक्षणविधि र ज्ञानको हस्तान्तरण गर्न सकिन्छ । यस्तो सम्बन्धले नेपालसँग सम्बन्धित विशिष्ट विषयहरूको अध्ययन अध्यापनमा विदेशी अनुभवसमेत समावेश गरी तिनको अध्ययन अनुसन्धानमा बढावा दिने, उच्चशिक्षालाई अन्तराष्ट्रियकरण गरी विदेशी विद्यार्थीहरूलाई आकर्षिण गर्ने सम्भावना रहेको छ (बराल, २०८०ख) । यी सम्भावनाका बिचमा सम्बन्ध स्थापना भएका विश्वविद्यालयसँग संयुक्त कार्य प्रभावकारी हुन नसकेको उल्लेख गर्दै कार्ययोजनाले ज्ञान र प्रविधि हस्तान्तरण हुने गरी कार्यान्वयन गर्नुलाई लिएको छ ।

विश्वविद्यालयलाई प्रभावकारी बनाउन विभिन्न शैक्षिक, निजी क्षेत्र र सरकार तथा सरकारी नियकायसँग प्रभावकारी सहकार्य र समन्वय हुनुपर्छ । राज्यका सरकारी, निजी तथा अनौपचारिक क्षेत्रका लागि विश्वविद्यालयले कस्तो क्षमता भएका कति जनशक्ति उत्पादन गर्ने ? परिवर्तनशील समयमा कस्ता जनशक्तिको माग भोलिका दिनमा बढ्दै जान्छ ? अन्तराष्ट्रिय स्तरमा कस्ता जनशक्तिको माग छ ? जस्ता पक्षको ख्याल गरी आवश्यकताअनुसारको जनशक्ति उत्पादन गर्न सक्नुपर्छ । विश्वविद्यालयको अध्ययन, अध्यापन र उत्पादन बजारसँग नजोडिने (बराल, २०८०ख) समस्या पनि अन्त्य गर्नका लागि उल्लिखित प्रश्नहरूको मनन् गर्नु आवश्यक छ । विश्वविद्यालय-निजी संस्था-सरकारबिचको असल सम्बन्ध र सहकार्यबाट राम्रो पर्यावरणीय नमुना

(इकोसिस्टम मोडल) निर्माण गरी त्यसलाई प्राकृतिक रूपमा स्वचालित गर्न सकेमा यसले आर्थिक, प्राविधिक, समाजिक, नीतिगत, प्राज्ञिक, सांस्कृतिक र मनोवैज्ञानिक पक्षहरू मजबुत गर्नमा विश्वविद्यालयले प्रभावकारी योगदान दिन सक्छ (Nyman, 2015) । विकास निर्माण सम्बद्ध निकाय र विश्वविद्यालयबिच साझेदारी तथा उद्योग, व्यावसाय, संस्थान र शिक्षण संस्थानबिचको सहकार्य र साझेदारी बढाई विद्यार्थीहरूलाई काम गर्दै अध्ययन गर्न पाउने अवसर दिने (राष्ट्रिय शिक्षा नीति, २०७६) अवस्था सिर्जना गर्नुपर्छ । Henard & Fosev (सन् २०१२) ले उच्चशिक्षामा गुणस्तरीय शिक्षा प्रवर्द्धन निर्देशिकामा उल्लेख गरेजस्तै सहकार्य, सदाचारिता, समन्वय, स्वायत्ततालाई उच्चशिक्षा विकासका आधार बनाइनुपर्छ । अन्तराष्ट्रिय अभ्यासलाई हेर्दा पनि सहकार्य र स्वायत्तता लाई उच्चशिक्षाको आधारभूत नीतिको रूपमा राखिएको पाइन्छ । यसरी विश्वविद्यालयले निजी राज्यका विविध पक्षसँग सहकार्य र समन्वय गर्नाले सरकार र निजी क्षेत्रसमेत जनशक्ति, अनुसन्धान लगायतका कार्यका लागि विश्वविद्यालयसँग निर्भर हुने र विश्वविद्यालय पनि सरकार र निजी क्षेत्रसँगको सहकार्यबाट सक्षमता विकास गरी आवश्यकता अनुकूल शिक्षा प्रदान गर्नमा जिम्मेवार बन्दछन् ।

समाजको सांस्कृतिक, प्राविधिक तथा आर्थिक पक्षमा विश्वविद्यालयले दिएको योगदानबाट समाजको विश्वविद्यालयप्रतिको विश्वासमा वृद्धि हुन्छ । यसर्थ त्रिभुवन विश्वविद्यालयले अन्य विश्वविद्यालय तथा शैक्षिक निकायका साथै निजी क्षेत्र र सरकारी निकायसँग सहकार्य गरी मजबुत पर्यावरण (इकोसिस्टम) निर्माण गर्नुपर्छ ।

सक्षम, सबल र आत्मनिर्भर विश्वविद्यालय

विश्वविद्यालयबाट गुणस्तरीय शिक्षा, अनुसन्धान तथा चुस्तदुरूस्त सेवाप्रवाहका लागि आवश्यक आर्थिक स्रोतको प्रबन्ध गरिनुपर्छ । विश्वविद्यालय आर्थिक रूपमा समस्यामा रहेको अवस्थालाई सोचपत्रले स्वीकार गरेको छ । अधिकांश आङ्गिक क्याम्पसहरूमा भौतिक रूपमा सम्पन्न भएर पनि भौतिक सम्पत्तिको परिचालन र व्यवस्थापन हुन नसकी आर्थिक स्रोतका लागि नेपाल सरकारमै निर्भर रहनु विश्वविद्यालयको आर्थिक सबलताको मुख्य बाधा रहेको छ (बराल, २०८०क) यी समस्यालाई समाधान गर्न व्यापारिक दृष्टिले महत्त्वपूर्ण स्थानका जग्गालाई सार्वजनिक निजी स्वरूपमा पहिचान गरी सार्वजनिक निजी स्वरूपमा सञ्चालन गर्ने, शुल्कलाई पारदर्शी बनाउने, अनुसन्धान र परामर्श सेवालाई विश्वविद्यालयको आयस्रोत बनाउन शिक्षक र विद्यार्थीलाई संलग्न गराउने, विद्यार्थी सहयोग कार्यक्रममार्फत् विश्वविद्यालयको जनशक्ति अभाव पूरा गर्ने तथा आर्थिक अवस्था कमजोर भएका विद्यार्थीलाई सहायता पुग्ने तथा विद्यार्थीहरूमा श्रमप्रति सम्मानको भाव बढाउने सोच अगाडि सारिएको छ ।

सक्षम सबल र आत्मनिर्भर विश्वविद्यालय बनाउनेतर्फको अभिलाषामा भौतिक विकास र विद्यार्थी व्यवस्थापनलाई महत्त्वपूर्णपक्षका रूपमा लिनुपर्नेमा सोचपत्र र व्यावसायिक कार्ययोजनामा गहन चिन्तन हुन सकेको देखिँदैन । सोचपत्रमा अधिकांश आङ्गिक क्याम्पस भौतिक रूपमा सम्पन्न भएको तर भौतिक सम्पत्तिको परिचालन र व्यवस्थापन हुन नसकेको उल्लेख गरिएको छ । यद्यपि विश्वविद्यालयका केन्द्रीय क्याम्पसदेखि आङ्गिक क्याम्पससम्मको भौतिक अवस्थालाई हेर्ने हो भने भौतिक रूपमा सम्पन्नता देखिँदैन । जग्गाजमिन र भवनका दृष्टिले केही सम्पन्न जस्तो देखिए पनि कक्षाकोठा, तिनमा प्राप्त सुविधा, प्रशासकीय भवन, प्राध्यापकको कक्ष, विभागीय पुस्तकालय, सेमिनार हल, अनुसन्धान तथा परियोजना कार्य गर्नका लागि चाहिने पूर्वाधारहरू, सूचना प्रविधिको पहुँच जस्ता सुविधाहरू राम्रो हुन सकेको छैन । यसर्थ विश्वविद्यालयबाट गुणस्तरीय शिक्षा

र प्रभावकारी सेवा प्रवाहका लागि आवश्यक पर्ने भौतिक सुविधाका पक्षहरू पहिचान गरी तिनको व्यवस्थापन गर्नु आवश्यक छ जसलार्य सोचपत्र र व्यावसायिक कार्ययोजनामा समावेश गरिएको छैन ।

विश्वविद्यालयलाई सबल, सक्षम र आत्मनिर्भर बनाउन विश्वविद्यालयका लागि आवश्यक पर्ने आर्थिक स्रोतको व्यवस्थापन हुनुपर्छ । यस सोचपत्रमा अगाडि सारिएको उपाय विश्वविद्यालयलाई आर्थिक रूपले निर्भर गराउने एक पक्ष मात्र हो । विश्वविद्यालयलाई आर्थिक रूपले निर्भर बनाउन सबैभन्दा पहिले राज्यले शिक्षा तथा उच्चशिक्षामा लगानी बढाउनुपर्छ । राज्यले शिक्षा, स्वास्थ्य तथा आर्थिक लगायतका विविध क्षेत्रमा विविध मन्त्रालय, विभाग तथा निकायमार्फत् गरिने अध्ययन, अनुसन्धान, सर्भेक्षण आदि विश्वविद्यालयमार्फत् गरिनुपर्छ । यसो हुँदा राज्यको खर्च विश्वविद्यालयमार्फत् हुन्छ, अध्ययन अनुसन्धान गुणात्मक हुन्छ, प्राध्यापकको क्षमता बढ्छ, विद्यार्थीले अध्ययनसँगै आयआर्जन गर्छन्, सिप विकास गर्छन् अनि राज्यका समस्या र सम्भावनाका बारेमा बुझ्छन् । राज्यलाई सम्पन्न गराउन अनुसन्धानमा गरिने लगानीमा भारी वृद्धि गरी विश्वविद्यालयमार्फत् त्यस्ता अनुसन्धान गर्ने गर्नुपर्छ । राज्यले उच्चशिक्षा गरिबलाई निशुल्क, सक्नेबाट न्युनतम शुल्क लिने रणनीतिअनुसार सञ्चालन गर्नुपर्छ । सरकारी आवश्यकताका लागि विश्वविद्यालयले जनशक्ति उत्पादन, सशक्तीकरण तथा निजी क्षेत्रसँग समेत जनशक्ति उत्पादन, क्षमता विकास तथा अध्ययन अनुसन्धान जस्ता कार्यमा सहकार्य गरी आयआर्जन बढाउन सकिन्छ । उचित लगानीबिना अपेक्षित प्रतिफल पाउन नसकिने भएकाले अहिलेकै लागानीबाट छिट्टै विश्वविद्यालयमा आयामिक परिवर्तन ल्याउन कठिन हुन्छ । शिक्षाको कुल बजेट नै १० देखि १२ प्रतिशतको हाराहारिमा रहेको र त्यसमध्ये पनि उच्चशिक्षामा अत्यन्त कम मात्रै विनियोजन हुनेहुँदा राज्यलाई नै विश्वविद्यालयलाई महत्त्वबोध गराई लगानीमा बढोत्तरी गराउनु आवश्यक छ ।

जवाफदेहिता, पारदर्शिता र जिम्मेवारीपन

विश्वविद्यालयमा पारदर्शिता र जवाफदेहिता वृद्धि गर्न योग्य र पेसाप्रति समर्पित प्राध्यापक र कर्मचारीको भूमिकालाई जोड दिँदै आर्थिक पक्षलाई पारदर्शी बनाउने, विश्वविद्यालय तथा यसअन्तर्गतका क्याम्पसहरूको आर्थिक, शैक्षिक र अन्य गतिविधिलाई वेभपेजमार्फत् सार्वजनिक गर्ने, विश्वविद्यालयका विविध निकायका पदाधिकारीलाई तोकिएको जिम्मेवारीप्रति उत्तरदायी बनाउने अनि कार्यसम्पादन मूल्याङ्कन गर्ने परिपाटी बसाली शिक्षकलाई उत्तरदायी बनाउने (बराल, २०८०क) योजना अगाडि सारिएको छ ।

विश्वविद्यालयमा कार्यरत शिक्षक र प्राध्यापक तथा कर्मचारीमा जवाफदेहिता, पारदर्शिता र जिम्मेवारीपन बढाउनु अत्यन्त आवश्यक छ । यसका लागि सबैभन्दा पहिले उनीहरूको जिम्मेवारी निर्धारण गरी कार्यसम्पादनको नियमित अनुगमन र निरीक्षण गर्नु आवश्यक छ । विद्युतीय शासनका माध्यमबाट विद्यालयका प्रशासनिक कामकारबाहीलाई प्रभावकारी बनाउने तथा कार्यसम्पादनको स्पष्ट वैज्ञानिक मूल्याङ्कन प्रणालीका माध्यमबाट वृत्ति विकासको फराकिलो अवसर सिर्जना गर्नुपर्ने आवश्यकता देखिन्छ । Collini (सन् २०१२) ले उल्लेख गरेजस्तै विश्वविद्यालय किन आवश्यक छन् त भन्ने प्रश्नको उचित जवाफका लागि पनि विश्वविद्यालयका हरेक साङ्गठनिक एकाइमा रहेका जिम्मेवार व्यक्तिहरूमा जवाफदेहिता, पारदर्शिता र जिम्मेवारीपन हुनुपर्छ ।

विश्वविद्यालयका असल अभ्यास

उच्चशिक्षालाई प्राज्ञिक र अनुसन्धानमूलक बनाई उत्कृष्टताको केन्द्र बनाउने मार्गमा अग्रपङ्क्तिमा रहेका विश्वका उत्कृष्ट विश्वविद्यालयका असल अभ्यासका सापेक्षतामा त्रिविका अभ्यासको समीक्षा गर्दै आवश्यक मार्ग पहिचान गर्ने प्रयास यहाँ गरिएको छ । त्रिवि र नेपालका अन्य विश्वविद्यालयहरूमध्ये अधिकांश (गण्डकी र लुम्बिनीबाहेक) विश्वविद्यालयहरूमा प्रधानमन्त्री र शिक्षामन्त्री कुलपति रहने व्यवस्था देखिन्छ । यद्यपि टाइम्स हाइअर एजुकेसनको उत्कृष्टताको सूचीमा रहेका अक्सफोर्ड विश्वविद्यालय, स्टान्डफोर्ड विश्वविद्यालय, म्यासाच्युसेट इन्स्टिच्युट अफ टेक्नोलोजी, हार्वड विश्वविद्यालय, क्यालिफोर्निया विश्वविद्यालय (Times higher education, 2024) लगायतका विश्वका प्रसिद्ध विश्वविद्यालयहरूमा राष्ट्रिय र अन्तराष्ट्रिय स्तरमा प्राज्ञिक अनुसन्धानका क्षेत्रमा ख्यातिप्राप्त व्यक्तिहरूको विश्वविद्यालय प्रबन्ध बोर्ड (Board of Trwtees) रहने व्यवस्था रहेको छ । उत्कृष्ट ठानिएका यी विश्वविद्यालयहरूले अनुसन्धानलाई २१ औं शताब्दीको उत्कृष्टताको आधार मानेर बजेटमा प्राथमिकताका साथ अनुसन्धान तथा अनुसन्धानमा आधारित शिक्षण र मूल्याङ्कन पद्धतिलाई जोड दिएर नीति र पाठ्यक्रम निर्माण गर्दछन् । अनुसन्धानका लागि पर्याप्त बजेट, आवश्यक स्रोतसाधनका साथै अनुसन्धानका लागि महत्त्वसमेत पाउने गर्दछन् । विश्वका विश्वविद्यालयका उच्चश्रेणीमा रहेका विश्वविद्यालयहरूले पाठ्यक्रम निर्माण, प्रयोग, मूल्याङ्कन र परिमार्जनका लागि शिक्षक स्वायत्तता (teacher autonomy) लाई अनुशरण गरेको पाइन्छ । बेलायतको क्याम्ब्रिज विश्वविद्यालय तथा अमेरिकाका अक्सफोर्ड विश्वविद्यालयलाई नै उदाहरणका रूपमा लिँदा शैक्षिक कार्यक्रम, पाठ्यक्रम र मूल्याङ्कनका विस्तृत खाका (comprehensive framework) तयार पारी उक्त खाकाभित्र रहेर मूल्याङ्कनका आधारसूची (rubrics) तयार गरी प्राध्यापन गर्ने शिक्षक स्वयम्‌लाई नै अधिकार प्रत्यायोजन गरेका छन् । टाइम्स हाइअर एजुकेसनको विश्वका विश्वविद्यालयका उत्कृष्टताको सूचीमा रहेका उत्कृष्ट २० विश्वविद्यालयहरूको 'शैक्षिक कार्यक्रम व्यवस्थापन र विस्तार'को विश्लेषण गर्दा अधिकांशले विकेन्द्रीकरणको मोडेलमा आधारित सिकाइ केन्द्रहरू र स्वायत्त शैक्षिक कार्यक्रमहरू सञ्चालनमा ल्याएको देखिन्छ । त्यस्तै सहकार्यमा आधारित कार्यसम्पादन विश्वविद्यालय सफलताको अर्को महत्त्वपूर्ण आधार हो । सिकागो, क्याम्ब्रिजलगायतका विश्वविद्यालयले अन्तराष्ट्रिय स्तरका उत्कृष्ट विश्वविद्यालय, प्राध्यापक तथा आफ्नै पूर्वविद्यार्थीसँगको सहकार्यलाई मजबुत बनाई पठनपाठन, अनुसन्धान तथा प्रकाशनमा आफूलाई अब्बल सावित गरेका छन् । यसले आफ्नै विश्वविद्यालयका उत्पादनमात्र मात्र नभई फरक विश्वविद्यालयमा विशिष्टता हासिल गरेका प्राध्यापकसँगको सहकार्यले शिक्षण र अनुसन्धानलाई उत्कृष्ट बनाउन भूमिका खेल्ने देखिन्छ । विश्वविद्यालयको प्रमुख पक्ष तथा प्रतिफलको आधारका रूपमा रहेका विद्यार्थीहरूलाई पनि विश्वविद्यालयले ध्यानमा राख्नुपर्छ । विश्वका उत्कृष्ट विश्वविद्यालयका रूपमा रहेका हार्वड, क्याम्ब्रिज तथा एसियाकै नेशनल युनिभर्सिटी अफ सिङ्गापुरले पनि विद्यार्थी सहायता प्रणाली (student support system) लाई जोड दिएका तथा प्रचारको माध्यमका रूपमा उपयोग गरी विद्यार्थीलाई आकर्षित गरेका छन् । पूर्वनिर्धारित शैक्षिक क्यालेन्डरअनुसार पठनपाठन र नतिजा प्रकाशन गरी पेसा छनोटका लागि समेत विद्यार्थीलाई सहयता गर्ने कारण यस्ता विश्वविद्यालयमा अध्ययनका लागि विश्वभरिबाट विद्यार्थीहरू आकर्षित हुन्छन् । यस्तै विश्वका उत्कृष्ट विश्वविद्यालयले आफ्ना विश्वविद्यालयअन्तर्गतका क्याम्पसमार्फत् उच्चशिक्षालालाई प्रत्येक नागरिक सम्म पुऱ्याउनका लागि उचित लगानी र समानुपातिक वितरण प्रणाली

अवलम्बन गरेको पाइन्छ । जसका कारण ती विश्वविद्यालय अन्तर्गतका क्याम्पसहरूले गुणस्तरीय शिक्षामा केन्द्रित भई प्रभावकारी कार्यसम्पादन गरेको देखिन्छ ।

विश्वका उत्कृष्ट कार्यसम्पादन गरेका विविध विश्वविद्यालय र तिनका सापेक्षतामा त्रिविको कार्यसम्पादनलाई तुलनात्मक विश्लेषण गर्न सकिन्छ । त्रिभुवन विश्वविद्यालयको परिवेश, लगानीका स्रोत, विश्वविद्यालयका जनशक्ति, प्रवेश, शिक्षक सक्षमता, उत्पादन पाठ्यक्रम जस्ता धेरै पक्षमा विशिष्टता रहेको भए पनि तिनले गरेका कैयौं असल अभ्यासलाई हामीले अनुकरण गर्न सक्छौं । विश्वका उत्कृष्ट मानिएका विश्वविद्यालयले अपनाएका विश्वविद्यालयसरह त्रिविलाई तत्काल पुर्‍याउन नसकिए पनि राज्यलाई विश्वविद्यालयको महत्त्वबोध गराउन सकेमा लगानीमा वृद्धि गर्न सकिन्छ । त्रिविले आफ्नै स्रोतसाधनको सदुपयोगसमेत गरी शिक्षकको दक्षता अभिवृद्धि तथा दक्ष शिक्षकको प्रवेश गराउने, पाठ्यक्रम निर्माणमा शिक्षकलाई जिम्मेवार बनाउने, अनुसन्धानमुखी शिक्षाको व्यवस्था गर्ने, पाठ्यक्रम, शिक्षण तथा मूल्याङ्कनको विधि र पद्धतिमा सामयिक सुधार गरी अपेक्षित गुणस्त वृद्धि गर्न सक्ने देखिन्छ ।

निष्कर्ष

नेपालको उच्चशिक्षाको इतिहासमा उल्लेखनीय योगदान दिएको त्रिभुवन विश्वविद्यालयको नेपालको उच्चशिक्षाको विकासमा निकै ठुलो योगदान रहेको छ । यति मात्र नभई राज्यका लागि आवश्यक जनशक्तिको ठुलो हिस्सा बोकेको यो विश्वविद्यालयले नेपालको उच्च शिक्षाको नेतृत्व समेत गर्दछ । यसले लिएका नीति, कार्यक्रम र अभ्यासहरू अन्य विश्वविद्यालयका लागि पनि निकै अनुकरणीय हुन्छन् । राज्यको जनशक्ति विकासमा समेत उल्लेखनीय भूमिका हुन्छ । विश्वविद्यालय सेवा प्रवाहको आफ्नो यात्राका क्रममा पछिल्लो समय केही आलोचित समेत भएको छ । यस सन्दर्भमा उपकुलपतिले आफ्नो नियुक्तिका सन्दर्भमा सोचपत्र र व्यावसायिक योजनामा विद्यमान अवस्थाको समीक्षा गर्दै विश्वविद्यालयलाई आगामी दिनमा कसरी अगाडि बढाउने भन्ने सन्दर्भमा केही महत्त्वपूर्ण सवाल उठान गर्नुभएको छ । यस क्रममा मूलतः पाठ्यक्रमको अद्यावधिकता, शैक्षिक पात्रोको कार्यान्वयन, सहकार्य र समन्वय, केन्द्रीय विभागलाई महाविद्यालयका रूपम पुनर्संरचना गर्ने, विश्वविद्यालय सेवाको न्युनतम योग्यता विद्यावारिधि बनाउने, अनुसन्धान तथा सूचना प्रविधिको प्रयोगमा जोड दिने जस्ता सकारात्मक पक्षहरू छन् । यसका साथै विद्यार्थी कम भएका क्याम्पस र तिनका कार्यक्रम गाभ्ने, नयाँ कार्यक्रम थप्न गुणस्तर प्रत्यायनलाई अनिवार्य बनाउने, पारदर्शिता र जवाफदेहितामा जोड दिने र कार्यक्रमबद्ध रूपमा आफ्नो कार्ययोजना प्रस्तुत गर्ने जस्ता सकारात्मक पक्षहरू यी दुई दस्तावेजमा रहेको छन् । यसमा समावेश हुनसक्ने केही पक्षहरू छुटेका तथा गुणात्मक विद्यार्थी इन्टेक गर्ने, पुराना प्राध्यापकलाई गोल्डेन ह्यान्सेक दिई सेवानिवृत्त गर्ने, विद्यार्थी सहयोग कार्यक्रम सञ्चालन गर्ने, परीक्षाका सुधारका लागि शिक्षकलाई जिम्मेवार बनाउनका सट्टा पनिकालाई सक्षम बनाउने जस्ता पक्षहरूमा थप स्पष्टता आवश्यक देखिन्छ । यस्तै कतिपय विषय छुटेका छन् अनि कतिपय उठाइएका विषयले थप अध्ययनको अपेक्षा गर्दछन् । विश्वविद्यालय सुधारको मनशाय व्यक्त गर्दै गर्दा छुटेका कैयौं विषयलाई पुनः गहन ढङ्गले अध्ययन गरी समावेश गर्ने तथा उल्लेख गरिएका सुधारका पक्षहरूमा समेत अध्ययन गरी तिनलाई विविध पक्षबाट हेरेर विश्वविद्यालयको नीति र कार्यनीतिमा समावेश गर्नुपर्छ । यसका साथै विश्वका उत्कृष्ट विश्वविद्यालयले अवलम्बन गरेका असल अभ्यासलाई नेपालको परिवेश र सन्दर्भमा अनुकूलन गर्न सकेमा विश्वविद्यालयलाई राष्ट्रिय मात्र नभई अन्तराष्ट्रिय क्षेत्रमा समेत स्थापित गराउन सकिन्छ ।

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मानविकी तथा सामाजिक शास्त्र सङ्कायको वर्तमान संरचना र महाविद्यालय (स्कुल) को आधार

*गोविन्दप्रसाद शर्मा (सुकुम शर्मा)**

लेखसार

त्रिभुवन विश्वविद्यालय अन्तर्गत मानविकी तथा सामाजिक शास्त्र सङ्काय विषयगत रूपमा विविधता भएको सबैभन्दा पुरानो र बृहत् सङ्काय हो । त्रिभुवन विश्वविद्यालयको स्थापनासँगै प्रवीणता प्रमाण पत्र (इन्टर), स्नातक (ब्याचलर) र स्नातकोत्तर (मास्टर) तहको पठनपाठनमा मानविकी कला सङ्कायको भूमिका उल्लेख्य रहेको पाइन्छ । मानविकी र सामाजिक शास्त्रअन्तर्गतका विषयको महाविद्यालयका अवधारणामा के कसरी संरचनात्मक आधार निर्माण गर्ने भन्ने मूल समस्यामा यो अध्ययन केन्द्रित रहेको छ । यसक्रममा मानविकी तथा सामाजिक शास्त्रअन्तर्गत भएको महाविद्यालयसम्बन्धी अवधारणाको ऐतिहासिक विकाससहित वर्तमानको संरचनात्मक आधार खोजी गरिएको छ । अहिले मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत वार्षिक र सत्रप्रणालीअनुसार स्नातक तहमा र अन्य तहमा सत्रप्रणालीअनुसार पठनपाठन हुने व्यवस्था गरिएको छ । यस सङ्कायमा स्नातक तह, अधिस्नातक तह (पिजिडी), स्नातकोत्तर तह र दर्शनाचार्य विद्यावारिधि तहमा दर्शनाचार्य (एमफिल) र विद्यावारिधि (पिएचडी) उपाधि प्रदान गर्ने प्रावधान रहेको छ । यस्तै महाविद्यावारिधि उपाधिको पनि यस सङ्कायमा व्यवस्था गरिएको देखिन्छ । यस किसिमको तहगत पठनपाठनअनुसार स्नातक तहमा ३० विषयमा उपाधि,अधिस्नातक तहमा ६ विषयमा उपाधि, स्नातकोत्तर तहमा ३६ विषय र दर्शनाचार्य विद्यावारिधिमा २३ विषयमा उपाधि दिने गरिएको पनि पाइन्छ । त्रिभुवन विश्वविद्यालय दृष्टिकोण दुईहजार बिसतिस (२०२०–२०३०) का अवधारणामा रहेका पाँचवटा स्कुलमा सङ्कायको पुनः संरचनाको आधार बनाउन सकिन्छ । प्रस्तावित स्कुलहरूमध्ये मानविकी तथा सामाजिक शास्त्र सङ्कायसँग सम्बद्ध स्कुलहरू (क) स्कुल अफ फाइन आर्टस (ख) स्कुल अफ ल्याङ्ग्वेज, लिटरेचर एन्ड लिङ्ग्विस्टिक (ग) स्कुल अफ बिहेविअरल एन्ड सोसल साइन्स (घ) स्कुल अफ इकोनोमिक्स पोलिसी एन्ड डेभलप्मेन्ट (ङ) स्कुल अफ स्ट्राटेजिक स्टडिज रहेका छन् । सङ्कायअन्तर्गतका त्रिचालिसवटा विषय समितिहरू पाँचवटा स्कुलमा मात्र सञ्चालन हुन सक्ने स्थिति नहुँदा केन्द्रीय विभाग,विभाग र कार्यक्रम तथा विषयको समायोजन र खारेजी चुनौतीपूर्ण रहेको विषय हो । महाविद्यालय (स्कुल) प्राज्ञिक, प्रशासनिक र आर्थिक रूपमा स्वायत्त रही प्राज्ञिक नेतृत्वमा रहनपर्ने नै हुन्छ । स्कुल निर्धारण गर्दा अन्तरविषयक र बहुविषयक आधारमा जोड दिनपर्ने देखिन्छ । स्कुलका सञ्चालनका लागि निर्देशिका र कार्यविधि निर्माण नै पहिलो प्राथमिकतामा रहनपर्ने देखिन्छ । अहिले पाइलट कार्यक्रमका रूपमा स्कुलको अवधारणालाई अघिबढाउन सकिन्छ । यसअनुसार मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत त्रिभुवन विश्वविद्यालय दृष्टिकोण बिसतिस (२०२०-२०३०) का अवधारणामा रहेका पाँचवटा स्कुलमध्ये स्कुल अफ फाइन आर्टसलाई यस सङ्कायअन्तर्गत कार्यान्वयनमा ल्याउन सकिन्छ ।

शब्दकुञ्जीः अनुशासनिक, अन्तरविषयक, अन्तरस्कुल, बहुविषयक, सहकार्य, स्वशासन, स्वायत्त

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विषयपरिचय

नेपालमा विद्यालय तह भन्दामाथि उच्चशिक्षा प्रदान गर्ने उद्देश्ले सम्वत् १९७५ मा त्रिचन्द्र कलेजको स्थापना भएसँगै कला (आर्टस्) मानविकी विषयको पठनपाठन आरम्भ भएको हो । यस्तै विश्वविद्यालय स्थापना गरी उच्चशिक्षाको पठनपाठनको चर्चा २००५ सालदेखि भए पनि यसको मूर्त रूप भने झन्डै एक दशकपछि मात्र सम्भव भएको देखिन्छ । यसै पृष्ठभूमिमा राष्ट्रिय परिस्थितिअनुसार शिक्षाप्रदान गर्ने उद्देश्यले वि. स. २०१६ मा त्रिभुवन विश्वविद्यालय स्थापना भई सञ्चालनमा आएको हो । त्रिभुवन विश्वविद्यालयको स्थापनासँगै प्रवीणता प्रमाण पत्र (इन्टर), स्नातक (ब्याचलर) र स्नातकोत्तर (मास्टर) तहको पठनपाठनमा मानविकी या कला सङ्कायको भूमिका उल्लेख्य रहेको पाइन्छ । यसमा पनि विश्वविद्यालय कलेजमा स्नातकोत्तर तहको पठनपाठन आरम्भ गर्ने आधार निर्माणमा मानविकी या कला सङ्काय नै अग्रणी देखिन्छ ।

त्रिभुवन विश्वविद्यालयको स्थापनापछि नयाँ शिक्षा योजना लागुहुन्जेल (२०२८) को अवधिमा विश्वविद्यालयको आधारभूत र प्रारम्भिक संरचना निर्माण भएको देखिन्छ । त्रिभुवन विश्वविद्यालय ऐन २०२८ मा १३ वटा संस्थान (इन्स्टिच्युट) व्यवस्था भएका र ती संस्थानमध्ये मानविकी तथा सामाजिक शास्त्र संस्थान पनि एक हो । राष्ट्रिय शिक्षा पद्धतिको योजना (राशिपयो) लागु भएपछि त्रिभुवन विश्वविद्यालयको संरचनामा परिवर्तन भई नयाँ संरचनात्मक आधार निर्माण हुँदा मानविकी या कला सङ्काय मानविकी तथा सामाजिक शास्त्र अध्ययन संस्थानका नाममा संरचनात्मक विकास भएको पाइन्छ । यस अध्ययन संस्थानअन्तर्गत मानविकी, सामाजिक शास्त्र र भाषासाहित्य क्षेत्रगरी अलगअलग सङ्कायको प्रस्ताव पनि यस समयमा प्रस्तुत भएको देखिन्छ । वि.सं २०४० पछि मानविकी तथा सामाजिक शास्त्र संस्थानबाट परिवर्तन भई सङ्कायका संरचनामा रहेको पनि देखिन्छ । सङ्कायका संरचनात्मक विकासमा विस्तार हुँदै गर्दा हाल यस सङ्कायअन्तर्गत ३० वटा आङ्गिक, ३१६ जति सम्बन्धन प्राप्त (सामुदायिक तथा निजी) क्याम्पसमा यस सङ्कायबाट गठित ४३ वटा विषय समितिबाट निर्माण भएका पाठ्यक्रम सञ्चालनमा रहेका छन् । हाल यस सङ्कायअन्तर्गत स्नातक, अधिस्नातक, स्नातकोत्तर र दर्शनाचार्य विद्यावारिधिका कार्यक्रम तथा तहगत उपाधिको व्यवस्था रहेको छ । यस सङ्कायमा वार्षिक र सत्र प्रणालीअनुसार पठनपाठन गरिएको पाइन्छ ।

त्रिभुवन विश्वविद्यालयको वर्तमान संरचना र आकार बृहत् भई कार्यसम्पादन सहज हुन नसकेको चर्चा परिचर्चा पाइन्छ । नेपाल सङ्घीय राजनीतिका प्रणालीमा गएपछि सो प्रणालीका आधारमा नेपालको पुनः संरचनासँगै त्रिभुवन विश्वविद्यालयको पनि पुनः संरचनाको सोच अघिबढेको देखिन्छ । यस सन्दर्भमा मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत महाविद्यालय (स्कुल) का संरचनात्मक आधारका विषयमा पनि चर्चा गरिएको पाइन्छ । विश्वविद्यालयमा मानविकी तथा सामाजिक शास्त्रअन्तर्गत विभिन्न विषयको पठनपाठन हुँदै आएको छ । यही पठनपाठन या चिन्तन परम्पराबाट ज्ञानसम्प्रदाय तथा प्राज्ञिक परम्परा या गुरूकुल निर्माण हुने गर्छ । विचार, दर्शन, विश्वास, सामाजिक गतिविधि, अध्ययन पद्धति आदिका कारण साझा दृष्टिकोण या साझा सोचको निर्माण हुन्छ । ज्ञानका विविध सम्प्रदायको विकास हुने आधारमा ती सम्प्रदायको भिन्नता र एकत्वको आधार पनि रहेको हुन्छ । यस लेखमा विगतमा भएका महाविद्यालयको प्रयास र अहिलेको महाविद्यालयको संरचनात्मक स्थितिका विषयमा चर्चा गरिएको छ ।

अध्ययनविधि

प्रस्तुत अध्ययनमा त्रिभुवन विश्वविद्यालयअन्तर्गत मानविकी तथा सामाजिक शास्त्र सङ्कायको प्राज्ञिक संरचनालाई मुख्य आधार बनाएर महाविद्यालयको संरचनाका विषयमा खोजी गरिएको छ । मानविकी र सामाजिक शास्त्रअन्तर्गतका विषयको महाविद्यालयका अवधारणामा के कसरी संरचनात्मक आधार निर्माण गर्ने भन्ने मूल समस्यामा यो अध्ययन केन्द्रित छ । यस क्रममा मानविकी तथा सामाजिक शास्त्रअन्तर्गत महाविद्यालय (स्कुल) को यस विषयको ऐतिहासिक विकाससहित वर्तमानको संरचनात्मक आधारको खोजी गरिएको छ । विश्लेषणका क्रममा पूर्वअध्ययनका सामग्री तथा सैद्धान्तिक आधारका सामग्री द्वितीय सामग्रीका रूपमा लिइएको छ । गुणात्मक प्रकृतिको यस अध्ययनमा विश्लेषणका क्रममा व्याख्यात्मक विधिको अवलम्वन गरिएको छ ।

मानविकी तथा सामाजिक शास्त्र सङ्कायको प्राज्ञिक संरचना

त्रिभुवन विश्वविद्यालयलाई केन्द्रीय विश्वविद्यालयका रूपमा विकास गर्ने राज्यस्तरको समसामयिक निर्णयसँगै पुनः संरचनाका विषयमा पनि बहस अघिबढेको देखिन्छ । त्रिभुवन विश्वविद्यालयबाट प्रवीणता प्रमाणपत्र तह क्रमशः हटाउने नीतिसँगै मानविकी तथा सामाजिक शास्त्र सङ्कायबाट पनि प्रवीणता प्रमाणपत्र तहको पठनपाठन क्रमशः हटेको हो । त्रिभुवन विश्वविद्यालयअन्तर्गत मानविकी तथा सामाजिक शास्त्र सङ्काय विषयगत रूपमा विविधता भएको सबैभन्दा पुरानो र बृहत् सङ्काय भएकाले यसको संरचनात्मक पक्ष जटिल रहेको छ । प्रवीणता प्रमाणपत्र तह हटेपछि यस सङ्काय अन्तर्गतका क्याम्पस कलेजमा स्नातक तहदेखि क्लेज स्तरको पठनपाठन आरम्भ भएको हो । यस सङ्कायमा स्नातक तह, अधिस्नातक तह (पीजीडी), स्नातकोत्तर तह र दर्शनाचार्य विद्यावारिधि तहमा दर्शनाचार्य (एमफिल) र विद्यावारिधि (पीएचडी) उपाधि प्रदान गर्ने प्रावधान रहेको छ । यस्तै महाविद्यावारिधि उपाधिको पनि यस सङ्कायमा व्यवस्था गरिएको पाइन्छ । यसरी हेर्दा विषयगत विविधतामा बृहत् आकारको प्राज्ञिक संरचना यस सङ्कायमा विद्यमान रहेको देखिन्छ ।

मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत वार्षिक र सत्रप्रणालीअनुसार पठनपाठन हुने व्यवस्था रहेको छ । वार्षिक प्रणालीअन्तर्गत स्नातक तहका (बी.ए.) कार्यक्रम सञ्चालनमा रहेको छ । स्नातक तहमा चलचित्र अध्ययन (बीएफएस), ललितकला (बीएफए), सामरिक अध्ययन एकल अनुशासनिक पद्धतिमा सञ्चालित वार्षिक प्रणालीका कार्यक्रम हुन् । स्नातक तहमा सत्र प्रणालीअनुसार ब्याचलर इन कम्प्युटर एप्लिकेसन(बीसीए)कम्प्युटर अनुप्रयोगशास्त्री र ब्याचलर इन सोसियल वर्क (बीएसडब्ल्यू) सामाजिक कार्य विषय सञ्चालनमा रहेका छन् । विश्वभाषा क्याम्पसमा एउटा विदेशी भाषा र अर्को भाषाबाहेकको बीएको विषय लिई सत्र प्रणालीमा कक्षा सञ्चालन गर्ने नीति लिए पनि सञ्चालनमा आउन भने सकेको देखिँदैन । यस्तै अधिस्नातक तह (पीजीडी) का कार्यक्रम एकवर्से (दुई सेमेस्टर) सत्रप्रणालीमा सञ्चालनमा रहेका छन् । स्नातकोत्तर तहको कार्यक्रम दुई वर्ष (चार सेमेस्टर) सत्रप्रणालीमा सञ्चालमा रहेको छ । दर्शनाचार्य विद्यावारिधि तहमा दर्शनाचार्य तीन सत्रमा पूरा हुने तथा त्यसपछि विद्यावारिधिको व्यवस्था गरिएको छ । यस किसिमको तहगत पठनपाठनअनुसार स्नातक तहमा ३० विषयमा उपाधि, अधिस्नातक तहमा ६ विषयमा उपाधि, स्नातकोत्तर तहमा ३६ विषय र दर्शनाचार्य विद्यावारिधिमा २३ विषयमा उपाधि दिने गरिएको पनि पाइन्छ । यसबाट मानविकी तथा सामाजिक शास्त्र सङ्कायमा वार्षिक प्रणाली र सत्र प्रणालीको दोहोरो

संरचनाको पठनपाठन कायमै रहेको देखिन्छ । स्नातक तहमा एकभन्दा बढी ऐच्छिक र अतिरिक्त ऐच्छिक (इलेक्टिव) विषयका आधारमा उपाधि दिने र एउटै विषयका अनुशासनमा रहेर उपाधिको व्यवस्था पनि यस सङ्कायमा रहेको प्रावधान हो । यसबाट वार्षिक र सत्र प्रणाली, एकल अनुशासनिक तथा बहुविषय (ऐच्छिक, अतिरिक्त ऐच्छिक) विषयमा उपाधि भएको सङ्काय हो भन्ने तथ्य यस सङ्कायको प्राज्ञिक संरचनाबाट स्पष्ट हुन्छ ।

मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत आङ्गिक क्याम्पस, केन्द्रीय विभाग, विभाग, स्नातकोत्तर कार्यक्रम र सम्बन्धन प्राप्त सामुदायिक तथा निजी क्याम्पसको संरचनात्मक सङ्गठन रहेको छ । यस सङ्गठनात्मक क्षेत्रमा सञ्चालित कार्यक्रम नियमित स्रोतबाट सञ्चालित कार्यक्रम र आन्तरिक स्रोतबाट सञ्चालित कार्यक्रम रहेका छन् । यस्तै सङकायअन्तर्गत विद्यापरिषद् र त्यसअन्तर्गत विषय समिति राखी शैक्षिक र प्राज्ञिक गतिविधि सञ्चालन गरेको पाइन्छ । वर्तमानको यस संरचनामा पठनपाठन गर्नका लागि छिटोछरितो प्राज्ञिक नेतृत्व र प्राज्ञिक उचाइका साथै विश्वस्तरीय आधारबाट संरचना गर्नपर्ने आधार पुनः संरचनाका क्रममा उठेको मूल मुद्धा हो । यस संरचनाका विकल्पमा स्कुल संरचना प्रस्ताव गरिएको र स्कुलको अवधारणाको चर्चा भए पनि यसको कार्यान्वयनको स्पष्ट आधार भने बनाएको पाइँदैन ।

महाविद्यालयको अवधारणात्मक सोच

मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत स्कुल संरचनाका विषयमा बेलाबेलामा चर्चा भए पनि ठोस रूपमा कार्यान्वयनमा आउन भने सकेको छैन । यस सङ्कायमा मानविकी, सामाजिक शास्त्र, प्राविधिक विषयको फरकफरक क्षेत्रको उपस्थिति र एकत्व रहेको देखिन्छ । त्रिभुवन विश्वविद्यालयमा नयाँ शिक्षा योजनासँगै महाविद्यालय (स्कुल) को स्थापनाको अवधारणा अर्थात् स्कुल संरचनाको पनि सोच अघि बढेको हो । नयाँ शिक्षण योजनाअन्तर्गत सिफारिस भएका स्कुलमा (क) स्कुल अफ फाइन आर्टस (ख) स्कुल अफ पब्लिक एडमिनिस्ट्रेसन र (ग) स्कुल अफ इन्टरनेसनल ल्याङ्ग्वेज रहेका छन् । यी स्कुलमध्ये स्कुल अफ फाइन आर्टस र स्कुल अफ इन्टरनेसनल ल्याङ्ग्वेज मानविकी तथा सामाजिक अध्ययन संस्थान अन्तर्गत सञ्चालन गर्ने प्रावधान पनि प्रस्तुत गरिएको पाइन्छ (उपाध्याय, २०५८ पृ. १५) । यसै समयमा सामाजिक शास्त्र, भाषासाहित्य र मानविकी विषय क्षेत्रमा अलग अलग सङ्कायको विकासका लागि सिफारिस पनि भएको देखिन्छ (पंज्ञेनी, २०७६पृ. ६५५) । यो विषय बहसमा मात्र सीमित रहेको र वि.सं २०७१ पछि सेमेस्टर (सत्र) प्रणालीको पुनः आरम्भ भएसँगै स्कुल संरचनाको पनि चर्चा परिचर्चा अघि बढेको पाइन्छ । यस पृष्ठभूमिमा मानविकी तथा सामाजिक शास्त्र सङ्कायको विद्यापरिषदबाट वि.सं २०७३ मा मानविकी तथा सामाजिक शास्त्र सङ्काय विषयगत विविध र बहुआयामिक भएको हुनाले परिणाममुखी सञ्चालनमा देखिएका समस्यालाई प्राज्ञिक दृष्टिले सशक्त, अद्यावधिक र समयसापेक्ष बनाउन संरचनागत परिवर्तनका लागि (क) स्कुल अफ ह्युमानिटिज (ख) स्कुल अफ सोसल साइन्स र (ग) स्कुल अफ एप्लाइड सोसल साइन्सका तीन वटा स्कुलमा संरचित गर्नका लागि सैद्धान्तिक स्वीकृति तथा कार्यविधि निर्माणको स्वीकृतिका लागि प्राज्ञिक परिषद्मा सिफारिस गरेको पाइन्छ (मानविकी तथा सामाजिक शास्त्र सङ्कायबाट जानकारी) । यस्तै वि.सं २०६८ मा ललितकला विषय समिति र ललितकला केन्द्रीय विभाग कार्यान्वयनमा आउँदा यसअन्तर्गतका कार्यक्रमलाई एउटै विषय समिति र एउटै केन्द्रीय विभाग अन्तर्गत सङ्गीत, मूर्तिकला, चित्रकला, तबला सञ्चालन भएअनुसार ललितकला केन्द्रीय विभागभित्र अन्तर्विषयक

स्नातकोत्तर कार्यक्रमहरू सञ्चालन गरिएका नीतिबाट स्कुलको सोच (स्कुल अफ थट) का रूपमा प्रयोगमा आएको देखिन्छ । यद्यपि यसलाई स्कुलका रूपमा भने सञ्चालन गरिएको पाइँदैन । अनुसन्धान केन्द्रको अवधारणात्मक विकासमा पनि स्कुलको आधार लुकेको छ । यसलाई स्कुलभित्रकै अनुसन्धानसँग जोड्दा छुट्टै अनुसन्धान केन्द्र (सिनास, सेरिड, सेडा, रिकास्ट) कायमै गर्ने या स्कुलअनुसार या स्कुलभित्रै अनुसन्धान केन्द्र सञ्चालन हुनपर्ने मान्यतामा पनि स्पष्ट हुनपर्ने देखिन्छ । त्यसैले स्कुल संरचनामा जानु अघि संरचनात्मक आधार र नीतिगत निर्देशन स्पष्ट हुनपर्ने वर्तमानको पहिलो कार्य हो ।

त्रिभुवन विश्वविद्यालयको पुनः संरचनाका क्रममा प्रस्तुत अध्ययनमध्ये त्रिभुवन विश्वविद्यालय दृष्टिकोण बिसतिस (२०२०-२०३०) का प्रस्तावित विकल्प पनि यस पृष्ठभूमिमा स्मरणीय देखिन्छ । सोच (भिजन) २०२०-२०३०को दशकीय अवधारणामा त्रिभुवन विश्वविद्यालयको बहुमुखी स्वरूपअनुसार आठवटा विश्वविद्यालय अर्थात् त्रिभुवन विश्वविद्यालय केन्द्रीय विश्वविद्यालय र सातवटा प्रदेश अनुसार प्रादेशिक त्रिभुवन विश्वविद्यालय (गण्डकी, लुम्बिनी, लगायत) का संरचनात्मक सोच एउटा विकल्पका रूपमा दिइएको छ (टी.यु.,२०१९पृ.१९) । यही विकल्पका रूपमा रहेर स्कुलको संरचनालाई पनि प्रस्तुत गरिएको छ । यहाँ प्रस्तुत गरिएका स्कुलहरूमध्ये मानविकी तथा सामाजिक शास्त्र सङ्कायसँग सम्बद्ध हुनसक्ने स्कुलहरू (क) स्कुल अफ फाइन आर्टस (ख) स्कुल अफ ल्याङ्ग्वेज, लिटरेचर एन्ड लिङ्ग्विस्टिक (ग) स्कुल अफ बिहेविअरल एन्ड सोसल साइन्स (घ) स्कुल अफ इकोनोमिक्स पोलिसी एन्ड डेभलप्मेन्ट (ङ) स्कुल अफ स्ट्राटेजिक स्टडिज रहेका छन् (टी.यु.,२०१९पृ.१९) । आरम्भमा तीन वटा स्कुल (क) स्कुल अफ फाइन आर्टस (ख) स्कुल अफ ल्याङ्ग्वेज, लिटरेचर एन्ड लिङ्ग्विस्टिक (ग) स्कुल अफ इकोनोमिक्स पोलिसी एन्ड डेभलप्मेन्ट आरम्भ गर्ने सोच पनि त्रिभुवन विश्वविद्यालय दृष्टिकोण बिसतिस (२०२०—२०३०) मा अघिसारेको पाइन्छ। त्रिभुवन विश्वविद्यालयको कार्यक्रमलाई प्रभावकारी बनाउन बेलाबेलामा यस किसिमका महाविद्यालय स्कुलको अवधारणा या सोच प्रस्ताव भए पनि यसको कार्यान्वयन भने हुनसकेको छैन । सैद्धान्तिक आधार, कार्यविधि र विद्यमान संरचनाको संयोजनको मार्ग स्पष्ट नहुनु नै कार्यान्वयनको मूल समस्या हो ।

महाविद्यालय (स्कुल) संरचनाको आधार र चुनौती

त्रिभुवन विश्वविद्यालयको स्थापनादेखि नै मानविकी तथा सामाजिक शास्त्रअन्तर्गतको प्राज्ञिक योगदान विशिष्ट रहेको छ । यस क्रममा विश्वविद्यालयको पहिलो सत्र जुलाई १४,१९५९ देखि त्रिचन्द्र कलेजकै भवनमा स्नातकोत्तरको पढाइबाट सुरू भएको र पछि त्रिपुरेश्वरस्थित सञ्चालन गरिएको चर्चा पनि स्मरणीय नै देखिन्छ । (शर्मा, २०६९पृ.१३५) । मानवीय नैतिक मूल्य, सामाजिक मूल्यसहित प्रविधिका तहमा पहुँच राख्ने जनशक्ति उत्पादन गर्ने प्राज्ञिक तहको नेतृत्वमा यो सङ्काय भिन्न प्रकृतिको नै रहेको छ । सन् १९८५ मा मानविकी तथा सामाजिक शास्त्र संस्थान मानविकी तथा सामाजिक शास्त्र सङ्कायमा बदलिएपछि नयाँ संरचनाको कार्यान्वयनमा विगतदेखिको अनुसन्धानपरम्परा परिष्कृत र अद्यनूतनसहित ज्ञानका अनेक क्षेत्रमा अनुसन्धान अघि बढाएको देखिन्छ । मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत डीन, विद्यापरिषद् ,केन्द्रीय विभाग, विभाग, कार्यक्रम, आङ्गिक तथा सम्बन्धन प्राप्त कलेज रहेका छन् । यस संरचनामा डीन, विद्यापरिषद्, महाविद्यालय (स्कुल) हरू पछि विभाग, कार्यक्रम, आङ्गिक तथा सम्बन्धन प्राप्त क्याम्पस र अनुसन्धान केन्द्रको संरचनात्मक आधार खोजी गर्नपर्ने देखिन्छ ।

त्रिभुवन विश्वविद्यालयबाटै केन्द्रीय राष्ट्रिय विश्वविद्यालय बनाउन पहल गरेको देखिन्छ । नयाँ सन्दर्भमा त्रिभुवन विश्वविद्यालयको पुनः संरचना आवश्यक भएकाले एउटा मार्गचित्रसहित यस विषयमा जोड दिनपर्ने हुन्छ । त्रिभुवन विश्वविद्यालयलाई विश्वस्तरीय विश्वविद्यालयका श्रेणीमा अब्बल बनाउन पनि पुनःसंरचना आवश्यक भएको उल्लेख छ (गौतम र अन्य, २०७६पृ. ३७) । प्रत्येक विश्वविद्यालय आजको विश्वबजारमा प्रतिस्पर्धाका तहमा उपस्थित भइरहने पक्ष चुनौती नै देखिन्छ । अहिलेको बजारमुखी पाठ्यक्रमको निर्माण पनि यस विषयसँग जोडिएको पक्ष हो । भूमण्डलीकरणको प्रभावले शैक्षिक प्रणालीमा नयाँ सोच देखापरेको तथ्य पनि विचारणीय नै छ । यस किसिमका नयाँ संरचनात्मक आधारका नाममा केन्द्रीकृत अस्तित्व भत्काउँदै विकल्पका अनेक केन्द्रबाट शैक्षिक नेतृत्वको गरिमा बिगार्न भने हुँदैन । विश्वज्ञानलाई रैथाने ज्ञानसँग जोड्ने या रैथाने ज्ञानलाई विश्वबजारमा पुऱ्याउने नीति आजका सन्दर्भमा बिर्सन मिल्दैन । लामो समयदेखि देशको प्राज्ञिक नेतृत्व गरेको त्रिभुवन विश्वविद्यालय केन्द्रीय विश्वविद्यालयको रूपमा राष्ट्रिय शिक्षाको नेतृत्वमा रहने संरचनाको खोजी नै पुनः संरचनाका क्रममा देखिएको अपेक्षित विषय हो । त्रिभुवन विश्वविद्यालयको रणनीति यस विषयमा सचेत रही अघि बढ्नपर्ने देखिन्छ । बहुमुखी आङ्गिक क्याम्पसमा अहिलेको संरचनामा बढीमा मानविकी, व्यवस्थापन, विज्ञान, शिक्षा र कानुन गरी पाँच वटासम्म फरक संरचनाको एकत्व देखिन्छ । यी क्याम्पसमा यी सङ्काय र संस्थानअनुसार भवन, कर्मचारी, प्राध्यापक फरक हुने गरेको र केही विषयमा साझा आधार पनि रहेको देखिन्छ । पछिल्लो समयमा सेवा आयोगको प्रावधानअनुसार आफ्नो सङ्काय र संस्थान फरक हुने र सोही आधारमा सेवाको मूल्याङ्कन हुने प्रावधानले पृथकीकरणमा नै जोड दिएको देखिन्छ । यही पृथकीकरणको आधार र क्याम्पस कलेजको समायोजन नीतिबाट स्कुलको विषय पनि स्पष्ट हुने देखिन्छ ।

स्कुल आफैमा स्वतन्त्र,स्वायत्त, स्वाधीन हुनपर्ने मान्यता रहेको छ । विद्यमान केन्द्रीय विभागहरूको विघटन, समायोजन गर्ने या यी केन्द्रीय विभागलाई नयाँ विभागका रूपमा पुनसंरचित गर्ने भन्ने विषय पनि स्पष्ट हुनपर्ने देखिन्छ । त्रिवि ऐनमा व्यवस्था भएको केन्द्रीय विभाग र प्रस्तावित स्कुल संरचनाको आधार ऐनमा नै स्पष्ट हुनपर्ने विषय हो । सहकार्यका रूपमा जोड दिई अथवा समायोजन गरी प्राज्ञिक, प्रशासनिक र आर्थिक स्वायत्तताका आधारमा महाविद्यालयको विकास गर्न नीतिनियममा स्पष्ट हुनपर्ने नै हुन्छ ।

अन्तरस्कुल सहकार्यको आधार खोजी गरी स्कुलहरूका बिचको सम्बन्ध र कार्य विकास गर्न सकिन्छ । स्कुल स्थापना भएपछि नै अन्तरस्कुल सहकार्यको उपयुक्त वातावरण निर्माण हुन्छ । यसबाट अन्तरसञ्जालीय कार्य क्षमता विकास र विस्तार गर्न सकिन्छ । यसमा कर्मचारी, प्राध्यापक, भौतिक सामग्री, पाठ्यक्रम आदिमा अन्तर सहकार्य हुने देखिन्छ । विज्ञआधारित सहकार्य, सांस्कृतिक आधारमा गरिने अध्ययन र सहकार्य, भौगोलिक आधारको सहकार्य, नवीन खोज आदिमा अन्तर स्कुल सहकार्यको खोचो पर्छ । सरकारको लक्ष्य केन्द्रित जनशक्ति निर्माण होस् वा अध्ययन, अनुसन्धान, स्थानीय स्रोतको साझेदारी, दिगो विकासप्रतिको अध्ययन, आदिमा अन्तर स्कुलका बिच सञ्जालीय कार्य अघि बढ्न सक्छ । प्रारम्भिक चरणमा विज्ञ (फ्याकल्टी) स्रोत, आर्थिक पक्ष, पाठ्यक्रम निर्माण आदिमा सहकार्य हुने देखिन्छ ।

अहिले मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत त्रिचालिसवटा विषय समिति सक्रिय रहेका छन् । यी विषय समितिबाट स्नातक, अधिस्नातक, स्नातकोत्तर र दर्शनाचार्य विद्यावारिधि तहका पाठ्यक्रम (उपाधि स्वीकृत भई गठित विषयसमितिबाट) निर्माण गरी पठनपाठन र प्राज्ञिक अनुसन्धानका कार्यकलाप अघिबढेका

छन् । त्रिभुवन विश्वविद्यालय सङ्गठन तथा शैक्षिक प्रशासन सम्बन्धी नियम २०५० मा व्यवस्था भएअनुसार विषय समिति नै प्राज्ञिक नेतृत्वको कार्यान्वयनका तहमा निर्णायक रहेको पाइन्छ (त्रिवि २०७३) । यस सङ्कायमा गठित विषय समिति र यी समितिको प्राज्ञिक नेतृत्व र स्कुलका संरचनामा स्कुलको आधारअनुसार विषय समिति निर्माण गर्न पनि नीति नियममा स्पष्ट हुनपर्ने देखिन्छ । स्कुलअन्तर्गत केन्द्रीय विभागको भूमिका स्पष्ट नभएसम्म र केन्द्रीय विभागको अध्यक्ष पदेन विषय समितिको अध्यक्ष हुने विद्यमान नियम परिवर्तन नभएसम्म स्कुल संरचनामा जान जटिल हुने विषय हो । त्रिभुवन विश्वविद्यालय सोच बिसतिस (२०२०–२०३०) मा भएको व्यवस्थाअनुसार मानविकी सम्बद्ध त्रिचालिस वटा विषयहरू पाँचवटा स्कुलमा मात्र सञ्चालन हुनसक्ने स्थिति नहुँदा केन्द्रीय विभाग, विभाग र कार्यक्रमको समायोजन र खारेजी चुनौतीपूर्ण रहेको विषय हो । यसर्थ स्कुल प्राज्ञिक, प्रशासनिक र आर्थिक रूपमा स्वायत्त हुनपर्ने नै देखिन्छ ।

त्रिभुवन विश्वविद्यालयअन्तर्गत केही सङ्काय र संस्थानमा महाविद्यालय (स्कुल) को संरचना प्रयोग भएको पनि पाइन्छ । शिक्षाशास्त्र सङ्कायमा स्कुल अफ एजुकेसन सञ्चालनमा रहेको छ भने व्यवस्थापन सङ्कायमा स्कुल अफ म्यानेजमेन्ट सुचारू देखिन्छ । स्कुल अफ एजुकेसन विद्यावारिधिका तहमा केन्द्रित रहेको छ र केन्द्रीय विभागको अस्तित्व पनि विद्यमान नै देखिन्छ । केन्द्रीय विभाग र स्कुलको स्वचलन आआफ्नै रहेको छ । स्कुलको मान्यता विद्यावारिधिका तहमा लागु भए पनि स्नातकोत्तर र स्नातक तहमा यसको प्रभाव देखिँदैन । शिक्षा र व्यवस्थापनको केन्द्रीय विभाग एउटा मात्र भएकाले यो संरचना सहज भए पनि २२ वटा केन्द्रीय विभाग भएको मानविकी तथा सामाजिक शास्त्र सङ्कायमा भने यस किसिमको व्यवस्था सहज देखिँदैन । केन्द्रीय विभागभित्रका विभागहरू एउटै संरचनामा बाँधिएको शिक्षाशास्त्र सङ्कायजस्तो मानविकी तथा सामाजिक शास्त्र सङ्कायको संरचना देखिँदैन । मानविकी तथा सामाजिक शास्त्र सङ्कायमा केन्द्रीय विभाग, विभाग, कार्यक्रमको छुट्टाछुट्टै अस्तित्वमूलक संरचना रहेको छ । त्यसैले पुनः संरचनाका क्रममा यस विषयमा स्पष्ट नीति नभएमा यो प्रक्रिया हतारमा गरिएको निर्णय मात्र बन्ने देखिन्छ ।

अहिले मानविकी तथा सामाजिक शास्त्र सङ्कायभित्र रहेका विषय अन्य अर्थात् शिक्षा, विज्ञान, व्यवस्थापनका स्कुलमा पनि समेट्न पर्ने स्थिति देखिन्छ । मानविकी तथा सामाजिक शास्त्र सङ्कायअन्तर्गत स्वीकृत विषय समितिमा (१) नेपाली, (२) अङ्ग्रेजी (३) मैथिली, (४) संस्कृत, (५) नेपाल भाषा, (६) हिन्दी, (७) भाषाविज्ञान, (८) भूगोल, (९) अर्थशास्त्र, (१०) गृहविज्ञान, (११) राजनीतिशास्त्र, (१२) पुस्तकालय तथा सूचना विज्ञान, (१३) समाजशास्त्र, (१४) मानवशास्त्र, (१५) मनोविज्ञान, (१६) आमसञ्चार तथा पत्रकारिता (१७) जनसङ्ख्या अध्ययन, (१८) बौद्ध अध्ययन, (१९) ग्रामीण विकास, (२०) ललितकला (सङ्गीत, चित्रकला, मूर्तिकला, नृत्य) (२१) इतिहास, (२२) नेपाली इतिहास, संस्कृति तथा पुरातत्त्व, (२३) सामाजिक कार्य, (२४) लैङ्गिक अध्ययन, (२५) अन्तर्राष्ट्रिय सम्बन्ध तथा कूटनीति, (२६) द्वन्द्व, शान्ति र विकास, (२७) सामरिक अध्ययन, (२८) परामर्श मनोविज्ञान, (२९) खेलकुद विज्ञान, (३०) पर्यटन तथा आतिथ्य (३१) सुरक्षा, विकास तथा शान्ति अध्ययन, (३२) सङ्कट व्यवस्थापन, (३३) श्रम अध्ययन, (३४) सुशासन तथा भ्रष्टाचार निवारण अध्ययन, (३५) योगविज्ञान, (३६) चलचित्र अध्ययन, (३७) कम्प्युटर एप्लिकेसन, (३८) दर्शनशास्त्र, (३९) नेपाल अध्ययन, (४०) फेसन डिजाइन, (४१) विकास अध्ययन, (४२) लोकवार्ता अध्ययन, (४३) विश्वभाषा (मानविकी तथा सामाजिक शास्त्र सङ्कायबाट जानकारी अनुसार) विषय समिति रहेका छन् । यी विषयमध्ये (४०) फेसन डिजाइन, (४१) विकास अध्ययन, (४२) लोकवार्ता अध्ययन पठनपाठनमा

कार्यान्वयन हुनसकेको देखिँदैन । एउटै विषयमा ऐच्छिक विषयका रूपमा पठनपाठनमा रहेका विषय पछि छुट्टै कार्यक्रमका रूपमा सञ्चालन भएको पनि पाइन्छ । अन्तरविषयक (इन्टरडिसिपिलिनरी) आधारअनुसार स्कुलको अवधारणामा मनोविज्ञान विषयभित्रका परामर्श (काउन्सेलिङ) मनोविज्ञान, विद्यालय (स्कुल) मनोविज्ञान आदि एउटै स्कुलमा समेट्न सजिलो हुने गर्छ । यस्तै समाजशास्त्र विषयभित्र सामाजिक कार्य र लैङ्गिक अध्ययन पनि अन्तरविषयक स्कुलमा समेट्न सकिन्छ । राजनीतिशास्त्र विषयभित्रका अन्तर्राष्ट्रिय सम्बन्ध तथा कूटनीति र द्वन्द्व, शान्ति र विकास आदिलाई समेट्दै एउटा स्कुल बनाउन सकिन्छ । यस किसिमबाट स्कुल निर्माण गर्दा स्कुलको सङ्ख्यात्मक आकारमा वृद्धि हुने देखिन्छ । स्कुल संरचनाको अर्को आधार बहुविषयक स्कुल (मल्टिडिसिपिलिनरी) को आधार हो । बहुविषयकमा नेपाली, हिन्दी, संस्कृत, नेपाल भाषा, मैथिली, अङ्ग्रेजीलगायतका भाषा समेटेर स्कुल संरचना निर्माण गर्न सकिन्छ । त्रिभुवन विश्वविद्यालय दृष्टिकोण बिसतिस (२०२०–२०३०) अनुसारका प्रस्तावित स्कुलमा रहेर संरचनात्मक खाका खोजी गर्दा उल्लेख्य नै हुने देखिन्छ । यसअनुसार (क) स्कुल अफ फाइन आर्टसमा सङ्गीत, चित्रकला, मूर्तिकला, नृत्य, चलचित्र, फेसन डिजाइन, लोकवार्ता लगायतलाई समेट्न सकिन्छ । (ख) स्कुल अफ ल्याङ्ग्वेज, लिटरेचर एन्ड लिङ्ग्विस्टिकमा नेपाली, अङ्ग्रेजी, मैथिली, संस्कृत,नेपाल भाषा, हिन्दी, भाषाविज्ञान, बौद्धअध्ययन, विश्वभाषा लगायतका विषयलाई समेट्न सकिन्छ । (ग) स्कुल अफ बिहेविअरल एन्ड सोसल साइन्समा मनोविज्ञान, परामर्श मनोविज्ञान, गृहविज्ञान, पुस्तकालय तथा सूचना विज्ञान, समाजशास्त्र, मानवशास्त्र, योगविज्ञान, लगायतका विषय (घ) स्कुल अफ इकोनोमिक्स पोलिसी एन्ड डेभलप्मेन्टमा अर्थशास्त्र,जनसङ्ख्या अध्ययन, ग्रामीण विकास, श्रम अध्ययन, सुशासन तथा भ्रष्टाचार निवारण अध्ययन,लगायतका विषय (ङ) स्कुल अफ स्ट्राटेजिक स्टडिजमा राजनीतिशास्त्र,सामरिक अध्ययन, सुरक्षा, विकास तथा शान्ति अध्ययन, सङ्कट व्यवस्थापन, अन्तर्राष्ट्रिय सम्बन्ध तथा कूटनीति, द्वन्द्व, शान्ति र विकास,लगायतका विषय समेट्न सकिन्छ । यस्तै इतिहास, भूगोल, नेपाली इतिहास, संस्कृति तथा पुरातत्त्व, दर्शनशास्त्र, कम्प्युटर एप्लिकेसन, राजनीतिशास्त्र, आमसञ्चार तथा पत्रकारिता लगायतका विषयको स्कुल निर्धारण सहज देखिँदैन । यस्तै आमसञ्चार तथा पत्रकारिता स्कुल स्वतन्त्र रूपमा नै सञ्चालन गर्न नसकिने होइन । यसबाट अहिले पाइलट कार्यक्रमका रूपमा महाविद्यालय या स्कुलको अवधारणालाई अघि बढाउन सकिन्छ । यसमा साझा पद्धतिका आधारबाट समावेशात्मक नीति पनि लिन सक्ने देखिन्छ । यसअनुसार त्रिभुवन विश्वविद्यालय दृष्टिकोण बिसतिस (२०२०–२०३०) का अवधारणामा रहेका पाँचवटा स्कुलमध्ये स्कुल अफ फाइन आर्टसलाई कार्यान्वयनमा ल्याउन सकिन्छ । वास्तवमा भौतिक सुविधा सम्पन्न शैक्षिक संस्था, समयानुकूल पाठ्यक्रम निर्माण, प्रभावकारी शिक्षण तथा मूल्याङ्कन विधि, गुणस्तरीय शैक्षणिक र प्रशासनिक शक्ति र लगनशील अनुसन्धानमुखी विद्यार्थीको संयोजनामा प्रभावशाली स्कुल संरचना आजको अपेक्षित विषय हो । यसमा पनि सेमेस्टर प्रणाली होस् या चार बर्से स्नातक कार्यक्रम हतारहतारमा सञ्चालन गरेर फुर्सतमा अभावै अभावमा रमलिने विगतको कार्यबाट पाठ भने सिक्नै पर्ने हुन्छ ।

निष्कर्ष

त्रिभुवन विश्वविद्यालयको स्थापनासँगै मानविकी तथा सामाजिक शास्त्र विषयको अस्तित्व देखापरेको र यस सङ्कायमा संरचनात्मक परिवर्तन हुँदै आएको देखिन्छ । नयाँ शिक्षा योजना लागु भएपछि महाविद्यालय या स्कुलको धारणा पनि देखापरेको हो । यसक्रममा स्कुल संरचनाको स्थूल विभाजन या संरचनात्मक चर्चा पनि गरिएको पाइन्छ । प्रारम्भिक समयमा स्कुलको यो अवधारणा भन्दा केन्द्रीय विभागको संरचनामा नै

जोड दिएको देखिन्छ । विभिन्न समयमा मानविकी, सामाजिक शास्त्र, भाषासाहित्य र स्कुल अफ एप्लाइड सोसल साइन्सको स्थूल विभाजन गर्ने गरी स्कुल संरचनाको सोच राखेको पनि पाइन्छ । पछिल्लो समयमा सूक्ष्म विभाजन या संरचनाको आधार खोजिएको पनि देखिन्छ । स्कुल निर्धारण गर्दा अन्तरविषयक र बहुविषयक आधारमा जोड दिई सहकार्यात्मक आधारको खोजी गर्नु नै उपयुक्त हुने देखिन्छ । स्कुलका सञ्चालनका लागि निर्देशिका र कार्यविधि निर्माण नै पहिलो प्राथमिकतामा रहनपर्ने विषय हो । त्रिभुवन विश्वविद्यालय नेपालको पहिलो विश्वविद्यालय भएकाले यसको संरचनाको ऐतिहासिक महत्त्व बिर्सन मिल्दैन । यस विश्लविद्यालयको आकार संरचना नेपाली परिवेशअनुसार नै विकास र विस्तार गरिएको पाइन्छ । यसले स्थापना गरेको संरचना नेपालमा स्थापित विश्वविद्यालयमा पनि अवलम्वन गरिएको छ । सुदूरपश्चिम विश्वविद्यालयको संरचनात्मक ढाँचा त्रिभुवन विश्वविद्यालयसँग मिलेको देखिन्छ । काठमाडौं विश्वविद्यालयको ढाँचा स्कुल संरचनाबाट अभिमुख भएको छ । आफ्नो स्वत्वमा नै संस्थाको गरिमा र अर्थ रहने गर्छ । प्रभाव, अनुकरण र परत्वले आफ्ना पहिचानगत आधारलाई गुमाउँछ । त्यसैले त्रिभुवन विश्वविद्यालयको आफ्नो आधारभूत संरचना चुस्त बनाए पनि विद्यमान संरचनाकै परिष्कारमा रहेर नवीन गति दिनु नै अर्थपूर्ण हुने देखिन्छ ।

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अतृप्त उपन्यासमा सामाजिक मनोविज्ञानको प्रयोग

*दीपकप्रसाद गौतम**

लेखसार

प्रस्तुत लेखमा लीलबहादुर क्षेत्रीको अतृप्त *उपन्यासमा सामाजिक मनोविज्ञानको प्रयोगसम्बन्धी सिद्धान्तलाई आधार बनाएर यसको प्रयोगको बारेमा उल्लेख गरिएको छ । यस लेखमा क्षेत्रीद्वारा लेखिएको अतृप्त उपन्यासलाई मूल आधार बनाइएको छ । यस उपन्यासमा मेघराज भन्ने प्रमुख पात्रको मनोवृत्तिको रूपमा रीता, सुधा, जुनेली, दिव्या तथा अर्जुन, ईश्वरी, भूपाल र बीरबहादुरजस्ता विभिन्न किसिमका नारी र पुरूष पात्र देखापरेका छन् । मेघराजसँग उक्त नारीहरूले कुनै न कुनै रूपमा यौन र दैनिक व्यवहारजन्य क्रियाकलाप गरेका हुनाले उनीहरूको मनोविज्ञानलाई आसामको नेपाली समाजले प्रभाव पारेको छ । अतृप्त उपन्यासको प्रमुख पात्र सम्पन परिवारको व्यक्ति नभएता पनि ऊ पढेलेखेको शिक्षित व्यक्तिको रूपमा देखापरेको छ । तर उसका चरित्रमा नारीलाई हेर्ने र समाजका सिधासादा व्यक्तिलाई ठग्ने किसिमका दुष्चरित्र देखिन्छन् । उसले सुरूमा मेजरसाहेबकी छोरी सुधासँग विवाह गरेर उसलाई धोका दिएका तथा बङ्गाली इञ्जिनियर केटी रीतासँग विवाह गरेर बिचमा अलपत्र पारेका घटनाका साथै आफ्नो साथीकी श्रीमती जुनेलीलाई लिएर आफूले ट्यूसन पढाउने दिव्याको पनि सतीत्वहरण गरेको छ । उक्त समयमा समाजका धनीमानी, सामन्ती, पुँजीपति र शिक्षित वर्गका व्यक्तिले गरिब, विपन्न, पिछडिएका, सोझासिधा र अशिक्षित व्यक्तिलाई ठग्ने तथा दुःखकष्ट दिनेगरेका प्रसङ्गले उक्त पात्रका मनभित्रका क्रियाकलापलाई सामाजिक मनोविज्ञानको रूपमा हेरेको छ । यसैले यस लेखमा माथिका यिनै पात्रका चेतन, अर्धचेतन र अतेन अवस्थाका क्रियाकलापलाई सामाजिक मनोविज्ञानको रूपमा हेरिएको छ ।*

शव्दकुञ्जी : मनोवृत्ति, यौन, सामाजिक मनोविज्ञान, व्यक्तित्व निर्माण, सांसरिक मोहजाल ।

विषयपरिचय

लीलबहादुर क्षेत्री (पछिल्ला कृतिमा क्षेत्री) को जन्म वि.सं. १९८९ फागुन १८ गते हालको भारतको आसाम राज्यमा पर्ने गुवाहाटी (पछिल्ला कृतिहरूमा गोहाटी) मा भएको हो । साहित्यका विविध विधामा कलम चलाउने क्षेत्रीको मुख्य क्षेत्र भनेको उपन्यास विधा हो र उनले यस विधामा ख्याति प्राप्त गरेका छन् । उनको अतृप्त (२०२६) सालमा प्रकाशित उपन्यास हो । प्रस्तुत लेखमा लीलबहादुर क्षेत्रीको अतृप्त उपन्यासमा मनोविज्ञानको प्रयोगको बारेमा अध्ययन गरिने भएकाले उनका उपन्यासको समाजलाई सामाजिक मनोविज्ञानको सिद्धान्तको रूपमा उल्लेख गरिएको छ । यसरी यस लेखमा साहित्यको समाजशास्त्रमा उल्लेख गरिएको समाज र साहित्यको समाजशास्त्रीय सिद्धान्तको सामाजिक मनोविज्ञानको अध्ययनका आधारमा उल्लेख गरिएको समाजबिच घनिष्ठ सम्बन्ध भएकाले

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अध्ययन विधि

प्रस्तुत अध्ययनका निम्ति पुस्तकालयीय कार्यमा आधारित रहेर सामग्रीको सङ्कलन गरिएको छ । यस लेखमा क्षेत्रीको अतृप्त उपन्यासलाई प्राथमिक सामग्री मानिएको छ । त्यस्तै लीलबहादुर क्षेत्रीका बारेमा यसभन्दा पहिलेका शोधकर्ताले प्रस्तुत गरेका सिद्धान्तका सामाजिक मनोविज्ञानसम्बन्धी सामग्रीलाई द्वितीय

सामग्रीको आधार बनाइएको छ । यसका साथै प्रस्तुत लेखमा क्षेत्रीका आफन्त, समकालीन साथी, विद्वान् तथा समीक्षकसँग सोधपुछ सामग्री सङ्कलन गरिएको छ । यस्ता सामग्रीलाई आवश्यकता र औचित्यका आधारमा द्वितीय सामग्रीअन्तर्गत राखिएको छ । साहित्यको समाजशास्त्रीय सिद्धान्तका रूपमा आवश्यक पर्ने सामाजिक मनोविज्ञान सम्बन्धी सिद्धान्तलाई सामग्री विश्लेषण विधि मानिएको छ । यस सिद्धान्तका आधारमा सङ्कलन गरिएका सामग्रीलाई सामाजिक मनोविज्ञान सम्बन्धी मूल्य र मान्यताका आधारमा विश्लेषण गर्दा वर्णनात्मक, व्याख्यान र खोज विधिलाई मुख्य आधार बनाइएको छ । यसरी क्षेत्रीको यस लेखमा प्राथमिक र द्वितीय स्रोतका रूपमा उल्लेख गरिएका सामग्रीलाई सामाजिक मनोविज्ञानका सिद्धान्तका आधारमा अध्ययन गर्दा विश्लेषण विधिलाई प्रयोग गरिएको छ ।

सामाजिक मनोविज्ञानसम्बन्धी आधार

सिग्मण्ड फ्रायडले सामाजिक मनोविज्ञान सम्बन्धी अवधारणालाई अगाडि सारेका छन् । यस क्रममा उनले आत्मालाई अनुमानको रूपमा अलग गर्दै अवचेतन मनको रूपमा लिएका छन् । तर तिनीहरू एकआपसमा अन्तर्सम्बन्धित र भिन्न रहेको कुरा बताएका छन् । यसलाई एउटा बहुआयामिक दृष्टिकोण मानिन्छ । यसका पदचिन्हहरू मानवीय जीवनका लागि पारस्परिक रूपमा अर्को वस्तुलाई ग्रहण र निवारण गर्ने कार्यको रूपमा भूमिका खेल्न थाल्छन् (फ्रायड, सन् २००३, पृ.१०९) । यदि कुनै एउटा समूहका विचार स्थिर रहेमा त्यसको सट्टामा अवचेतन अवस्था पैदा हुन्छ र आत्माको विश्लेषण ग्रहणशील हुँदैन । त्यस अवस्थामा एउटा स्वरूपलाई सक्रिय बनाउन दुई वस्तुहरूको संयोजन हुनुपर्दछ । यसले आफै आफ्नो स्वरूपलाई देखाउँछ र त्यसको सम्बन्ध विच्छेद हुन्छ । तर यसको स्वरूपलाई छुट्टाउँदा र अवचेतन अवस्थाको ग्रहण गर्दा पनि अर्को समूहको विचार पहिलो सम्बन्धको विपरित हुन्छ अर्थात् एउटा वस्तु निस्क्रिय बन्दा अर्को वस्तु सक्रिय बन्दछ । यसरी फ्रायडले अवचेतन अवस्थामा पनि कुनै अर्को समूहका विचार वा धारणा सक्रिय र विपरित हुने कुरालाई मनोविज्ञानको रूपमा लिएका छन् । तसर्थ सिग्मण्ड फ्रायडको मनोविज्ञानसम्बन्धी सिद्धान्तले साहित्यको समाजशास्त्रीय सिद्धान्तको अध्ययन गर्ने सैद्धान्तिक मापदण्डको रूपमा भूमिका खेलेको देखिन्छ ।

सामाजिक मनोविज्ञानका मूल्य र मान्यताभित्र रहेर तिनीहरूको सबै पक्षमा स्पष्ट र महत्त्वपूर्ण कुरा उल्लेख गरेर साहित्यको समाजशास्त्रीय सिद्धान्तमा व्यक्त रहेको सामाजिक मनोविज्ञानको आधारमा थप उर्जा प्रदान गरिन्छ (मेयर्स, सन् २००५, पृ.१२) । अर्थात् सामाजिक मूल्य र मान्यताहरूले सामाजिक मनोविज्ञानलाई प्रभाव पार्दछन् । सामाजिक मनोविज्ञान एउटा सानो समूहका कुराहरूको खोजी गर्नुभन्दा एउटा रणनीतिक समूहहरूको लागि विभिन्न समस्याहरूको समाधान गर्न केन्द्रित रहेको देखिन्छ । जसरी विज्ञानमा अदालतसम्बन्धी कानुन र व्यक्तिगत अभिप्रायहरू स्वीकार गर्न लायकका हुन्छन् । तबमात्र विचारहरू व्यक्त गरिएका ठाउँहरू एवम् प्रमाणहरूको निर्धारण त्यसैको आधार गरिन्छ । त्यसैगरी सामाजिक मनोवैज्ञानिकहरू पनि वास्तविक विषयवस्तुको आधारमा निर्णय गर्न तल्लीन देखिन्छन् । जस्तैः- मानवीय अवस्थामा तिनीहरूका मूल्य र मान्यताका साथै तिनीहरूको वैयक्तिक दृढ विश्वासका बारेमा रूचिपूर्ण वस्तुहरू के के छन् र यसले मानिसलाई कसरी आफ्नो कर्तव्यबद्ध व्यवहार पूरा गर्ने भन्ने कुरामा जोड दिन्छ । यदि सामाजिक मनोविज्ञानले त्यस्ता कार्यहरू वास्तविक रूपमा कसरी सिद्ध गर्न सक्छ भन्ने कुराको प्रमाण यसबाट प्रमाणित हुने देखिन्छ । जब सामाजिक मनोवैज्ञानिकहरूको अध्ययनको विषय सामाजिक मनोविज्ञान हुन्छ तब यसले सामाजिक मूल्य र मान्यतालाई यथार्थ रूपमा प्रस्तुत गर्दछ । यो एउटा घटना मात्र नभएर यसलाई सन् १९४० मा युरोपमा देखापरेको

पक्षपातपूर्ण घटनाको विरोधी सिद्धान्तको रूपमा लिइन्छ । सन् १९५० को समयमा यसलाई लोकव्यवहारको रूपमा र भिन्न खाले दृष्टिकोणका रूपमा लिइएको पाइन्छ । यस अवधिमा मनोविज्ञानलाई सादृश्य वस्तुका रूपमा अध्ययन गर्न थालिएको देखिन्छ । सन् १९६० मा इच्छाशक्तिको रूपमा रहेको यस सिद्धान्तलाई केही मात्रामा विकास गरिए तापनि यो सिद्धान्त एक प्रकारको विद्रोह एवम् अपराधसम्बन्धी गतिविधिका रूपमा उदाएको देखिन्छ । सन् १९७० मा यसले स्त्री जातिका उत्तेजनाका क्षणलाई लिङ्गभेद र प्रजनन् कार्यसम्बन्धी अध्ययनका आधारमा चित्रण गरेको देखिन्छ । सन् १९८० मा यसलाई एउटा स्वास्थ्यसम्बन्धी मनोयोग एवम् मनोवैज्ञानिकहरूको अस्त्रका दृष्टिकोणको रूपमा विकास गर्ने प्रयत्न गरिएको पाइन्छ । सन् १९९० को दशकमा यससम्बन्धी पदचिन्हद्वारा व्यक्तिहरूको रूचिलाई कसरी सम्मान गर्ने भन्ने कुरामा यो सिद्धान्त तल्लीन रहेको देखिन्छ (मेयर्स, सन् २००५, पृ.१२) । यसमार्फत यस सिद्धान्तले संस्कृतिमा विविधता र ऐन्द्रिय आकर्षणको पूर्व स्थितिलाई गतिशील वस्तुका रूपमा लिएको पाइन्छ । सामाजिक मनोविज्ञानले सामाजिक इतिहासको प्रतिबिम्बित गर्ने भएकाले यसलाई मेयर्सले साहित्यको समाजशास्त्रमा व्यक्त गरिएको सामाजिक मनोविज्ञानको सिद्धान्तअनुरूप सिद्ध गरेको देखिन्छ ।

धेरै विद्यार्थीहरूको सामाजिक विज्ञानसँग सधै निश्चित रूपमा रहेको मनोविज्ञानले वास्तवमा मानवमस्तिष्कको केही ज्ञान र खोजको प्रक्रियालाई उनीहरूको उपकरणको माध्यम मान्दछन् । सामाजिक विज्ञानको सफलता पनि सामाजिक मनोविज्ञानको अध्ययनपछि मात्र पूर्ण रूपमा सम्भव हुन्छ र अनि मात्र यसले ज्ञानमा शुद्धता ल्याउँछ । कुनै औपचारिक रूपमा प्रदर्शन वा हल गरिएका चाहिनेभन्दा बढी वस्तुहरू पनि मनोविज्ञानमा समावेश हुन्छन् । स्वीकार नगरिएका कुनै कुराहरू पनि तत्कालै मनोविज्ञानका कारणबाट हटाइन्छ । त्यसपछि यसमा उल्लेख गरिएको वास्तविक मनोविज्ञानले सत्यतालाई पक्का गर्दै सत्यको बारेमा कुनै संस्थाहरू एवम् मानव मस्तिष्कसम्बन्धी कार्यहरू गर्दछन् । यसले विभिन्न प्रयत्नहरूलाई शुद्ध गर्दछ र एकआपसमा रहेका ज्ञानसम्बन्धी कुराबाट सम्मिलित गर्दछ । तर यससँग सम्बन्धित कुरालाई सामान्य र विशेषगरी आवश्यक पर्ने साझा गुणहरूमार्फत् ख्याल गरिन्छ । यसले पूर्ण रूपमा सामाजिक विज्ञान, दार्शनिक इतिहास, समाजशास्त्र, सांस्कृतिक मानवशास्त्र एवम् धेरै उच्च रूपमा रहेका सामाजिक विज्ञान, धर्मसम्बन्धी विज्ञानका कानुन, शिक्षा र कलाजस्ता कुराको निर्माण गर्दछ । विज्ञानसम्बन्धी काम गर्ने कारिन्दाहरू जस्तै कोम्ते र वर्तमान समयमा देखापरेका दुर्खिमजस्ता व्यक्तिले पनि आफूलाई मनोविज्ञानको रूपमा चिनाएका छन् । केही व्यक्तिहरूले ओठेभक्तिको रूपमा मनोविज्ञानलाई लिएता पनि तिनीहरूमा समाजशास्त्रीय दृष्टिकोणमा प्रतिपादन गरिएको सामाजिक मनोविज्ञानको कमी रहेको देखिन्छ । कुनै लेखहरूलाई नैतिक, आर्थिक वा कुनै सामाजिक विज्ञानको रूपमा खुशीसाथ स्वीकार गरिएता पनि तिनीहरूले मनोविज्ञानलाई चिनेका हुँदैनन् (म्याकडुगल, सन् १९०८, पृ. १-२) । कुनै लेखकहरूले सामाजिक विषयलाई चिनाएर सामाजिक मनोविज्ञानलाई वास्तविक धरातलमा ल्याउँछन् तर अभ्यासगत रूपमा उनीहरूले मनोविज्ञानका आधारभूत कुरालाई ख्याल गर्दैनन् । त्यसैले मनोविज्ञानको सहमतिमा आइपुग्न तिनीहरूले मनोविज्ञानसम्बन्धी विषयलाई स्पष्ट रूपमा दृष्टिदर्शन गर्नु पर्दछ । यसरी म्याकडुगलले उल्लेख गरेको मनोविज्ञानको सिद्धान्तलाई साहित्यको समाजशास्त्रमा आवश्यक पर्ने सामाजिक मनोविज्ञानको सिद्धान्तको रूपमा अध्ययन गरिएको पाइन्छ ।

मनोविज्ञानलाई भूल, प्रयत्न र विगतका अप्रिय दुःखद स्मृतिका रूपमा आउने विभिन्न अनुभवहरूका कारक तत्व मानिन्छ । त्यसैले कुनै कुरामा भूल हुनु प्रमुख कारण हो (शास्त्री, सन् १९६३, पृ.२१८-२१९) । पहिलो

कुरा प्रत्येक व्यक्तिको मनमा अप्रिय दु:खद स्मृतिका अर्थात् विभिन्न प्रसङ्गहरूका कारण भूल बनेर आउँछन् । जसलाई एउटा विशेषता नै मानिन्छ । यसले मानिसको जीवनमा कुनै न कुनै रूपमा प्रभाव पारेको हुन्छ । यस्तो भूलबाट विभिन्न कुराहरूको स्मृति र अनुभवलाई दोस्रो चोटिको समयमा पटकपटक सम्झेर हानीकारक वस्तुबाट सचेत गराएको पाइन्छ । सामाजिक व्यवहारका कारणले गर्दा एक व्यक्तिको मन र कर्म दोस्रो व्यक्ति वा उसको विचार र आचारणबाट प्रभावित हुन्छ । त्यस्तो व्यवहार स्पष्ट रूपमा कमसेकम व्यक्ति व्यक्तिका बिचमा प्रकट गरिन्छ । एक्लो व्यक्ति पनि बहकाएको समयमा सामाजिक स्थितिमा रहन्छ (शास्त्री, सन् १९६३, पृ.२३४) । त्यसपछि उसले आफ्नो सही पक्ष र आलोचना पक्ष थाहा पाउन सक्छ । दोस्रो कारण एक लोकबाट धेरै लोकमा सामाजिक व्यवहार फैलिने गर्दछ र यसले व्यक्तिको मनभित्र अनेक कुराहरूमा प्रभाव पार्दछ । तसर्थ शास्त्रीले उल्लेख गरेको सामाजिक मनोविज्ञानको सिद्धान्तलाई साहित्यको समाजशास्त्रीय अध्ययनमा उल्लेख गरिएको सामाजिक मनोविज्ञानको सिद्धान्तबाट पनि अध्ययन गरिएको पाइन्छ ।

दुईवटा दृष्टिकोण वा विचारबाट मनोविज्ञान पनि सामाजिक कार्यमा सामेल हुन्छ । पहिलो कुरा यो व्यक्तिको मानसिक प्रक्रियाहरूले एवम् सामाजिक पर्यावरणको सन्दर्भबाट समाज पर जान सक्दैन । दोस्रो कुरा मनोविज्ञानसम्बन्धी सम्पूर्ण समूहहरूको मानसिक प्रक्रियाहरूको अध्ययनको रूपमा सामाजिक मनोविज्ञानलाई लिइन्छ । व्यक्ति अवचेतन अवस्थामा पनि समूहका क्रियाकलापमा आफू आफै सहभागी बन्दछ (दोषी र अन्य, सन् १९७०, पृ.९५) । यसमार्फत मनोविज्ञानसम्बन्धी चेतनालाई यो समूहले मस्तिष्कको रूपमा अध्ययन गर्न थाल्दछ । अनि यससम्बन्धी कुरालाई सामाजिक मनोविज्ञानको रूपमा लिइन्छ । यसरी दोषी र अन्य व्यक्तिले उल्लेख गरेको सामाजिक मनोविज्ञानको सिद्धान्तलाई साहित्यको समाजशास्त्रीय अध्ययनमा उल्लेख गरिएको सामाजिक मनोविज्ञानको सिद्धान्तबाट पनि अध्ययन गरिएको छ ।

सबै प्रकारको सामाजिक सम्बन्धमा मानव प्रकृतिको दुई विरोधी तत्त्व बढी सूक्ष्मताका साथ पहिलो र दोस्रोमा अन्तर्निहित हुन्छन् । यिनीहरूको एक प्रवृत्ति मुख्य रूपबाट ग्रहण भएका हुन्छन् । जुन अवहेलित भएपछि प्रतिरोध गर्ने उद्देश्यका साथ युयुत्साको लागि उद्दीप्त हुन्छन् । एउटाको विपरित दोस्रो प्रवृत्ति मुख्यतया सौम्य र सुकुमार हुन्छ (वर्मा, सन् १९६६, पृ.७८-७९) । यसमा पहिलो र दोस्रोको सम्बन्ध एकआपसमा प्रेरित भइसकेपछि मान्छेहरू लालस हुन्छन् तथा परस्पर अनुक्रियाको लागि ज्यादा प्रयत्न गर्छन् । यिनै विरोधी प्रवृत्तिको एकसाथ अस्तित्त्व देखाएर मनुष्यका असामाजिक चरित्रका क्रियाहरू भइरहन्छन् । यसमा मानव प्रवृत्तिका विशेषता विस्तारै असहज वातावरणबाट सहज बन्न थाल्छन् । यही कारणले गर्दा मनुष्यको जीवनमा आउने प्रतिरोधात्मक भावनामा शक्ति, क्षमता र लोभ आदि विकसित हुँदै जान्छन् । परस्पर विरोधसम्बन्धी विचारलाई हामीले चाहे पनि नचाहे पनि विकासका प्रेरणाका स्रोत बन्दछन् । यसले तिनीहरूलाई स्वत: रूपमा स्वीकार गर्दछ । परस्परका इच्छाशक्ति र द्वैधताको भावनाको विकास गराउने काम सामाजिक मनोविज्ञानले गर्दछ ।

हाम्रो सामाजिक सम्बन्धमा हरेक व्यक्तिका विचारसम्बन्धी दृष्टिकोण प्रकट हुन्छन् । मान्छेको कुनै आवेग पारस्परिक सेवा अथवा विरोध वस्तुको माध्यमबाट एकआपसमा सम्बन्धित हुन्छन् । यसको उद्देश्य पूर्तिका लागि मान्छेहरूलाई सामूहिक प्रयासहरूको आवश्यकता पर्दछ (वर्मा, सन् १९६६, पृ.९५) । यिनीहरूको सामुहिक प्रयास एउटाबाट अर्कोमा निकट हुनपुग्दछ । त्यस अवस्थामा पनि व्यक्ति वा समाजको बिचमा निकट सम्बन्ध हुन्छ । एकतर्फबाट समाजको कारणबाट उसले केही लक्षणलाई निश्चित रूपमा ग्रहण गर्न सक्दछ ।

यसकारण उसले सामाजिक जीवनका सम्पूर्ण आदर्शसम्बन्धी बाटा पहिल्याउन सक्छ । अर्को, व्यक्तिका बिचमा रहँदा पनि व्यक्ति व्यक्ति नै बन्न सक्छ । यसैले सामाजिक सम्बन्धका कारणले गर्दा पनि व्यक्तिको दृष्टिमा सामाजिक मनोविज्ञानले प्रभाव पार्दछ । यसरी गिन्सवर्गले उल्लेख गरेको सामाजिक मनोविज्ञानलाई साहित्यको समाजशास्त्रमा व्यक्त रहेको सामाजिक मनोविज्ञानको आधारभूत सिद्धान्तको रूपमा अध्ययन गरिएको पाइन्छ ।

ईसाको १६ औं शताब्दितिर मनोविज्ञानलाई आत्माको विज्ञानका रूपमा लिएको पाइन्छ । आत्माको खोज र उसको बारेमा विचार गर्ने मुख्य उद्देश्य मनोविज्ञानको रहेको देखिन्छ । आत्माको स्थिरस्वरूप र आकार नभएकाले यस परिभाषामा विद्वान्हरूका बिच मतभेद हुन थालेको पाइन्छ । निश्चित स्वरूप र रूपरङ्ग बिना आत्माको वैज्ञानिक अध्ययन सम्भव हुँदैन । अतः विद्वान्हरूले मनोविज्ञानलाई आत्माको विज्ञान नमानी मस्तिष्कको विज्ञान मानेको देखिन्छ (माथुर, सन् १९७३, पृ.८-९) । यसको उद्देश्यले मस्तिष्कको अध्ययन गर्न थालेपछि मस्तिष्कको सम्यक अर्थको बारेमा पनि केही कठिनाइ आउन थालेको पाइन्छ । जुन कुरा आत्माको विषयमा आधारित मानिन्छ । मनोवैज्ञानिक मानसिक शक्तिहरू, मस्तिष्कको स्वरूप एवम् उसको प्रवृत्तिको ठीक ठीक रूपमा निर्धारण गर्न नसकेको देखिन्छ । मस्तिष्कको सम्बन्ध व्यक्तिको व्यक्तित्व, विवेक र विचारण शक्तिबाट हुन्छ यसैको अभावमा मानिस पागल वा सुषुप्त बन्दछ । यदाकदा यसको योग्यताको अभाव पशु जगत्मा पनि मिल्छ । यस अध्ययनबाट विद्वान्हरूले मानसिक शक्तिहरूले अलगअलग कार्य गर्न सक्दैनन् भन्ने कुरा पत्ता लगाएका छन् । सम्पूर्ण मस्तिष्कले एकसाथ काम गर्ने कुरालाई विद्वान्हरूले मनोविज्ञानको चेतनाको विज्ञान मानेको पाइन्छ । यही परिभाषामा पनि विद्वान्हरूबिच गम्भीर मतभेद रहेको र यसलाई पनि अपूर्ण वस्तुको रूपमा लिएको देखिन्छ । चेतन मन पनि चेतन, अर्धचेतन र अचेतन गरी तीन भागमा बाँडिएको पाइन्छ । यसै क्रममा वाटसनले मनोविज्ञानलाई व्यवहार विज्ञानको शुद्ध रूप माने भन्ने मत माथुरको रहेको छ । जुन कुरालाई साहित्यको समाज शास्त्रीय अध्ययनको लागि सामाजिक मनोविज्ञानको सिद्धान्तको रूपमा अध्ययन गरिएको छ ।

विश्वप्रसिद्ध मनोवैज्ञानिक सिग्मण्ड फ्रायडले साहित्यको समाजशास्त्रमा प्रयोग हुने मनोविज्ञानको सिद्धान्तलाई प्रारम्भमा स्नायु रोगहरूको चिकित्सा गर्ने विधिको रूपमा प्रयोग गरेका पाइन्छ (कुमार, सन् २००२, पृ.१) । पछि आएर यस सिद्धान्तलाई दार्शनिक विज्ञानको रूपमा प्रयोग गर्न थालिएको पाइन्छ । यसै सिद्धान्तअनुसार सम्पूर्ण मानव लोकको भित्री रूपको अध्ययन गर्न यो सिद्धान्त सफल भएको छ । यसैको माध्यमबाट सम्पूर्ण मानसिक घटनाका प्रयोजनमा अन्तरनिहित वस्तुहरूको बारेमा ज्ञान दिने कार्यमा यो सिद्धान्त सफल हुनपुगेको देखिन्छ । त्यसपछि साहित्यकारहरूको कुनै लेखले धेरै मूल्य दिन सक्ने वस्तुका रूपमा यसलाई लिइएको देखिन्छ । मानिसले रक्तसञ्चारको गडबडीको कारणमा थकावट र उत्तेजना आदि कुराहरूको प्रभाव पर्दछ । उक्त कुरालाई पनि साहित्यकारले आफ्ना साहित्यिक कृतिमा त्यसैअनुरूप प्रयोग गर्छन् (कुमार, सन् २००२, पृ.४६) । हाम्रो समाजका व्यक्तिले आफ्नो जीवनको उतारचढाबमा विभिन्न खाले अनुभवको बारेमा विचार गर्छन् । त्यसमा हरेक वस्तुले हाम्रो जगत्मा रहेका अन्य वस्तुहरूका साथ व्यवहारमा आउने साना साना गल्ती सुल्भाउन एवम् उसको भित्र रहेका प्रवृत्तिको चिन्ह सम्भनाको लागि साहस र सङ्कल्प उत्पन्न गराउने वस्तुका रूपमा फ्रायडले मनोविज्ञानको सिद्धान्तलाई उल्लेख गरेका छन् (कुमार, सन् २००२, पृ.५५) । तसर्थ आजको युगमा आएर फ्रायडको मनोविज्ञानसम्बन्धी सिद्धान्तलाई साहित्यको समाजशास्त्रीय अध्ययनको सामाजिक मनोविज्ञानको सिद्धान्तको रूपमा प्रयोग गरिएको छ ।

कार्ल युङ्गको सामाजिक मनोविज्ञानसम्बन्धी सिद्धान्तलाई मानवमस्तिष्कको उपजको रूपमा लिइन्छ । सबै व्यक्तिका मनोरचनामा सामाजिक प्रभाव परेको हुन्छ । त्यसैले मानवमनोविज्ञानको अध्ययन समाजको स्वरूप एवम् संस्कृतिको सापेक्षतामा गर्नुपर्दछ । मानसिक संरचनामा सामाजिक वातावरण तथा समाजको सम्बद्धताबाट नै व्यक्तिको मानसिकता विकसित र प्रभावित हुन्छ । त्यसैले व्यक्तिको मानसिकतालाई समाजको परम्परा, प्रचलन, रूढी तथा संस्थाले प्रभावित पारेको हुन्छ । समाज व्यक्तिहरूको योगको एउटा व्यवस्थित समन्वय हो । समूह तथा समाजको सत्ता व्यक्तिको भन्दा पिंढीपिंढीदेखि चल्दै आएको हुन्छ । यसले व्यक्तिलाई कुनै न कुनै प्रकारले आफ्नो समूहको रूढि तथा परम्परामा समायोजन गर्दछ । यसरी व्यक्तिको क्रियाकलाप तथा स्वभावमा वंशपरम्परा र समाजको प्रभाव परेको हुन्छ" (क्षेत्री, २०६४, पृ.४२) ।

मानवीय कार्यहरू सार्वजनिक औद्योगिक र श्रमसम्बन्धी कार्य संस्कृति, धर्म, सेनासम्बन्धी नेतृत्व एवम् तिनीहरूका क्रियाकलापको वृद्धि गर्नेजस्ता खोजपूर्ण कार्यलाई सहयोग गर्ने काम सामाजिक मनोवैज्ञानिकहरूले गर्दछन् । त्यसैको माध्यमबाट त्यसमा देखिएका मानवीय सम्बन्धका विभिन्न प्रयत्नलाई तर्कपूर्ण रूपमा व्यक्तिहरूको बीचमा विभाजित गरिन्छ । तर यस्ता धारणाहरूतर्फ सामाजिक मनोवैज्ञानिक र उनीहरूले गर्ने कार्यहरू सम्पूर्ण रूपमा सत्यतथ्यमा आधारित हुँदैनन् (क्रेस र अन्य, सन् १९८२, पृ.१-२) । हाम्रो समाजका नेतृत्वकर्ताहरूमा बढी मात्रामा स्थिर रहेका कुरालाई मुख्यतया सरकारी प्रशासक, व्यापारी, श्रमिक नेतृत्वकर्ता, विश्वविद्यालय एवम् अन्य दातृसंस्थाले सुनेका महत्त्वपूर्ण कुराहरू सामाजिक मनोविज्ञानमा आधारित हुन्छन् । सामाजिक मनोविज्ञानसम्बन्धी खोजपूर्ण कुरालाई सधैंभरि महत्त्वपूर्ण वस्तुको लागि प्रयोग गरिन्छ । माथिका उक्त संस्थाको धारणा सामूहिक उत्तरदायित्वको लागि सरकारद्वारा गरिने खर्चको वास्तविकता थाहा पाउने एवम् समुदायका विभिन्न खाले कुरालाई व्यवहारमा उतार्ने एवम् उपयोगी वस्तुका रूपमा प्रयोग गर्ने काम सामाजिक मनोविज्ञानबाट गरिन्छ । तसर्थ, क्रेस र क्रुट्चफिल्डले व्यक्त गरेको सामाजिक मनोविज्ञानलाई साहित्यको समाजशास्त्रीय सिद्धान्तको रूपमा रहेको सामाजिक मनोविज्ञानको माध्यमबाट अध्ययन गरिएको देखिन्छ ।

मानवीय कल्पनाको बाहिरी तहबाट हेर्दा अनुभव गर्न सकिने एवम् एउटा विवादास्पद प्रतिक्रियामा परिवर्तन ल्याउने वस्तु सामाजिक मनोविज्ञान हो । यसले एउटा आकृतिको रूपरेखाको विषयको कार्यसम्बन्धी मत बनाउने तथा मनोवैज्ञानिक सिद्धान्त जस्तै सामाजिक सिद्धान्तलाई स्वयम्सिद्धि रूपमा जोड दिने एवम् एउटा पूर्वधारणासँग परिवर्तनको कल्पनासम्बन्धी धारणाको मत बताउनेजस्ता तीनवटा अवधारणामा जोड दिन्छ । लेवी स्टारसको कर विनिमयसम्बन्धी क्रियात्मक सिद्धान्तअनुसार अपवादको रूपमा बनाइएका होमनस र इक्सनेइडरले लिएको वास्तविकतालाई पनि मनोविज्ञानको रूपमा लिइएको पाइन्छ । पहिलो, अप्रत्यक्ष रूपरेखाको विभिन्न अवधारणालाई सामान्यीकरण गर्न विनिमयसम्बन्धी कुरालाई अस्वीकार गर्ने तथा यस्तै अवधारणासम्बन्धी अर्थलाई साँगुरो बनाएर परिवर्तन गर्ने कुरा पनि सामाजिक मनोविज्ञानसँग संयोजित हुनपुगेको देखिन्छ । दोस्रो, लेवी स्टारसको विनिमयसम्बन्धी अर्थको रूपरेखाको अवस्थालाई पुनः पुष्टि गर्ने तथा पूर्ण रूपमा परिणत गर्ने सामाजिक सङ्गठनहरूका भिन्न खाले संस्थाहरूको अध्ययन गर्दा उनले सामाजिक मनोविज्ञानको सिद्धान्तलाई व्यक्त गरेको देखिन्छ (टर्नर, सन् २००५, पृ.२४०-२४१) । यी कुराहरूको चर्चा गर्दा उनले तत्कालै त्यागिएका वा भेटिएका व्यक्तिगत तथा संस्थागत समूहलाई समाजभित्र पसेर अध्ययन गरेको पाइन्छ । लेवी स्टारसले अस्वीकार गरेको नतिजामा होमनस र इक्सनेइडरले विभिन्न खाले तर्क गरेर विनिमयको सिद्धान्तलाई पहिलो प्राथमिकता दिएको पाइन्छ । होमनस र इक्सनेइडरले पहिलो प्राथमिकताको

रूपमा लिएको विनिमयको सिद्धान्तमा पनि सामाजिक मनोविज्ञानको प्रभाव परेको देखिन्छ । यस क्रममा उनीहरूले विनिमयको सिद्धान्तलाई व्यक्तिगत रूपमा चिनाउने क्रममा सामाजिक संरचनाको सिर्जना गरेका तथा यससम्बन्धी क्रियाकलापहरूको बारेमा अनुभव गरेको देखिन्छ । यसरी लेवी स्टारसको विनिमयसम्बन्धी क्रियात्मक सिद्धान्त तथा होमनस र इक्सनेइडरले लिएको वास्तविक विनिमयको सिद्धान्तलाई साहित्यको समाजशास्त्रीय सिद्धान्तअन्तर्गत रहेको सामाजिक मनोविज्ञानको सिद्धान्तको रूपमा अध्ययन गरिएको पाइन्छ ।

मानिस एक समाजबाट अर्को समाजमा घुलमिल हुँदा फरक कुरा सोच्दछन् । त्यस अवस्थामा उनीहरूले भिन्न खाले प्रतिक्रिया देखाउँछन् । उनीहरूको बिचमा रहेका विचार, अनुभव एवम् व्यवहारलाई कुनै समाजमा बस्ने व्यक्तिहरूले मनोविज्ञानको रूपमा लिनुका साथै एकआपसमा अनेक खाले क्रियाकलापसँग तुलना गर्छन् । उनीहरूले भर्खरै जन्मेको बालकको अवलोकन गर्दा पनि प्रत्येक समाजका बालकमा कुनै न कुनै रूपमा मनोविज्ञानले प्रभाव पारेको कुरा व्यक्त गरेको पाइन्छ । यसैले भिन्नभिन्न किसिमका समाजमा बस्ने व्यक्तिका मूल्य, मान्यता, धारणा एवम् विचारमा सामाजिक मनोविज्ञानले प्रभाव पार्दछ (इम्बेर र अन्य, सन् २००३, पृ.४२०) । सम्पूर्ण विश्वजनिन दृष्टिकोणबाट हेर्दा पनि रूनु, डराउनु र हाँस्नुजस्ता कुराहरूमा कुनै न कुनै रूपमा मनोविज्ञानसम्बन्धी घटनाहरू देखापर्छन् । मनोविज्ञानले समाजमा घट्ने उस्तै खाले तथा भिन्न खाले घटनाहरूको अध्ययन गर्दछ । सामाजिक संस्कृतिमा देखिएका विभिन्न पक्षको वर्णन पनि मनोविज्ञानबाट गरिन्छ । यस क्रममा संस्कृतिले मानिसको धारणा वाक व्यवहारमा भिन्नता ल्याउने कारक तत्त्वको रूपमा मनोविज्ञानलाई लिइन्छ । यसका साथै सामाजिक मूल्य, मान्यता, रहनसहन, चालचलन एवम् व्यवहारजन्य कुराहरूमा देखापर्ने विविध पक्षहरूको अध्ययन मनोविज्ञानद्वारा गरिन्छ । मनोविज्ञानअन्तर्गत भाषा, सभ्यता, संस्कृति, विवाद र धर्मजस्ता कुराहरू पनि आउने भएकाले तिनीहरूलाई एकसाथ राखेर अध्ययन गरिन्छ (इम्बेर र अन्य, सन् २००३, पृ.४२०) । प्रत्येक मानिसमा देखापर्ने भोक, तिर्खा, निद्रा, ट्यास, रिसराग, खुशी, यौनजन्य इच्छा आकाङ्क्षा, दया, माया, घृणा, करूणा, सहानुभूति, डर, अनुभव, डाह र क्रोधजस्ता भावनाजन्य क्रियाकलापमा देखिएका कुरालाई मनोविज्ञानको रूपमा हेरिन्छ । तिनीहरूबाट उब्जिएका समस्यालाई कसरी समाधान गर्ने भन्ने कुराको विश्लेषण पनि सामाजिक मनोविज्ञानले गर्दछ । यसरी इम्बेर र अन्य विद्वानहरूले उल्लेख गरेको समाजशास्त्रको सिद्धान्तअन्तर्गत रहेको मनोविज्ञानको सिद्धान्तलाई साहित्यको समाजशास्त्रीय सिद्धान्तअन्तर्गत पर्ने सामाजिक मनोविज्ञानको सिद्धान्तबाट पनि अध्ययन गरिएको पाइन्छ ।

सामाजिक मनोविज्ञानको सम्बन्ध सामाजिक विज्ञानसँग रहेको हुन्छ । एउटा समाजका आधारभूत कुराका घटनाहरूसँग मस्तिष्कसम्बन्धी कुरा बारम्बार आउँछन् । सामाजिक मनोविज्ञानले मानवमस्तिष्कसम्बन्धी प्रक्रियाको निर्धारण गर्दछ । यसको अध्ययनले असाधारण रूपमा कुनै समुदायको जीवनपद्धति एवम् विकास तथा व्यक्तिगत उन्नतिका लागि महत्त्वपूर्ण भूमिका खेल्दछ (गिल्बर्ट, सन् २०००, पृ.२३-२४) । अर्थशास्त्र, संस्कृति, भूगोल र जीवविज्ञानसम्बन्धी अवस्था सामाजिक मनोविज्ञानका तत्त्वभन्दा बिल्कुलै भिन्न देखिए तापनि तिनीहरूले कुनै न कुनै रूपमा सामाजिक मनोविज्ञानसँग सम्बन्ध राख्दछन् । सामाजिक मनोविज्ञानका उपकरणमार्फत् विशुद्ध रूपमा यी कुराको अध्ययन पनि गरिन्छ । यसले व्यक्तिगत र सामूहिक रूपमा समाजशास्त्रसम्बन्धी विविध क्रियाकलापमा प्रभाव पार्दछ । समाजमा देखापर्ने विभिन्न किसिमका समस्याको खोजी गर्ने र त्यसको समाधान गर्ने काम पनि सामाजिक मनोविज्ञानबाट सम्भव हुन्छ । तसर्थ गिल्बर्टले उल्लेख गरेको समाजशास्त्रसम्बन्धी सामाजिक मनोविज्ञानको सिद्धान्तलाई साहित्यको समाजशास्त्रीय सिद्धान्तको सामाजिक मनोविज्ञानको सिद्धान्त अन्तर्गत राखेर अध्ययन गरिएको पाइन्छ ।

सामाजिक मनोविज्ञान विज्ञानको एउटा शाखा हो । यसले मानिसको आत्मासम्बन्धी कुराको अध्ययन गर्दछ । साहित्यको बारेमा विभिन्न अर्थ एवम् आशय बुझ्न पनि मनोविज्ञानको प्रयोग गरिन्छ । कहिलेकाहीँ मनोविज्ञानसम्बन्धी विपरित बुझाइको कारणले गर्दा पनि मानिसमा एक प्रकारको भ्रम सिर्जना भएको देखिन्छ (उडवर्थ र मार्टल, सन् १९७१, पृ.१) । यसको माध्यमबाट मानिसले आफ्नो रूचि र चाहनाका क्रियाकलापहरू थाहा पाउँछन् । यसैले मानिसको इच्छा र रूचि थाहा पाउनको लागि यसले मानिसका विभिन्न कार्य एवम् व्यवहारमा देखिने समस्याको खोजी गर्दछ । त्यसपछि ती समस्या आउनका कारणको महत्त्वपूर्ण तथ्य पत्ता लगाएर त्यसको समाधान गर्ने काम गर्दछ । वंशाणुगत गुण र वातावरणले पनि मनोविज्ञानमा प्रभाव पार्दछ । थाइराइड ग्रन्थीले वातावरणको लागि आयोडिनलाई उपलब्ध गराउने काम गर्दछ । यदि आयोडिनको मात्रा कम भएमा कुनै व्यक्तिको थाइराइड हर्मनमा पनि कमी देखाउँछ । वातावरणको कारणले पनि मनोविज्ञानलाई प्रभाव पार्दछ । यसैको फलस्वरूप यसले वैयक्तिक जीवनमा भिन्नता ल्याउने गर्दछ । प्राकृतिक रूपमा मानिसहरूमा भिन्नता ल्याउने अर्को कारक तत्त्व वंशाणुगत गुण हो । यसले मनोविज्ञानसम्बन्धी गुणहरूलाई एकअर्का बीच अन्तर्सम्बन्धित गराउँछ । एउटा व्यक्तिको स्वभावमा मनोविज्ञानसम्बन्धी कारणले गर्दा वंशाणुगत गुण र वातावरणको नतिजामा भिन्नता ल्याएको देखिन्छ । सामाजिक तत्त्वहरूको पछाडि वातावरण र वंशाणुगत गुणसम्बन्धी सामाजिक मनोविज्ञानका पदचिन्ह रहेका हुन्छन् । प्रत्येक व्यक्तिमा भिन्नता ल्याउने विभिन्न उपायमध्ये वातावरणीय तत्त्वले एकअर्को कुरामा प्रभाव पारेको देखिन्छ (उडवर्थ र मार्टल, सन् १९७१, पृ.१५२) । तर यसले कहिलेकाहीँ उस्तै खाले अवसर एउटा व्यक्तिबाट अन्य व्यक्तिमा राम्ररी प्रयोग गरेको पाइन्छ । उसले वातावरणसम्बन्धी कुराबाट राम्रो किसिमका सामग्री प्रयोग गरेको हुन्छ । वातावरण र वंशाणुगत गुणको प्रभावले पनि सामाजिक मनोविज्ञानमा असर पारेको देखिन्छ । तसर्थ, उडवर्थ र मार्टलले उल्लेख गरेको सामाजिक मनोविज्ञानसम्बन्धी सिद्धान्तलाई साहित्यको समाजशास्त्रीय सिद्धान्तअन्तर्गत पर्ने सामाजिक मनोविज्ञानको तत्त्वको रूपमा अध्ययन गरिएको देखिन्छ ।

अतृप्त उपन्यासमा सामाजिक मनोविज्ञानको अवस्था

लीलबहादुर क्षेत्रीको अतृप्त उपन्यासमा मेघराज भन्ने प्रमुख पात्रको मनोवृत्तिको रूपमा रीता, सुधा, जुनेली तथा दिव्याजस्ता नारी पात्रहरूका अतिरिक्त अर्जुन, ईश्वरी, भूपाल तथा बीरबहादुरजस्ता विभिन्न पुरूष पात्रहरू देखापरेका छन् । मेघराजसँग तिनीहरूले कुनै न कुनै रूपमा यौन र दैनिक व्यवहारजन्य काम गरेको हुनाले उनीहरूको मनोविज्ञानलाई आसामको नेपाली समाजले प्रभाव पारेको छ । यसैले यस उपन्यासमा उल्लेख गरिएका पात्रहरूको मनोरचनालाई सामाजिक मनोविज्ञानको रूपमा व्यक्त गरिएको छ ।

अतृप्त उपन्यासको प्रमुख पात्र मेघराजले आफ्नो परिवारबाटै समाजमा प्रगति गर्ने प्रेरणा पाएको हुनाले उसको मनोविज्ञानको निर्माणमा उसको परिवारको महत्त्वपूर्ण भूमिका रहेको देखिन्छ । मेघराजले "दाजुदेखि म सधैं डराउँछु" (क्षेत्री, २०२६, पृ.११) भन्ने कुराबाट उसले सानैदेखि दाजुको कडा अनुशासन र नियन्त्रणमा रहेर पढेको कुरा यस उपन्यासमा उल्लेख गरिएको छ । मेघराजको दाजुले उसलाई आफ्नो वशमा राखेर पढाए पनि उसप्रति दाजुको असाध्यै मायाममता भएको हुनाले उसले आफ्नो पढाइलाई तीव्र गतिमा अगाडि बढाएको छ । उसको दाजुले पल्टनमा जागीर खाएको कुरा क्षेत्रीले उल्लेख गरेका हुनाले तथा उसले इच्छाअनुरूप बी.एस्सी.सम्मको उच्च शिक्षामा उसकै दाजुको योगदान रहेकाले उसले आफ्नो परिवारबाट नै अगाडि बढ्न प्रेरणा पाएको छ । बाल्यकालदेखि नै मेघराज सिपाहीको क्वाटरमा दाजुसँग बसेर पढेको हुनाले "बोलचालका

धेरैजसो साथीहरू सिपाही तथा तिनका छोराहरू" (पृ.१४) भएको कुरा क्षेत्रीले उल्लेख गरेका छन् । स्कुलका सहपाठी साथीहरूसित उसको सम्पर्क केवल स्कुलमा नै हुनेगरेको देखिन्छ । यसकारण परिवारको मनोबलका कारण उसको मनोरचना निर्माण भएको छ ।

मेघराजले आफ्नो बी.एस्सीको पढाइ सिध्याएपछि इष्टमित्रहरूको सहयोगले ऊ सेक्रेटरियरको अर्थ विभागमा उच्च दर्जाको किराटीमा जागीरेको रूपमा नियुक्त भएकाले उसको मनोरचनाको निर्माणमा उसको समाजको पनि योगदान रहेको देखिन्छ । "सेक्रेटेरियटको कारिन्दाहरूको जागीर अन्य ठाउँहरूको भन्दा धेरै थियो" (पृ.१५) भन्ने कुरा *अतृप्त* उपन्यासमा उल्लेख भएकाले त्यसपछि मेघराजको मनको दुर्बलता केही दबिएर आत्मविश्वासले उसको ह्रदयमा अतिकति बलियो ठाउँ ओगटेको देखिन्छ । यसैको फलस्वरूप उसका मनभित्रका नित्यहीन भावना क्षीण हुँदै गएर मनोबलका टुसा उम्रन थालेको पाइन्छ । उक्त समयपछि मेघराजको मनमा विवाहसम्बन्धी कुराहरू आउन थालेको हुनाले त्यस क्रममा उसले रीता, सुधा, जुनेली र दिव्याजस्ता नारी पात्रहरूका अतिरिक्त अर्जुन, ईश्वरी, चन्द्रमान तथा भूपालजस्ता पात्रका सङ्गतले पनि उसको मनोरचनामा प्रभाव पारेको छ । यसैले मेघराजको मनोरचनामा समाजका विभिन्न व्यक्तिले प्रभाव पारेको हुनाले उसले समाजबाट नै उन्नति, प्रगति र अधोगति गर्ने प्रेरणा पाएर अगाडि बढेको छ ।

मेघराजको मनोवृत्तिमा उसको युवावस्थाको सामाजिक परिवेशले प्रभाव पारेको छ । आफ्नो "सम्पूर्ण मनोदशा एउटा अड्को थापेजस्तो छ" (पृ.७) भनेर उसले आफूले के चाहन्छु, मेरो लक्ष्य के हो भन्ने कुरामा सामाजिक परिवेशप्रति सचेत भएको छ । उसको समाजमा विभिन्न किसिमका उच्च र सङ्कीर्ण भावना विद्यमान रहेकाले उसका हरेक किसिमका भित्री इच्छा र आकाङ्क्षाहरू सामाजिक परिवेशमा केन्द्रित रहेको देखिन्छ । त्यस्तै मेघराजको मनोस्थितिमा "एउटा नवीन जीवनको तृष्णा, नवीन घरबारको तृष्णा, नवीन रूपको तृष्णा" (पृ.५) जस्ता उसका कल्पनामा देखिने एउटी जीवन सङ्गिनीको तृष्णाले गर्दा उसले आफ्नो सम्पर्कमा आएका नारीहरूलाई कामबासना र कृतिम यौनका साधनहरूको रूपमा प्रयोग गरेको छ । यसरी उसले आफूसंग चिनाजानी गरेका नारीसँग प्रेम तथा विवाह गर्ने र अन्त्यमा तिनीहरूको इज्जत र प्रतिष्ठा लुटेर धोका दिएकाले उसको मनले आफूले विगतमा गरेका दुष्कर्मपूर्ण एवम् लालयित कार्यप्रति पश्चाताप्को अनुभव गरेको पाइन्छ ।

मेघराजको व्यवहारमा असल गृहणीको र उसलाई सुहाउने किसिमको आधुनिक ढाँचाको जीवनसाथीको चाहना रहेको पाइन्छ । उसले आफ्ना साथीभाइ एवम् इष्टमित्रको सहयोगमा आफ्नो लागि असल जीवनसाथी छान्ने कुरामा तल्लीन भएको छ । यसको लागि उसलाई अर्जुनसिंह क्षेत्री, भूपाल एवम् उसको दाजुले उसको विवाहसम्बन्धी प्रबन्ध मिलाउने काम गरेका छन् । तर उसलाई भने आफ्नो पढाइ उच्च भएकाले त्यसप्रति अहम् भावना जागृत भएको छ । उसले सुधा र जुनेलीजस्ता केटीलाई विवाह गरे तापनि धोका दिनसमेत पछि पर्दैन । उसले समाजका मूल्य र मान्यताप्रति चासो राख्न खोजे पनि समाजका मूल्य, मान्यता र व्यवहारलाई स्वीकार नगरेको पाइन्छ । यदि समाजका मूल्य र मान्यतालाई स्वीकार गर्दथ्यो भने हरेक समयमा उसले आफूले जीवनसाथी बनाएर ल्याएका केटीहरूलाई धोका दिएर सामाजिक बन्धनरूपी साङ्ग्लालाई चुडाल्ने थिएन भन्ने क्रियाकलाप तथा व्यवहार उसको समाजको लागि स्वीकार्य नभएको देखिन्छ । उसले यदि "हामी दुई भिन्न समाजका, हाम्रो जाति बेग्लै, संस्कार बेग्लै" (पृ.२०) भन्ने कुरा बोध गरेर पनि रीतालाई मृत्युको मुखमा पुऱ्याएको हुनाले उसको व्यवहारमा अपराध यौन मनोविज्ञानले प्रभाव पारेको पाइन्छ । त्यस्तै उसले "एउटी ग्रामीण केटी, आधुनिक सभ्यताको बतास बाहिरकी" (पृ.२३) भनेर

तिरस्कार गरेकी जुनेलीलाई विवाह गरेर पुन धोका दिएको छ । उसले अरूलाई धोका दिने प्रवृत्तिलाई पुन दोहोऱ्याएको छ । "मेजर साहेबकी छोरी कुनै खुटीवाला महाजनकी छोरी होइन" (पृ.३७) भनेर उसले आफ्नो इच्छाअनुरूप विवाह गरेर ल्याएकी सुधालाईसमेत त्यागेको हुनाले उसमा कुकृत्यपूर्ण तथा वासनात्मक यौनसम्बन्धले जरो गाडेको देखिन्छ । उसले सुधालाई विवाह गरेता पनि फेरि अर्की केटीसँग यौन तृप्तिको खोजीको लागि भनेर दिव्यालाई ट्यूसन पढाउने निहुँले उसलाई विवाह गर्ने सुन्दर सपना देख्दछ । *अतृप्त* उपन्यासमा देखापरेको प्रमुख पात्र मेघराजले आफ्नो जीवनमा आफै दुष्चरित्र, दुष्परिणाम, कुकृत्य तथा यौनजन्य एवम् स्त्रीलम्पटपूर्ण व्यवहारहरू गरेकाले उसको मनोस्थिति खराब तथा विभिन्न खाले यौनजन्य तृष्णाले प्रभाव पारेको छ । यति मात्र नभएर उसको मनोरचनामा "प्रति हिंसाको भावना जागृत" (पृ.७५) भएकाले उसको मनोविज्ञानमा समाजका आचारण र अनुशासनसम्बन्धी कुराका विपरित भावनाहरू उत्पन्न भएको पाइन्छ । यसरी मेघराजमा उत्पन्न भएका बाल्यकालीन शिक्षादीक्षादेखि लिएर उसको युवावस्थामा गरेका सम्पूर्ण यौनजन्य व्यवहारलाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा व्यक्त गरिएको छ ।

अतृप्त उपन्यासको अर्को सहायक पात्र अर्जुनले आफू बसेको समाजमा मेघराज र पाठक बुढाको परिवारमा एक आपसमा वैवाहिक सम्बन्ध कायम गराउने कुरामा अग्रसर देखिएको छ । उसको मनोरचनामा समाजप्रति सहयोग गर्ने भावना रहेको पाइन्छ । उसले मेघराजको विवाह पाठक बुढाकी छोरीसँग गराइदिने उद्देश्यले मेघराजलाई भुवनेश्वरी र कामाख्यादेवीको दर्शन गर्ने निहुँले केटी हेराउन पाठक बुढाको घरतर्फ लगेको देखिन्छ । त्यस अवस्थामा अर्जुनले पाठक बुढालाई देख्दाबित्तिकै दुईवटा हात जोडी नमस्कार गरेर "ए ! कतिखेर आउनुभो ? अरू आमाहरू खोइ त ?" (पृ.३२) भनेर सबैप्रति राम्रो व्यवहार गरेकाले उसको व्यक्तित्त्व निर्माणमा सामाजिक परिवेशले प्रभाव पारेको देखिन्छ । यसरी अर्जुनको मनोस्थिति वा व्यवहारमा सामाजिक परिवेशले प्रभाव पारेको हुनाले उक्त कुराहरूलाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

अतृप्त उपन्यासको अर्को सहायक पात्र भूपालमा पनि अनुकूल भावनाको विकास भएको छ । उसको मनोरचनामा सामाजिक मूल्य र मान्यताले प्रत्यक्ष प्रभाव पार्दछ । उसको व्यवहारमा समाजसेवा र मानवताको भावना रहेको देखिन्छ । उसले आपत्विपत् पर्दा आफूले कहिल्यै नदेखेको व्यक्ति मेघराजसँग परिचित भएर उसलाई सहयोग पुऱ्याएको छ । उसले मेघराजलाई केही समय आफ्नो घरमा विना पैसा राखेर विष्णु मन्दिरको छेउमा रहेको प्राथमिक पाठशालामा शिक्षकको जागीरमा लगाइदिएको छ । यसका साथै मेघराजको आयस्रोत कम भएकोले आत्तै छिमेकको ठाउँमा दिव्या नाम गरेकी केटीलाई ट्यूसन पढाइ दिने व्यवस्था मिलाइ दिएको छ । यति मात्र नभएर उसले आफ्नो समाजमा "आदिकवि भानुभक्तको जन्म जयन्ती मनाउने विषयलाई लिएर व्यस्त" (पृ.१३४) भएको देखिन्छ । उक्त कार्यक्रममा भूपालले स्वयम् सेवकको भूमिका निर्वाह गरेको छ । भूपाल उक्त कार्यक्रमबाट छिट्टै उम्कन सक्ने स्थितिमा नभएको र त्यहाँ धेरै कुराको व्यवस्था मिलाउनुपर्ने हुनाले एवम् "स्वयम्सेवकहरूद्वारा बाहिरबाट आएका जिनिसहरू पुऱ्याउनुपर्ने हुनाले मेघराज र दिव्यासँग एकैचोटि घर जान सकेको देखिँदैन" (पृ.१३८) । यसका साथै भूपाल स्वयम्ले विष्णु मन्दिरको छेउमा रहेको प्राथमिक पाठशालामा "त्यस स्कुल सञ्चालन समितिको अग्रगण्य व्यक्ति"(पृ.१२५) को रूपमा भूमिका निर्वाह गरेको छ । त्यसैले भूपालको मनोरचनामा समाजसेवा र मानवताको भावना विकास भएको देखिन्छ ।

अतृप्त उपन्यासको अर्को सहायक पात्र मेघराजको साथी ईश्वरीको मनोरचनामा समाजप्रति अनुकूल भावनाको प्रभाव रहेको देखिन्छ । "ईश्वरीले मेघराजलाई आफ्नो घर जाने वचन दिन्छ र परन्तु एकदिन त्यस्तै कुरा आइलागेको हुनाले ऊ ईश्वरीको घरमा समेत जान बाध्य भएको देखिन्छ । यसका साथै उसले लुभ्रेझुम्रे र कहिले पनि केश नकोरेर बुढो भिखारीजस्तो देखिने वीरेलाई सिंगारेर आफ्नो कार्यालयमा पियनको जागीरसमेत लगाइदिएको कुरा यस उपन्यासमा उल्लेख गरिएको छ । यति मात्र नभएर मेघराजले भगाएर लगेकी जुनेलीलाई पुनः आफ्नी श्रीमतीको रूपमा स्वीकार गरेर आफूले समाजमा निभाउनुपर्ने दायित्व पूरा गरेको छ । यसैले गर्दा ईश्वरीको मनोरचनामा उदार, सहयोगी एवम् इमान्दार भावना रहेको देखिन्छ । यसरी ईश्वरीले समाजप्रति गरेका महत्त्वपूर्ण कार्य तथा व्यवहार एवम् उसको उदार एवम् सहयोगी खाले मनोवृत्तिलाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

क्षेत्रीको *अतृप्त* उपन्यासकी अर्को पात्र रीता बनर्जीको आफ्नो घर परिवारको चाहनाअनुरूप उसले जागीर खाएको तथा अभिभावकका इच्छाअनुरूप आफनो जाति र संस्कारअनुरूपको बङ्गाली इन्जिनियर केटासँग विवाह गराएको छ । उसको मनोरचनाको निर्माण आफ्नो पारिवारिक तथा सामाजिक कारणले प्रभाव पारेको छ । उसकी आमाले भनेअनुसार "रीता ठ्याम्मै मानेकी थिइन" (पृ.२३) भनेर व्यक्त गरेको हुनाले रीताको विवाह उसको इच्छाविरूद्ध भएको देखिन्छ । त्यस्तै रीताले विवाह अघि सेत्रेटरियटको अफिसमा काम गर्दा मेघराजसँग वार्डस लेकतिर घुम्न जाने प्रस्ताव राखेकी तथा त्यसैअनुसार ऊसँग स्वच्छन्द पाराले घुमफिर गरेकी हुनाले "वास्तवमा विवाह नै प्रेमको लक्ष्य हुनुपर्छ" (पृ.२१) भनेर प्राप्ति विनाको प्रेमको कुनै मोल हुँदैन भन्ने कुरा उसले व्यक्त गरेकी छे । यसैको फलस्वरूप उसले मेघराजलाई चाहेको हुनाले रीताको विवाह आफूले नचाहँदा नचाहँदै पनि उसको इच्छा विपरित बङ्गाली इन्जिनियर केटासँग भएको देखिन्छ । यसैले रीताले आफ्नो मनोरचनामा उत्पन्न भएका दमित कुण्ठाको पूर्ति गर्नको लागि आफ्ना प्राचीन संस्कार, मूल्य र मान्यताहरू तोड्नुपर्छ भन्ने भावनाबाट प्रेरित भएकाले उक्त कुरालाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

अतृप्त उपन्यासकी नायिका सुधाको मनोरचनामा उसको माइतीघर र त्यसै समाजअनुरूपको भूमिका रहेको देखिन्छ । प्रारम्भमा सुधा आफू जन्मेहुर्केको संस्कारप्रति दृढ रहेको देखिन्छ । मेघराजले उसलाई वास्ता गर्न छोडेपछि उसको व्यवहार र मनोरचनामा केही परिवर्तन आएको छ । मेघराज र गुरूङसेनीको सम्बन्ध थाहा पाउनुभन्दा अघि सुधाको चरित्रमा माइतप्रतिको घमण्ड, शान र इज्जत देखाएर मेघराजको घरपरिवारमा धक्का पुग्ने किसिमको काम गरेकी छे । तर पछि उसको मनोरचनामा मेघराजलाई कसरी आफ्नो बनाउने र ऊप्रति कसरी आफ्नो सम्बन्ध नजिक बनाउने भन्ने मनोवृत्तिको विकास भएको देखिन्छ । मेघराजले उसलाई विवाह सकिएपछि दुलही घरमा अन्माउने समयको प्रथम रातमा नै उसले आफ्नो श्रीमान् मेघराजलाई वितृष्णा पारेकी छे । "ओ हो ! यो कोठा कति साँगुरो र होचो छ । कसरी बस्नुहुन्छ यहाँ तपाईं ?" (पृ.३८) भनेर उसले एक किसिमको घमण्ड देखाउँछे । बिहान उज्यालो भएर ओछ्यानबाट उठेपछि मेघराजलाई देख्नेबित्तिकै "यो घरमा नोकर छैनन् ? खोइ, चिया कसैले पनि ल्याएन" (पृ.४०) भनेर उक्त कुरा व्यक्त गरेकी छे । उसमा एक किसिमको शान, रवाफ र घमण्ड रहेको कुरा थाहा पाउन सकिन्छ । त्यस्तै उसको उक्त खाले क्रियाकलाप र व्यवहार मेघराजले देखेकाले र ऊ सुधालाई छोडेर भाग्ने विचार महसुस गरी एम्.एस्सी् पढ्न गोहाटी विश्वविद्यालयमा जानुपऱ्यो भनेर दाजु भाउजूबाट सल्लाह लिएर गएको छ । त्यसपछि ऊ

घरमा नआएकाले सुधाले विरक्तिएर सन्यासिनीको जीवन बिताउने इच्छा प्रकट गरेको देखिन्छ । त्यस्तै सुधा सन्यासिनी भएर स्वामी रामदासका साथ गएको र विस्तारै पूजाआजा गर्न थालेकोले ऊ पछिल्लो समयमा सांसारिक मोहजालबाट मुक्त हुने मनोस्थितिमा पुगेको पाइन्छ । यसरी सुधाका जीवनमा आएका उसका सम्पूर्ण मनोस्थितिसम्बन्धी कुरालाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

क्षेत्रीको यस उपन्यासकी अर्को पात्र जुनेलीको मनोस्थितिभित्र उसको समाज र परिवारले प्रभाव पारेको हुनाले ऊ प्रारम्भमा ग्रामीण र अशिक्षित नारीको रूपमा उभिएकी छे । विवाहपछिको समयमा भने उसले आफ्नो व्यवहारलाई परिवर्तन गरी सभ्य र आधुनिक नारीको रूपमा देखिएकी छे । सुरूमा मेघराजसँग कुरा गर्न हिच्किचाउने जुनेलीले केही समयपछि मेघराजलाई देख्दा मन फुकाएर कुराकानी गरेको हुनाले उसको मनोरचनामा समय र परिस्थितिअनुसार फेरबदल भएको देखिन्छ । ईश्वरीसँग विवाह बन्धनमा बाँधिएकी जुनेलीको कोठामा ईश्वरी नभएको अवस्थामा मेघराज आउँदा उसले मेघराजलाई तिरस्कृत गर्नुको सट्टा सँगै फिल्म हेर्न जाने अनुरोध गरेकी छे । उसले मेघराजलाई आत्तै डेरामा सुत्नसमेत आग्रह गरेको हुनाले उसको मनोस्थितिमा परपुरूषप्रति आकर्षित हुने रोगले सताएको पाइन्छ । मेघराजले जुनेलीलाई तिम्रो विवाह नभएको भए म तिमीलाई विवाह गर्ने थिएँ भन्ने कुरालाई पनि उसले सहज रूपमा स्वीकार गरेकी छे । "बिहाले हामीलाई कसरी थुन्छ र ? अहिले पनि के हामी एक अर्काको बन्न सक्दैनौं ?" (पृ.८०) भन्दै दुईदिनपछि दुवै भागेर विवाह गर्ने र यदि मेघराज त्यस समयमा नआएमा आफूले विष खाएर आत्माहत्या गर्ने कुरासम्म गर्न जुनेली अग्रसर भएको देखिन्छ । त्यसपछि मेघराजकी पत्नी बनेर भागेकी जुनेलीलाई भने केही दिनपछि मेघराजले गोहाटीबाट काठमाडौं लगेकाले उसलाई पुनः मेघराजसँग घुम्ने, डुल्ने र फिल्म हेर्ने चाहनाले सताएको छ । यसैको फलस्वरूप मेघराजले उसका चाहनाहरू पूरा गर्न अस्वीकार गरेकाले जुनेलीले "तपाईं नजानोस्, म चन्द्रमान दाजुसित जान्छु" (पृ.१०५) भनेर उसको अनुमतिबिना जुनेली र चन्द्रमान भएर फिल्म हेर्न गएको पाइन्छ । त्यसपछि जुनेलीका त्यस्ता क्रियाकलापहरूलाई मेघराजले व्यवहारिक नमानेको हुनाले ऊ जुनेलीलाई धोका दिएर आसामको तीनसुकियातर्फ गएको छ । जुनेली फेरि अलपत्र परेकाले उसले ईश्वरीलाई पुनः चिठी लेखी उसैसँग घरजम गर्दछे । यस उपन्यासमा उल्लेख गरिएअनुसार जुनेलीको मनोरचना स्थिर नभएकाले समय र परिस्थितिअनुसार गतिशील भएको देखिन्छ । यसरी जुनेलीको मनोरचनासम्बन्धी व्यवहारलाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा उल्लेख गरिएको छ ।

अतृप्त उपन्यासकी अर्को पात्र दिव्याले पनि आफ्नो बुबाआमा र छिमेकीको सल्लाहअनुसार गणित विषयको ट्यूसन पढ्ने विचार गरेकाले उसको मनोरचनामा उसको परिवार र समाजको अग्रणी भूमिका रहेको छ । भूपालले पनि दिव्याका बुबाआमाले भनेअनुसार मेघराजलाई दिव्याको निम्ति भनेर गणित विषय पढाइदिने शिक्षकको व्यवस्था गरिदिएको छ । त्यस्तै दिव्याले मेघराजसँग घुमफिर गर्ने तथा सिनेमा हेर्नजाने कार्य गरेकाले उसको व्यवहार र क्रियाकलापबाट मलाई मेघराजले नै विवाह गरोस् भन्ने कुरा प्रकट भएको देखिन्छ । त्यसैगरी मेघराजले दिव्यासँग विवाहको बारेमा कुराकानी गर्दा त्यसको प्रतिउत्तरस्वरूप दिव्याले आफूले विवाह "गरे भने तपाईंसित गर्नेछु" (पृ.१४०) भन्ने कुरा व्यक्त गरेकी छे । उसले आफ्नो यौन चाहनाको क्षतिपूर्ति मेघराजबाट गराउन चाहेकी छे । जुन समयदेखि दिव्याले मेघराजलाई देखेकी थिई त्यसबेलादेखि नै उसले मेघराजको बारेमा धेरै जान्न उत्सुकता लिएकी छे । मेघराजले विष्णु मन्दिरमा उद्घाटन भएको

भानुभक्तको जयन्ती समारोहको कार्यक्रममा गीत गाई आफ्नो कला प्रदर्शन गरेकाले ऊ मेघराजप्रति अझ आकर्षित भएकी छे । "म तपाईंसित बोल्न चाहन्नँ" (पृ.१३८) भनेर मेघराजले आफ्नो कलाकारिता दिव्या सामु लुकाएको हुनाले उसले कृतिम रोष प्रकट गरेकी छे । यसैले दिव्याको मनोबल एवम् प्रेरणालाई उच्च बनाउनको लागि उसको परिवार तथा समाजको महत्त्वपूर्ण योगदान रहेको हुनाले उक्त कुरालाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

अतृप्त उपन्यासको अरू पात्रहरू दिव्याकी आमाबुबाको मनोरचनामा आफ्नो परिवार र समाजप्रतिको दायित्वबोध भएकाले उनीहरूले भूपाल पात्रमार्फत आत्नी छोरीको लागि गणित ट्यूसन पढाउने शिक्षकको बन्दोबस्त गरेका छन् । गणित ट्यूसन पढाउने शिक्षक मेघराजलाई दिव्याकी आमाले "लौ यहाँ नानीले ५/६ महिना हेरिदिनु पऱ्यो" (पृ.१२८) भनेर आग्रह गरेको देखिन्छ । दिव्याको गत साल गणित विषयको परीक्षा बिग्रेकोले उसले ट्यूसन पढाइ दिएका खण्डमा पास हुन्छे कि भनेर दिव्याकी आमाले आफ्नो छोरीको बारेमा चिन्ता लिएको पाइन्छ । त्यसैगरी मेघराजले दिव्यालाई गणित विषयको ट्यूसन राम्ररी पढाएको हुनाले दिव्याकी आमा सन्तुष्ट भएको कुरा यस उपन्यासमा व्यक्त गरिएको छ । यसका साथै ट्यूसनको पढाइ सिध्याइ सकेपछि दिव्या र मेघराज एकघण्टासम्म डुल्दा र सँगै चलचित्र हेर्न जाँदा पनि दिव्याका बुबाआमाले उसलाई स्वतन्त्र रूपमा छाडिदिएको हुनाले उनीहरूले आत्नी छोरीको विवाह मेघराजसँग गरिदिन चाहेको देखिन्छ । दिव्याका बुबाआमाको घरको वातावरण सभ्य, शान्त एवम् सौहार्दपूर्ण वातावरणमा रहेको हुनाले उनीहरूको मनोरचना पनि सुसंस्कृत समाजअनुरूप विकास भएको कुरा यस उपन्यासमा उल्लेख गरिएको छ । यसरी दिव्याका आमाबुबाको मनोरचनाको निर्माण हुनुमा उनीहरूको परिवार तथा समाजको उल्लेखनीय भूमिका रहेकाले उक्त कुरालाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

अतृप्त उपन्यासमा उल्लेख गरिएका गुमानबहादुर गुरूङको परिवारमा आफ्नो जातिप्रतिको प्रेम र सांस्कृतिक जगेर्ना भएकाले उनीहरूको मस्तिष्कमा जातीय भावना तथा मनोविज्ञानको अभिव्यक्ति पाइन्छ । गुमानेका परिवारले आफ्नो जाति मात्रै नभएर अन्य नेपाली जातिहरूप्रति पनि राम्रो र उपर्युक्त खाले व्यवहारहरू गरेका छन् । उसको मृत्यु हुँदासमेत नेपाली कुल्ली र चौकीदारले उसको दाहसंस्कारको लागि भनेर "आपसमा यिनीहरू सबैसित पैसा उठाउन थालेका थिए" (पृ.४९) भन्ने कुरा यस उपन्यासमा व्यक्त भएको देखिन्छ । त्यस्तै गुमानेको परिवारले साँझको समयमा मादल बजाएर एकआपसमा रमाइलो गरेर आनन्दसँग बसेका हुनाले पनि उनीहरू बिचको आपसी व्यवहार र क्रियाकलाप सुमधुर भएको पाइन्छ । यसैगरी उनीहरूका साथमा बस्ने अन्य नेपाली कुल्लीहरूसँग पनि यिनीहरूले नजिकको सम्पर्क बढाएको हुनाले गुमानबहादुरकी श्रीमतीले आफ्नो लोग्नेको मृत्युपछि त्यही आफ्नो नजिकमा बस्ने मसानेसँग रातभरि गीत गाएकी छे । "दुई रातसम्म रातभरि जुवारी खेल्दै" (पृ.५४) गीतै गीतले भुलेर ऊ मसानेसँग पोइल गएकी छे । यसरी यस उपन्यासमा उल्लेख गरिएका गुमानबहादुरको परिवारको मनोरचनामा सामाजिक मनोविज्ञानले प्रभाव पारेको हुनाले उक्त कुरालाई क्षेत्रीको उक्त उपन्यासमा पनि यसैअनुसार प्रयोग गरिएको छ ।

अतृप्त उपन्यासको अर्को पात्र वीरबहादुरको जीवनमा आर्थिक सङ्कट र गरिबीको कारणले गर्दा उसको मनोरचनाको निर्माणमा समाजले प्रभाव पारेको देखिन्छ । "वीरबहादुर वास्तवमा एक सिपाहीको छोरो" (पृ.६१) भएकाले उसको बाबु अङ्ग्रेजी साहेब कर्नेलको अर्दली छँदा उसका बुबाआमाले वीरबहादुर काखैको बालक

छँदा मृत्यु भएकाले उसको पालनपोषण पनि कर्नेलसाहेबले गरेको देखिन्छ । मान्छे जस्तो वातावरणमा हुर्केको हुन्छ त्यही वातावरणको रहनसहन एवम् व्यवहारले उसलाई प्रभाव पार्ने हुनाले वीरबहादुरलाई अङ्ग्रेजहरूले आत्नै मातृभाषाको नेपाली स्कुलमा भर्ना गरिदिए तापनि उसले बाल्यकालमा सुकिला, राम्रा एवम् इस्तिरी लगाएर राम्रोसँग पटाएर राखेका कपडाहरू लगाएको पाइन्छ । तर उसलाई अङ्ग्रेजहरूले अवकाश भइसकेपछि एक्लै छोडेर आफ्नो देशमा गएकाले ऊ एउटा वास्तविक भिखारीजस्तै देखिएको छ । त्यस अवस्थामा उसले पाल नकोरिकन तथा दाह्री नफालीकन पुरानो र मैलो कपडा लगाएर बसेको कुरा क्षेत्रीले उल्लेख गरेका छन् । उक्त अवस्थामा वीरबहादुर ठूलो दुःख र धर्मसङ्कटमा परेको हुनाले उसको मनोस्थितिमा विभिन्न खाले व्यवहार र परिस्थितिले प्रभाव पारेको देखिन्छ । यसरी वीरबहादुरको जीवनमा व्यवहार र परिस्थितिजन्य अवस्थाले प्रभाव पारेको कुरालाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

क्षेत्रीको *अतृप्त* उपन्यासको अर्को पात्र चन्द्रमानको हृदयमा अरूलाई सहयोग गर्नुपर्छ भन्ने भावना रहेको हुनाले उसको मनोरचनामा समाजप्रतिको दायित्व रहेको देखिन्छ । उसले मेघराजलाई भक्तपुरमा कोठा खोजीदिने र सामानसमेत लगीदिने काममा सहयोग गरेको छ । "चन्द्रमान आफै बेलुकीपख सरसामानसहित हामीलाई लिन एउटा थोत्रो जीप बन्दोबस्त गरी लिएर आउने भएका थिए" (पृ.९४) । यस भनाइका आधारमा पनि उसले आफ्नो साथीभाइहरूलाई के कस्तो सहयोग कुन रूपमा गर्नु पर्दछ भन्ने कुराको विचार गरी आफ्नो दायित्व पूरा गरेको देखिन्छ । उसले मेघराजसँग आफू राजभक्त भई शोषण नीतिको विरोध गर्ने आफ्नो विचार व्यक्त गरेकाले निरङ्कुश किसिमको राणाकालीन व्यवस्था र देशमा प्रजातन्त्रको नाममा देखिएको अस्तव्यस्त र मनपरी तन्त्रलाई हटाउने काम पनि राजाले गरेको कुरा उल्लेख गरेको छ । त्यस्तै उसले मेघराज र जुनेली भागेर आएका हुन् भन्ने कुरा शङ्का गरेको छ । यसले "दुवै जना एकैचोटि बसाइँ सरेर आउनु र यहाँ अडिन खोज्नु, यो त शङ्काको सूचक पनि हो" (पृ.९८) भन्ने कुरा व्यक्त गरेको छ । चन्द्रमानले विवाह आफ्नो इच्छाअनुसार हुनुपर्छ भन्ने तर्क राखेकाले उसले पनि कुनै व्यक्तिका बुबाआमाले आफ्ना छोराछोरीको इच्छा विपरित विवाह गरिदिन हुन्न भन्ने मान्यता राखेको पाइन्छ । यसरी चन्द्रमानको मनमा उत्पन्न भएका मनोविज्ञानसम्बन्धी पक्ष मानवीय व्यवहारजन्य क्रियाकलाप भएकाले उक्त कुरालाई क्षेत्रीको यस उपन्यासमा सामाजिक मनोविज्ञानको रूपमा प्रयोग गरिएको छ ।

निष्कर्ष

साहित्यको समाजशास्त्रीय सिद्धान्तको दृष्टिकोणबाट हेर्दा सामाजिक मनोविज्ञान भनेको साहित्यको समाजशास्त्रीय अध्ययनको सैद्धान्तिक मापदण्डअन्तर्गत मानवमस्तिष्कसम्बन्धी कुराको ज्ञान, विचार, भावना एवम् अनुभवलाई सामाजिक विषयको माध्यमबाट खोजी गरी अध्ययन गरिने माध्यमको रूपमा लिइन्छ । यस सिद्धान्तअन्तर्गत व्यक्त गरिएको सामाजिक मनोविज्ञानले सामाजिक विज्ञान, इतिहास, कला, साहित्य, धर्म र आचारविचारजस्ता कुरामा यसको कसरी सम्बन्ध गाँसिएको हुन्छ भन्ने कुराको खोजी गरी यसले समाजमा कस्तो प्रभाव पार्दछ भन्ने कुराहरूको बारेमा अध्ययन गर्दछ । कुनै समाजमा बस्ने मानिसका भूल, प्रयत्न तथा विगतका प्रिय र अप्रिय स्मृति के के हुन् र के कारणले गर्दा उनीहरूमा उक्त कुरा उत्पन्न हुन्छन् भन्ने विषयको खोजी गर्ने कार्य यसले गर्दछ भने त्यसको परिणामबाट के कस्ता क्रियाकलाप

व्यक्त हुन्छन् भन्ने कुराको प्रमाणको रूपमा यसको अध्ययन गरिन्छ । सामाजिक मनोविज्ञानले सामाजिक मूल्य, मान्यता, आचारविचार, नैतिकता, धर्म र कानूनजस्ता विविध विषयमा कसरी प्रभाव पार्दछ भन्ने कुराहरूको खोजी गरेर यसभित्र रहेका व्यक्तिहरूको मानसिक प्रक्रिया एवम् सम्पूर्ण मनोविज्ञानसम्बन्धी कुराहरूको बारेमा अध्ययन गरिन्छ । यसमार्फत् व्यक्तिका चेतन, अवचेतन र अर्धचेतन मनको बारेमा कसरी थाहा पाउने भन्ने कुराको खोजी गरी यसभित्र यिनीहरूले पार्ने प्रभाव एवम् त्यसबाट उत्पन्न हुने प्रक्रियाको बारेमा अध्ययन गरिन्छ । यसले एउटा सूक्ष्म समूहको मात्र खोजी नगरेर एउटा रणनीतिक समूहको खोजी गर्ने एवम् त्यसमा देखिएका विभिन्न किसिमका समस्याको खोजी गर्दै ती समस्यालाई कसरी समाधान गर्ने भन्ने कुराको बारेमा अध्ययन गर्दछ । यस क्रममा यसले कुनै समाजमा बस्ने व्यक्तिका सामाजिक, ऐतिहासिक, सांस्कृतिक एवम् राजनीतिकजस्ता पक्षहरूमा देखिएका समस्याको खोजी गरेर त्यसलाई कसरी समाधान गर्ने भन्ने कुराको समेत अध्ययन गर्दछ । यसरी कुनै कृतिभित्र यिनै माथि उल्लेख गरिएका सामाजिक मनोविज्ञानसम्बन्धी सम्पूर्ण कुराको खोजी गरेर यसको बारेमा अध्ययन गरियो भने साहित्यको समाजशास्त्रीय सिद्धान्तको आधारमा सामाजिक मनोविज्ञानसम्बन्धी सिद्धान्तको खोजी गरेर अध्ययन गरिएको कुरा पुष्टि भएको देखिन्छ । त्यसैले *अतृप्त* उपन्यासमा भने आसाम र सिलाङजस्ता भारतका विभिन्न भूभागमा बस्ने नेपाली एवम् नेपालीतर जातिमा उत्पन्न भएका बासनात्मक यौनजन्य क्रियाकलाप र व्यवहारका साथै अन्धो र क्षणीक प्रेमले निम्त्याएका दूषित र समाजबाट तिरस्कृत गरिएका नीच प्रवृत्तिलाई सामाजिक मनोविज्ञानको रूपमा व्यक्त गरिएको छ । यसरी क्षेत्रीका उपन्यासमा उल्लेख गरिएका सामाजिक मनोविज्ञानसम्बन्धी कुरालाई साहित्यको समाजशास्त्रीय अध्ययनका लागि आवश्यक पर्ने यिनै सिद्धान्तको आधारमा प्रयोग गरिएको छ ।

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त्रिभुवन विश्वविद्यालयको जग्गाहरूको संरक्षण सम्बन्धमा सम्मानित अदालतहरूबाट भएका आदेशहरू सहित संक्षिप्त जानकारी

*नारायणप्रसाद खनाल**

लेखसार

त्रिभुवन विश्वविद्यालय नेपाल सरकारबाट आर्थिक अनुदान प्राप्त संस्था भएकाले त्रिभुवन विश्वविद्यालय स्वायत र संगठित संस्था एवं छुट्टै छाप र लोगो प्रयोग गर्ने भएता पनि सरकारी परिभाषाभित्र पर्ने भनी सम्मानित सर्वोच्च अदालतबाट व्याख्या विवेचना भएको छ। विश्वविद्यालयको सम्पत्तिको Audit हुन्छ । यसको वार्षिक प्रतिवेदन प्रत्येक वर्ष सभामा पेश गर्ने विश्वविद्यालयको नियममा रहेको छ। विश्वविद्यालयको कुलपति देशकै कार्यकारी प्रमुख प्रधानमन्त्री हुनेहुँदा मुलुकको कार्यकारी प्रमुख कुलपति रहेकाले विश्वविद्यालयको भूमिका पनि अहम नै रहन्छ । विश्वविद्यालयको सम्पत्तिको संरक्षण गर्ने दायित्व प्रत्यक्ष रूपमा विश्वविद्यालयको रहेको अवस्थामा सम्पत्तिको संरक्षणको लागि सम्मानित अदालतबाट भएका आदेशहरूलाई सरकार र विश्वविद्यालयले गम्भीरतापूर्वक लिनुपर्ने हुन्छ । विश्वविद्यालय सार्वजनिक निकायको परिभाषाभित्र पर्ने भएकाले विश्वविद्यालयको सम्पत्तिको संरक्षण गर्नुपर्ने दायित्व र कर्तव्य संस्थाका पदाधिकारी शिक्षक तथा कर्मचारीमा रहने हुँदा त्यसतर्फ सबैको सकारात्मक सक्रियता बढोस् भन्ने यस लेखको सार रहेको छ ।

जग्गा अधिग्रहणको पृष्ठभूमि

त्रिभुवन विश्वविद्यालय ऐन, २०४९ दफा ४ मा विश्वविद्यालय अविछिन्न उत्तराधिकारवाला एक स्वशासित र संगठित संस्था, विश्वविद्यालयले व्यक्ति सरह चलअचल सम्पत्ति प्राप्त गर्न, उपभोग गर्न, बेचबिखन गर्न वा अन्य किसिमले व्यवस्था गर्न सक्नेछ भन्ने रहेको छ । त्रिभुवन विश्वविद्यालय स्थापना गर्ने क्रममा २०१३ साल मार्ग १८ गते तत्कालिन श्री ५ को सरकारद्वारा वागमती नदीदेखि पश्चिम, कीर्तिपुरबाट कालिमाटी पुग्ने बाटोदेखि पूर्व, पाँगा जाने नयाँ बाटो भाजङ्गल र कीर्तिपुरदेखि उत्तर बल्खु खोलादेखि दक्षिण यति चार किल्ला भित्रको जग्गा त्रिभुवन विश्वविद्यालयको लागि अधिग्रहण गरेपश्चात् त्रिभुवन विश्वविद्यालयले चारैकिल्ला भित्रको जग्गा आफै प्रयोग गर्दै आएकोमा ती जग्गाको २०४० सालमा दर्ता एवं नापनक्सा गरिएको थियो । त्यसै गरी दोस्रो चरणमा २०३३ सालमा र २०३५ सालमा स्मृति भवनदेखि उत्तर, रिङ्गरोडदेखि दक्षिण हालको परीक्षा नियन्त्रण कार्यालय रहेको परिसर, गाङ्खेल क्षेत्रभित्रका जग्गाहरू कित्ता नम्बरअनुसार अधिग्रहण गरिएका जग्गा हुन् । त्रिभुवन विश्वविद्यालय परिसरभित्रका जग्गाहरूमा अमेरिकन सरकारले तत्कालिन समयमा college of education कीर्तिपुरमा अध्ययनरत विद्यार्थीहरूले अभ्यास शिक्षण गर्ने प्रयोजनको लागि बनाइदिएको ल्यावरोटोरी स्कुललाई विगत २०/२५ वर्षदेखि निजी स्कुलको रूपमा विभिन्न समुहको नामबाट सञ्चालन भइरहेको, कृषि वागवानी केन्द्रले विश्वविद्यालयको

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नामको जग्गा प्रयोग गरिरहेको, शसस्त्र प्रहरीवल, आँखा केन्द्र, खानेपानी संस्थान, राधास्वामी सत्संग केन्द्र, वि.पि.कोइराला प्लानेटेरियमको नामबाट सयौं रोपनी जग्गा प्रयोग भइरहेको मात्र होइन, त्रिभुवन विश्वविद्यालयसँग कुनै लिखित सहमति समेत नलिई कीर्तिपुर नगरपालिकाले सयौं रोपनी जग्गामा फोहरमैला थुपार्ने केन्द्रको रूपमा र कीर्तिपुर क्लवले दशौं रोपनी जग्गामा वास्केटबल कोटको रूपमा प्रयोग गर्दै आइरहेको कुरा सबैको आँखा अगाडि रहेको विषय हो ।

जग्गा संरक्षणको लागि चालेको अदालतीय प्रक्रिया

विगतमा कीर्तिपुर नगरपालिकाले त्रिभुवन विश्वविद्यालय केन्द्रीय कार्यालयको मूलगेटदेखि पूर्वमा नेपाल प्राध्यापक संघले त्रिभुवन विश्वविद्यालयको नाममा भवन बनाई प्रयोग गरिरहेको भवनदेखि पूर्वदक्षिण रहेको पूर्व वागमती नदी, पश्चिम राधास्वामी सत्संग ब्यास कम्पाउण्ड, उत्तर बल्खुखोला कल्भर्ट, दक्षिण सुन्दरीघाट झोलुङ्गे पुल र कीर्तिपुर जाने बाटो यति चार किल्ला भित्रको करिव ७२ रोपनी जग्गा त्रिभुवन विश्वविद्यालयको जग्गामा कीर्तिपुर नगरपालिकाले हलोत्से बहुउद्देश्यीय प्रा.लि.लाई ट्रक पार्किङ्गको लागि दिने गरी मिति २०५६/११/३० मा सम्झौता गरेकोमा उक्त जग्गा त्रिभुवन विश्वविद्यालयको रहेकोले कीर्तिपुर नगरपालिकाको विरूद्धमा तत्कालीन पुनरावेदन अदालत पाटनमा विश्वविद्यालयको तर्फबाट रिट निवेदन दायर गरिएको थियो । तत्कालीन पुनरावेदन अदालत पाटनले सो जग्गा विश्वविद्यालयको हकभोगको जग्गा भनी फैसला आदेश गरेकोमा सो आदेशको विरूद्धमा कीर्तिपुर नगरपालिकाले सर्वोच्च अदालतमा पुनरावेदन परेकोमा कीर्तिपुर नगरपालिकाको तर्फबाट दायर गरेको पुनरावेदन खारेज भई उक्त फैसला अन्तिम भई बसेको हुँदा त्रिविले न्यायिक प्रकृयाबाट समेत वागमती नदीदेखि पश्चिम पट्टीको जग्गामा हक स्थापित गर्न सफल भएको छ । त्यसैगरी वागमती नदीदेखि पश्चिम पट्टीको १७ रोपनी जग्गा त्रि.वि.ले २०४० सालमा दर्ता गरेको हुँदा उक्त जग्गाको दर्ता बदर गरी हक कायम गरी पाऊँ भनी कीर्तिपुर न.पा.वडा नं.१३ बस्ने देवी कटुवाल र नरेश कटुवालले २०६२ सालको दे.पु.नं.८५१२ को मुद्दा दायर गरेकोमा जिल्ला अदालत, तत्कालीन पुनरावेदन अदालत हुँदै सर्वोच्च अदालतमा मुद्दा परेकोमा त्रिभुवन विश्वविद्यालयको नाममा दर्ता भएको देखिँदा वादीको हकपुग्ने साविक दर्ताभित्रको नदेखिएकाले वादीदावी पुग्न नसक्ने ठहऱ्याई गरेको शुरू काठमाडौं जिल्ला अदालतको फैसला सदर गरेको पुनरावेदन अदालत पाटनको फैसला मिलेकै देखिँदा सदर हुने ठहर्छ भनी सम्मानित सर्वोच्च अदालतबाट २०६५ साल वैशाख ३ मा फैसला आदेश भएबाट हालको वागमती नदीदेखि पश्चिम पट्टीको बगर जग्गा (पेट्रोल पम्पदेखि पूर्वपट्टिदेखि दक्षिण सुन्दरीघाट सम्मको) मा त्रिभुवन विश्वविद्यालयको हक स्थापित भई न्यायिक प्रक्रियाबाट पनि वागमती नदीदेखि पश्चिम पट्टीको जग्गामा विश्वविद्यालयको सम्पत्तिसम्बन्धी हक स्थापित भइसकेको छ ।

नयाँ नैकापका जग्गाका बारेमा विश्वविद्यालयले चालेका कदम र सम्मानित अदालतबाट स्थापित नजिर

भूमिसुधार ऐन, २०२१ लागु भएपछि काठमाडौं जिल्ला साविक नयाँनैकाप गा.वि.स.का विभिन्न वडा नं.मा रहेका विभिन्न कित्ता नम्बरका जग्गाहरू वडाकाजी पुष्पराज, केशवराज भण्डारी, कृष्णप्यारी, मधुसुदनराज, निरराज, भरतराज समेतका व्यक्तिहरूले हदवन्दीका कारणले १२५ रोपनी जग्गा शिक्षाको काममा अपर्ण गर्ने उद्देश्यले नेपाल सरकार समक्ष निवेदन दिएअनुसार ती जग्गाहरू नेपाल सरकार मन्त्रिपरिषदको मिति २०२३/११/१५ को निर्णयमा जग्गाको लगतमा निवेदकहरूको नामबाट कट्टा गरी राजगुठीमा लगत सारी तत्कालीन श्री ५ को सरकारमा आउने पोत त्रिभुवन विश्वविद्यालयबाट लिने भन्ने उल्लेख भएकाले ती १२५

रोपनी जग्गा त्रिभुवन विश्वविद्यालयले मिति २०६१/९/१२ र २०६९/५/२४ समेतमा त्रिभुवन विश्वविद्यालयको नामबाट मालपोत कार्यालयमा रोक्काको लागि लेखी पठाएअनुसार मालपोत कार्यालयले रोक्का राखेकोमा कान्छा महर्जन समेत ३४ जनाले उच्च अदालत पाटनमा ०७१-wo-०५३३ रिट दायर गर्नु भएकोमा तत्कालीन पुनरावेदन अदालतका माननीय न्यायाधीश श्री तिलप्रसाद श्रेष्ठ (हाल सर्वोच्च अदालतमा माननीय न्यायाधीश) र विदुर विक्रम थापाबाट २०७२ भाद्र १६ मा रिट खारेज गर्ने आदेश भएको थियो । शिक्षाको नाममा त्रिभुवन विश्वविद्यालयलाई अर्पण गरेका जग्गा रोक्का राख्न त्रि.वि.ले लेखी पठाएको विरूद्धमा तुल्सीराम पौडेल र कुन्दन गिरीले श्री सर्वोच्च अदालतमा ०७१-wo-०६११ को रिट निवेदन दायर गर्नु भएकोमा "निवेदकका दाता भरतराज राजभण्डारीको हक टुटी सकेको कुरा २०२३/११/१५ को मन्त्रिपरिषदको निर्णयबाट देखिएको, जग्गा राजगुठी कायम भै त्यसको हितग्राही (Beneficiary) त्रिभुवन विश्वविद्यालय हो भन्ने देखियो । वडाकाजी पुष्पराज सहितका व्यक्तिहरूले चढाएको विन्तिपत्र र भएको प्रमाङ्गीको विश्लेषण गर्दा विवादित जग्गा सहितका विन्तिपत्रमा उल्लेखित साविक ल.नं.१८, १९, २० का जग्गाहरूको हकमा उक्त जग्गाहरू राजगुठीमा दर्ता गर्ने भनिए पनि यी जग्गाहरू गुठी संस्थान ऐन अन्तर्गतको परम्परागत राजगुठी नभई हितग्राहीको लागि अर्पण गरिएको र त्यसको अभिलेखको व्यवस्थापन गर्ने तथा तिरो समेत बुझ्ने अड्डाको रूपमा कार्य गर्नसम्म गुठी संस्थानलाई निर्देशित गरिएको रहेछ भन्ने देखिन्छ । यस अर्थमा यो गुठी २०७५ साल भदौ १ गतेबाट कार्यान्वयनमा आउन लागेको देवानी संहितासम्बन्धी विधेयकको दफा ३१४ मा वर्णित प्रकृतिको गुठी रहेछ भन्ने स्पष्ट हुन आउँछ । यस्तो प्रकृतिको गुठीमा प्रमाङ्गीको व्यहोराबाट दाताको हक टुटी सकेको अवस्था भएबाट समेत हितग्राहीको अगुवाइमा गुठी संस्थानमा वा कानुन बमोजिम स्थापित हुने निकायमा निवेदन दिई जग्गा गुठीको रूपमा राख्न पाउने नै हुँदा विश्वविद्यालयले सो निम्ति उपयुक्त कानुनी मार्ग अनुसरण गर्न पाउने नै हुन्छ । विश्वविद्यालयलाई दाताहरूले पवित्र उद्देश्य राखी अर्पण गरेको करिव १२५ रोपनी जग्गा हिनामिनाको जोखिममा परेको देखियो । गुठी संस्थानले राजगुठीको अभिलेख दुरूस्त नराख्ने, नापी र मालपोत कार्यालयले विश्वविद्यालयको सम्पत्ति दुरूस्त श्रेस्ता नराख्ने, मालपोत विभागले रोक्का राखेको सम्पत्ति उक्त विभागको स्पष्ट सहमति वेगर गा.वि.स.को पत्रको आधारमा फुकुवा गर्ने, दाता र उनका सन्तानहरू लोभलालचमा परी जग्गा दर्ता र हक हस्तान्तरणमा उद्धत रहने र विश्वविद्यालयका विभिन्न समयमा फेरिने पदाधिकारीहरूले दाताले अर्पण गरेको सम्पत्ति जुन तदारूखताका साथ संरक्षण र व्यवस्थापन गर्नुपर्ने थियो सो नगरेको कारणबाट एउटा विडम्बनापूर्ण स्थिति उत्पन्न हुन गएको पाइयो । यसरी जिम्मेवारी बहन नगरी सुत्ने, आफ्नो जिम्मेवारी भुल्ने वा अख्तियारको दुरूपयोग गर्ने छुट कसैलाई छैन । विश्वविद्यालयको सम्पत्ति उपर जे जुन कोणबाट वा स्वार्थबाट धावा बोल्ने कार्य भए पनि त्यस्तो आक्रमणलाई विधिको शासन एवम् न्यायको जिम्मेवारी बोकेको यस अदालतले स्वीकार गर्न सक्ने अवस्था भएन । विवादस्पद एवं कपटपूर्ण हक हस्तान्तरणको आधारमा परेको रोक्का फुकुवासम्बन्धी माग स्वीकार गर्नुपर्छ भन्ने हुँदैन । सरकारको परिभाषाभित्र सरकारबाट बजेट प्राप्त गर्ने निकाय समेत पर्दछ । यस्तो निकायमा त्रिभुवन विश्वविद्यालय पर्ने भएबाट त्रिभुवन विश्वविद्यालयको पत्रबमोजिम रोक्का रहेको विषयलाई फुकुवा गर्न उचित र आवश्यक नदेखिने भनी सर्वोच्च अदालतका माननीय न्यायाधीश श्री दीपककुमार कार्की र डा.आनन्दमोहन भट्टराईज्यूबाट २०७४ साल भाद्र ७ मा फैसला आदेश भई सार्वजनिक निकाय वा संस्थाको सम्पत्तिको महत्व, त्यसको संरक्षण गर्ने दायित्वको विषयमा विस्तृत रूपमा व्याख्या र विवेचना भई त्रिभुवन विश्वविद्यालय सरकारी निकायको परिभाषाभित्र पर्ने भन्ने समेत उल्लेख भएबाट विश्वविद्यालयको गरिमा बढाउने कार्यमा सम्मानित अदालतको आदेश सबैका लागि मार्गदर्शक रूपमा रहेको देखिन्छ ।

सम्पत्तिको संरक्षणको न्यायिक सक्रियता

नेपालको संविधान, २०७२ को धारा २५ एवं त्रिभुवन विश्वविद्यालय ऐन, २०४९ को दफा ४ द्वारा प्रदत्त विश्वविद्यालयको सम्पत्तिसम्बन्धी संवैधानिक तथा कानुनी हक रहेकोमा त्रिभुवन विश्वविद्यालयको आंगिक क्याम्पसको रूपमा रहेको चितवन जिल्लास्थित कृषि तथा पशु विज्ञान अध्ययन संस्थान, रामपुर क्याम्पस र मकवानपुर जिल्लामा सञ्चालित हेटौंडा वन क्याम्पस हेटौंडाको जग्गाको परिसरमा कृषि तथा वनविज्ञान विश्वविद्यालय ऐन, २०६७ संविधान सभाले बनाई विश्वविद्यालय स्थापना गरेको कारणले त्रिभुवन विश्वविद्यालयले सम्पत्ति हस्तान्तरण नगरेको भन्ने सम्पत्तिको विषयमा विवाद उठाई त्रिभुवन विश्वविद्यालयले ती ठाउँमा सञ्चालन गरेका शैक्षिक कार्यक्रम बन्द गर्न तत्कालीन शिक्षामन्त्री एवं कृषि तथा वनविज्ञान विश्वविद्यालयले दवाव दिएको अवस्थामा विश्वविद्यालयले आफ्ना शैक्षिक कार्यक्रमलाई निरन्तरता दिएको विषयलाई लिई कृषि तथा वनविज्ञान विश्वविद्यालयले त्रिभुवन विश्वविद्यालय कीर्तिपुरको विरूद्ध सम्मानित सर्वोच्च अदालतमा ०७३-wo-०३६४ को रिट निवेदन दायर गरेकोमा "त्रिभुवन विश्वविद्यालय ऐन, २०४९ को दफा ४ र कृषि तथा वनविज्ञान विश्वविद्यालय ऐन, २०६७ को दफा ३ को विस्तृत रूपमा व्याख्या गर्दै "नेपाल सरकारबाट अनुदान प्राप्त गरेको वा गर्ने कारण मात्रले विश्वविद्यालयहरूको "व्यक्ति" को रूपमा स्थापित हैसियत प्रभावित नहुने भएकाले यसका सम्पत्तिहरूको स्वामित्व, भोग वा हस्तान्तरण आदि अन्य प्रचलित कानुन बमोजिम हुने सम्बन्धमा विवाद गर्नुपर्ने कारण देखिँदैन । त्रिभुवन विश्वविद्यालय ऐन, २०४९ द्वारा प्रदत्त सम्पत्तिसम्बन्धी हक, शैक्षिक कार्यक्रम सञ्चालन गर्ने विश्वविद्यालयको हक स्वतः समाप्त भई वनविज्ञान अध्ययन संस्थान हेटौंडा क्याम्पसको जग्गा स्वतः हस्तान्तरण भएको भनी अनुमान समेत गर्न नमिल्ने रहेकोछ । सम्पत्तिको स्वामित्व हस्तान्तरणको कुनै पनि वैधानिक प्रकृया शुरू नै नगरी उक्त सम्पत्तिहरू स्वतः आफ्नो नाममा आएको भन्ने आफूखुशी व्याख्या गरी अतिक्रमणको शैलीमा जवरजस्ती कब्जा गरेको जस्तो देखिने र शिक्षक, कर्मचारी एवं विद्यार्थीहरू बिच पनि तनाव सृजना हुने गरी त्रिभुवन विश्वविद्यालयको नाममा रहेको भौतिक संरचनामै कृषि तथा वनविज्ञान विश्वविद्यालयको नाममा पठनपाठन शुरू गर्ने कार्यलाई कृषि तथा वनविज्ञान विश्वविद्यालय जस्तो प्राज्ञिक संस्थाले गरेको अपरिपक्क कार्य भनी मान्नु पर्ने देखियो । विवाद समाधानका लागि निम्न बमोजिम गर्नको लागि नेपाल सरकारका नाममा निर्देशनात्मक आदेश जारी गरिएको छ :

क) नेपाल सरकारको मिति २०७४/१/७ को निर्णय बमोजिम त्रिभुवन विश्वविद्यालयलाई चितवन जिल्ला शक्तिखोर, जुटपानी र चैनपुरमा जग्गा र भौतिक संरचना निर्माण गर्न लाग्ने रू.१५०,०००,०००।– (पन्ध्र करोड) प्रस्तुत आदेश प्राप्त भएका मितिले १२० दिनभित्र सम्पूर्ण कानुनी प्रकृया पूरा गरी त्रिभुवन विश्वविद्यालयलाई उपलब्ध गराउनू ।

ख) नेपाल सरकारबाट माथि उल्लिखित जग्गाको स्वामित्व र रकम प्राप्त भएका मितिले ६० दिनभित्र त्रिभुवन विश्वविद्यालयले रामपुर कृषि क्याम्पस चितवनको २७४-१५-१ विगाह र हेटौंडा वन क्याम्पसको ६० विगाह जग्गा कृषि तथा वन विश्वविद्यालयलाई हक हस्तान्तरण गरिदिनू ।

ग) उपरोक्त कार्यका लागि नेपाल सरकार शिक्षा मन्त्रालयले निरन्तर रूपमा दुवै विश्वविद्यालय तथा अन्य निकायहरूसँग समन्वय गरिदिनू ।

घ) यस फैसलाको जानकारी विपक्षीहरूलाई तथा फैसला कार्यान्वयन निर्देशनालयलाई दिई प्रस्तुत निवेदनको दायरीको लगत कट्टा गरी मिसिल नियमानुसार अभिलेख शाखामा बुझाइदिनू" भनी

सम्मानित सर्वोच्च अदालतका माननीय न्यायाधीशज्यूहरू श्री अनिकुमार सिन्हा र डा.मनोजकुमार शर्माबाट मिति २०७९ मंसिर १८ मा आदेश भएको थियो ।

निष्कर्ष

सम्मानित अदालतबाट समेत त्रिभुवन विश्वविद्यालयको सम्पत्तिको संरक्षणको लागि देखाएको चासो र सम्वेदनशिलतालाई विश्वविद्यालयले गम्भीर रूपमा लिनु पर्दछ । कानुन बनाएर मात्र अरूको जग्गा अतिक्रमण गर्न नपाइने भन्दै त्रिभुवन विश्वविद्यालय ऐन, कृषि तथा वनविज्ञान विश्वविद्यालय ऐनको अदालतबाट विस्तृत व्याख्या मात्र भएको छैन, संसदले ऐन बनाउँदा व्यक्ति वा संस्थाको संवैधानिक तथा कानुनी हकमा असर पर्ने गरी कानुन बनाउनु हुँदैन भन्ने समेत फैसलाको मर्म र उद्देश्य रहेको देखिन्छ । आशा छ त्रिभुवन विश्वविद्यालयको जग्गाजमिनको संरक्षण र विश्वविद्यालयको अतिक्रमित भएका जग्गाहरूको सम्बन्धमा आवश्यक अनुसन्धान गर्ने, अनियमित्ता र अतिक्रमित कार्यमा संलग्नलाई कारवाहीको सिफारिस सहितको प्रतिवेदन नेपाल सरकार समक्ष पेश गर्न सरकारी सेवामा रहँदा निश्कलङ्कको रूपमा रहनु भएका कुशल प्रशासक, ललिता निवासको जग्गा प्रकरणमा सत्यतथ्य प्रतिवेदन दिनु भएका शारदाप्रसाद त्रितालज्यूको संयोजकत्वमा नेपाल सरकारद्वारा गठित समितिले त्रिभुवन विश्वविद्यालयका जग्गाहरूको सिमानामा रहेका जग्गा धनी एवं घर धनीहरूको समेत दर्ता श्रेस्तामा कायम रहेका क्षेत्रफल वा वर्गफिट समेत यकिन गर्दै जग्गा जमिनको सूक्ष्म अध्ययन गरी दोषिकरार गर्नुभन्दा अगाडि सम्बन्धित पक्षसँग लिखित बयान लिई यथार्थता बाहिर ल्याउने एवं सम्मानित अदालतहरूबाट भएका फैसलामा औल्याइएका विषयमा समेत प्रवेश गरी अदालतका फैसला कार्यान्वयन हुने छन् र अतिक्रमित जग्गा फिर्ता भई दोषी उपर कारवाहीको अतिरिक्त कुन प्रयोजनको लागि जग्गा अधिग्रहण गरिएका थिए । २०१३ साल र २०३३ सालको राजपत्रमा लेखिएका कुराहरूको अध्ययन गरी ती साविकका जग्गाधनीहरूको उद्देश्य पूर्ति भई तिनीहरूको आत्माले खुशी महसुस गर्नेछ । जसमा विश्वविद्यालयको हित र शिक्षाको पवित्र मन्दिरको सधै पवित्रता कायम रहनेछ ।

सन्दर्भ सामाग्रीसूची

२०१३ साल मार्ग १८ को राजपत्र, नेपाल सरकार ।

२०३३ सालको राजपत्र, नेपाल सरकार ।

त्रिभुवन विश्वविद्यालय ऐन, २०४९, त्रिभुवन विश्वविद्यालय ।

कृषि तथा वनविज्ञान विश्वविद्यालय ऐन, २०६७ ।

रिट निवेदक, तुल्सीराम पौडेल समेत, विरूद्ध त्रिभुवन विश्वविद्यालय केन्द्रीय कार्यालय कीर्तिपुर समेत मुद्दा उत्प्रेषण समेत (०७१-wo-०६११) ।

रिट निवेदक, कान्छा महर्जन समेत, विरूद्ध त्रिभुवन विश्वविद्यालय कीर्तिपुर समेत मुद्दा उत्प्रेषण समेत (०७१-wo-०५३३) ।

पुनरावेदक वादी, देवी कटुवाल समेत, विरूद्ध त्रिभुवन विश्वविद्यालय कीर्तिपुर समेत (०६२ सालको दे.पु.नं.८५१२) ।

रिट निवेदक, कृषि तथा वन विज्ञान विश्वविद्यालय रामपुर चितवन विरूद्ध, त्रिभुवन विश्वविद्यालय कीर्तिपुर समेत (०७३-wo-०३६४) ।

आर्थिक अनुशासन र सुधारका पक्षमा त्रिभुवन विश्वविद्यालय

*पुष्पराज पौड्याल**

लेखसार

नेपाल सरकारको एकमुष्ठ अनुदान तथा आन्तरिक स्रोतको व्यवस्था गरी विश्वविद्यालयको लक्ष्य प्राप्तिमा आर्थिक कारोवारहरू दक्षता एवम् प्रभावकारिता साथ सम्पादन गर्ने, उपलब्ध स्रोत र साधनको अधिकतम उपयोग तथा परिचालन गर्दै आर्थिक अनुशासनको माध्यमबाट सुशासनको प्रत्याभूति दिने कार्यलाई निरन्तरता दिई आर्थिक संयन्त्रहरूको विकास गरी आर्थिक अनुशासन कायम गर्न त्रिभुवन विश्वविद्यालय निरन्तर अगाडि बढेको छ । त्रिभुवन विश्वविद्यालय एक उच्च शैक्षिक संस्था भएकाले यसले सार्वजनिक प्रशासनका आयामभन्दा बाहिर रहेर सेवा प्रवाह गर्न सक्दैन । यसले लिएको लक्ष्य प्राप्त गर्नको लागि आर्थिक व्यवस्थापन अपरिहार्य छ । आर्थिक व्यवस्थापनलाई सक्षम बनाई गतिशील रूपमा दक्षतापूर्वक सुशासन प्रवाह आर्थिक अनुशासन कायम गर्नुपर्दछ । आर्थिक अनुशासन रहे वा नरहेको सम्बन्धमा, लेखा परीक्षण गर्न, निरीक्षण तथा अनुगमन गर्न त्रिविका आन्तरिक नियमनकारी निकायहरू आन्तरिक लेखा परीक्षण महाशाखा तथा अनुगमन कार्यालय रहेका छन् भने संवैधानिक निकायको रूपमा स्थापित महालेखा परीक्षण कार्यालय, विश्वविद्यालय अनुदान आयोग तथा उजुरी परेमा अख्तियार दुरूपयोग अनुसन्धान आयोगका कार्यालय तथा अदालत रहेका छन् । आर्थिक प्रशासनसँग सम्बन्धित नीति, कार्यक्रम तथा बजेट तर्जुमादेखि लिएर अख्तियारवालालाई वित्तीय उत्तरदायित्व तथा जवाफदेही बनाउने र आन्तरिक नियन्त्रण प्रणालीलाई सवलीकरण बनाई निर्दिष्ट नियम तथा कानुनको परिधिभित्र रही आर्थिक क्रियाकलाप गरेमा र आर्थिक कारोवारसँग सम्बन्धित फाँटवालालाई पनि आर्थिक अनुशासनको दायरा भित्र ल्याउन संगठनात्मक संरचनामा पनि आधुनिक र उच्चतम प्रविधिसँग जोडेर विद्युतीय वित्तीय प्रशासनको नीति अवलम्वन गर्न नसक्दा अपेच्छित परिणाम हासिल गर्न असम्भव भएको छ । यस अध्ययनको मुख्य उद्देश्य त्रिभुवन विश्वविद्यालयमा आर्थिक अनुशासनको अवस्थाको बारेमा भइरहेको प्रयासहरूको बारे यसमा सुधारका पक्षहरूमा भएका प्रयासहरूको वारेमा सार रूपमा विश्लेषण गर्नु हो । गुणात्मक विधिको प्रयोग गरी द्वितीयक स्रोतहरूबाट सङ्कलित तथ्याङ्कको आधारमा यो अध्ययन गरिएको छ । विश्वविद्यालयको आर्थिक कार्यप्रणालीलाई पूर्णरूपमा प्रविधिमैत्री बनाई विद्युतीय वित्तीय प्रशासनको माध्यमबाट निर्दिष्ट नियमकानुनको पालना तथा पारदर्शी कार्यविधिको प्रयोगद्वारा उपलब्ध स्रोत तथा साधनको अधिकतम् परिचालन गर्ने र आन्तरिक नियन्त्रण प्रणालीको व्यवस्था तथा त्यसको सबल र दक्षतापूर्वक कार्यान्वियनबाट आर्थिक अनुशासन कायम गर्न सकिन्छ भन्ने यस अध्ययनको सार हो ।

शब्दकुञ्जी: पारदर्शिता, अनुगमन, वित्तीय सबलीकरण, वित्तीय उत्तरदायित्व, जवाफदेहिता ।

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विषयप्रवेश

नेपालको उच्चशिक्षाको मानचित्रमा त्रिभुवन विश्वविद्यालय नेपालको ७६ जिल्लामा आफ्नो अस्तित्व स्थापित अर्थात् सातवटै प्रदेसमा फैलिएको, आफ्नै स्वामित्व तथा प्रयोग भएका भौतिक संरचना सञ्चालित शैक्षिक कार्यक्रम, प्रशासनिक तथा सेवाप्रवाह तथा आर्थिक पक्षका दृष्टिकोणले होस् वा प्रयोग भएको शैक्षिक तथा प्रशासनिक जनशक्ति (रोजगारी) र उत्पादन हुने प्राविधिक, व्यावसायिक तथा प्रशासनिक जनशक्तिको दृष्टिकोणले सवैभन्दा ठुलो विश्वविद्यालय हो । यस विश्वविद्यालयले प्रदान गर्ने सेवालाई प्रभावकारी र राष्ट्रिय आकांक्षा पूरा गर्नको लागि व्यवस्था गरिने स्रोत र साधन मध्ये आर्थिक साधनको व्यवस्थापन गर्नु निकै चुनौतीपूर्ण कार्य हो । हरेक सार्वजनिक संगठनमा हुने आर्थिक कारोवारलाई ठिक, व्यवस्थित र प्रभावकारी रूपमा गर्नु नै आर्थिक प्रशासन हो । त्यसैले सार्वजनिक प्रशासन भित्रकै एउटा महत्त्वपूर्ण आयाम तथा अंग नै आर्थिक प्रशासन हो । आर्थिक प्रशासनलाई प्रभावकारी बनाउन आर्थिक अनुशासनको आवश्यकता पर्दछ । ठिक ढंगले आर्थिक कारोवार गर्नु नै आर्थिक अनुशासन हो । संस्थाको नियम, तथा कार्यविधि, परिपत्र तथा सहभागितामूलक निर्णयहरू साथ-साथै राज्यको संविधान, कानुनले तोकेको अधीनभित्र पर्ने गरी आर्थिक कारोवार गर्नु र आर्थिक हिसाब किताब गर्नु नै आर्थिक अनुशासन हो । आर्थिक उपनियन्त्रक रूपा श्रेष्ठ, (२०८०) "वित्त अनुशासन कायम गर्ने उद्देश्य प्राप्तिका लागि भौतिक तथा गैरभौतिक आर्थिक स्रोतको अधिकतम परिचालनसँगै आर्थिक योजनाको नीति निर्देशन तय, साङ्गठनिक संरचनाको निर्माण, जनशक्ति व्यवस्थापन, आर्थक कार्यक्रमको प्रभावकारी कार्यान्वयन प्रत्याभूतिको लागि गरिने आर्थिक नियन्त्रण संयन्त्रको व्यवस्थापन गर्नुलाई नै आर्थिक प्रशासन भनिन्छ। मुख्यतया आर्थिक प्रशासनले आर्थिक सुशासन र अनुशासन कायम गर्दै लक्ष्य हासिल गर्न नियमित रूपमा प्रणालीगत तवरले कार्यशील रहने हुनाले सम्पूर्ण सुशासनको आधार नै आर्थिक सुशासन हो ।" यस भनाइले आर्थिक प्रशासनमा सुशासनको आधार नै आर्थिक अनुशासन हो भने बुझिन्छ। आर्थिक अराजकता भएमा संस्थाको मात्र नभएर राज्यकोषको नै दुरूपयोग हुन्छ। आर्थिक अराजकता रोक्न आन्तरिक लेखा परीक्षण र महालेखा परिक्षणले निर्दिष्ट कार्यविधिका आधारमा भूमिका खेल्दछन्। अख्तियार दुरूपयोग अनुसन्धान आयोग, राष्ट्रिय सर्तकता केन्द्र, अदालत आदि पनि आर्थिक अनुशासन कायम गर्न सघाउने संस्था हुन् । दैनिक रूपमा प्रशासन तथा कार्यालय व्यवस्थापन गर्नको लागि आर्थिक पक्ष अत्यन्तै महत्त्वपूर्ण हुन्छ । आर्थिक पक्ष प्रशासनको मेरूदण्डको रूपमा रहेको हुन्छ। दैनिक प्रशासनिक कार्य सञ्चालन, शैक्षिक गतिविधिहरूको व्यवस्थापन, शिक्षक कर्मचारीको तलव भत्ता, वृत्ति विकाससम्बन्धी तालिम, अभिमुखीकरण कार्यक्रम सञ्चालन, मर्मत तथा सम्भार कार्यक्रम लगायत अवकाशपछि दिइने सेवा सुविधाका लागि आर्थिक पक्षको अत्यन्त आवश्यकता पर्दछ ।

आर्थिक प्रशासन र अनुशासन

सार्वजनिक संगठनमा आर्थिक प्रशासनलाई जनउत्तरदायी तथा जनमुखी तुल्याउनको लागि आर्थिक अनुशासन सबै भन्दा महत्त्वपूर्ण पक्ष हो । अनुशासन कायम गर्दा आर्थिक स्रोतको व्यवस्थापन तथा कोषको बाँडफाँड र परिचालन गर्न, साधनको समुचित प्रयोग गर्न, आर्थिक मितव्ययिता कायम गर्न, पारदर्शिता कायम गर्न, सुशासनको अनुभूति दिलाउन, सार्वजनिक उत्तरदायित्व वहन गर्न, आर्थिक सुदृढकरण गरी संस्थाको दिगो विकास तथा संस्थागत समृद्धि हासिल गर्न अत्यन्तै सहज हुन्छ । त्रिभुवन विश्वविद्यालयको लक्ष्य प्राप्तिको लागि चलअचल सम्पत्ति तथा व्यवस्था गरिएका कोषहरूको समुचित परिचालन गर्नुका साथै लागतलाभ

हुने गरी व्यवस्थापन हुनु आजको अपरिहार्य आवश्यकता हो । आर्थिक प्रशासन सार्वजनिक प्रशासनको अंग हो । सार्वजनिक प्रशासनलाई स्वच्छ र पारदर्शी बनाई आर्थिक अनुशासन कायम गर्न सार्वजनिक खर्चको दुरूपयोगमा निरूत्साह, मितव्ययिता, प्रभावकारी र दक्षतापूर्वक परिचालन गर्न विश्वविद्यालयका सम्पूर्ण प्रशासनिक संयन्त्रहरूको व्यवस्था गरिएको हुन्छ ।

प्रशासनिक संयन्त्रलाई गति प्रदान गर्न तथा चलायमान गर्न त्रिवि ऐन, आर्थिक व्यवस्थापन तथा खरिद सम्वन्धि नियमलगायत त्रिविका प्रचलित नियम, सार्वजनिक खरिद ऐन तथा नियमावली, समय समयमा परिपत्र गरिएका निर्देशिका तथा कार्यविधिहरूको पालना गरेर मात्र आर्थिक अनुशासन कायम गर्न सकिन्छ । आर्थिक अनुशासन आर्थिक वृद्धिको रक्त आधार भएकाले संगठनमा अनुशासन कायम गरी आर्थिक स्रोत साधनहरूको दक्षतापूर्वक विनियोजन सम्बन्धी निर्णय र तर्जुमा प्रक्रिया, योजना तर्जुमा तथा समय व्यवस्थापन, नगद कोषको परिचालन योजना तथा उपयोग र कार्य वातावरणलाई सवलीकरण, सुदृढीकरण गरी तथा उपकरणयुक्त तुल्याई स्वच्छ र प्रतिस्पर्धात्मक आर्थिक नीति, उपलब्धिमा आधारित वितरण नीति आदिको तर्जुमा गर्दै उपलब्ध स्रोत र साधनको परिचालन गर्न त्रिभुवन विश्वविद्यालयमा वैज्ञानिक तथा आधुनिक प्रविधियुक्त आर्थिक प्रशासन हुन आवश्यक देखिन्छ । त्रिभुवन विश्वविद्यालयलाई अध्ययन, अध्यापन तथा अनुसन्धान तथा वृत्तिविकास गर्ने उच्च प्राज्ञिक केन्द्रको रूपमा अगाडि बढाउनुका साथै स्वदेशी तथा विदेशी विद्यार्थीको आकर्षण बढाउन यसमा हुने आर्थिक कारोवारहरूलाई पारदर्शी तथा विश्वसनीय बनाउनु तथा आर्थिक प्रशासन एवम् वित्तीय व्यवस्थापन गर्नु त्रिभुवन विश्वविद्यालयको महत्त्वपूर्ण कार्य भएकाले त्रिभुवन विश्वविद्यालय ऐन २०४९ (संशोधित २०७४), आर्थिक व्यवस्थापन तथा खरिदसम्बन्धी नियम २०५० (पछिल्लो संशोधन २०८०) लगायत विभिन्न नियम तथा कार्यविधि, निर्णय तथा परिपत्रको कार्यान्वयन गर्न लगाई आर्थिक प्रशासन तथा वित्तीय व्यवस्थापन सञ्चालनको लागि देहाय अनुसारको कार्यहरू सम्पादन गरिरहेको छ :

१. स्रोतहरूको संकलन, कोषहरूको निर्माण, सञ्चालन तथा परिचालन
२. बजेट तर्जुमा तथा विनियोजन व्यवस्थापन
३. आर्थिक स्रोत र साधनको पहिचान तथा परिचालन
४. आर्थिक नीतिनियम तथा कार्यविधिको तयारी
५. वित्तीय व्यवस्थापन तथा सूचना प्रणालीको व्यवस्थापन
६. खर्च व्यवस्थापन तथा लेखा व्यवस्थापन
७. वित्तीय विवरणको तयारी तथा विश्लेषण
८. आर्थिक नियन्त्रणको संयन्त्र तयार पार्नु
९. आर्थिक योजना एवम् नीति व्यवस्थापन
१०. आर्थिक स्रोत साधनको लेखाङ्कन
११. आर्थिक तथा वित्तीय जनशक्ति व्यवस्थापनमा परामर्श
१२. आर्थिक कृयाकलापहरू बिच समन्वय व्यवस्थापन
१३. त्रिविको संस्थागत दिगो विकासको लागि सरोकारवाला निकाय तथा संस्थासँग सहकार्य, निरन्तर सम्पर्क र सम्वन्ध स्थापित गर्ने ।

१४. प्रविधियुक्त लेखा अभिलेखन प्रणाली र एकद्वार लेखा प्रणाली नीतिको कार्यान्वयनमा जोड ।

१५. एकीकृत वित्तीय व्यवस्थापन सूचना प्रणालीको व्यवस्थाको माध्यमद्वारा सम्पूर्ण निकायहरूमा वित्तीय नियन्त्रण र व्यवस्थापन ।

आर्थिक अनुशासनमा लेखापरीक्षण निर्देशिका २०७७

त्रिभुवन विश्वविद्यालयमा हुने आर्थिक कारोवारहरूको सुनिश्चितता र आर्थिक अनुशासनको प्रत्याभूति दिलाउनको लागि आन्तरिक नियन्त्रण प्रणालीको उपप्रणालीको रूपमा निरन्तर परीक्षण र नियन्त्रण गर्ने दृष्टिकोण रहेको लेखापरीक्षण निर्देशिका २०७७ को वित्तीय अनुशासन र आर्थिक प्रशासन तथा व्यवस्थापनको प्रभावकारिताका लागि ठुलो योगदान रहने छ । हरेक बजेटेरी निकायमा हुने कारोवारको आन्तरिक लेखापरीक्षणमा एकरूपता ल्याई लेखा परीक्षणमा गुणस्तर तथा विश्वसनीयता अभिवृद्धि गर्न र महालेखा परीक्षणको कार्यलाई सहज तथा सरल बनाउन र आन्तरिक नियन्त्रण प्रणालीलाई आधुनिक प्रविधि सहित आन्तरिक लेखापरीक्षण कार्य सबल र सक्षम बनाउनको लागि यो निर्देशिकाको निर्माण गरिएको छ भन्ने व्यहोरा यसको प्रस्तावनामा उल्लेख गरिएको निर्देशिकाको औचित्य पुष्टि गर्दछ । प्राप्त सरकारी अनुदान र आन्तरिक स्रोतको व्यवस्थापन, परिचालन तथा उपयोगमा ल्याउँदै आधुनिक प्रविधि सहित आर्थिक व्यवस्थापन र आर्थिक अनुशासनको प्रत्याभूतिको लागि निर्देशिकाको निर्माण र यसको आधारमा गरिएको लेखापरीक्षणले सम्वद्ध बजेटेरी निकायहरू नियमसंगत ढंगले सञ्चालन भएको, नभएको बारेमा नियन्त्रण पद्धति अनुरूप सरोकारवालाहरू र नियमनकारी निकायलाई प्रत्याभूति दिन कोशिष गरिएको छ ।

अध्ययनको उद्देश्य र अध्ययनविधि

यस अध्ययनको प्रमुख उद्देश्य त्रिभुवन विश्वविद्यालयमा आर्थिक अनुशासनको अवस्था तथा आर्थिक कारोबारमा अनुशासनका लागि भएका प्रयासहरूको विश्लेषण गर्नु हो भने यसका विशिष्ट उद्देश्यहरू देहाय बमोजिम रहेका छन् ।

१) त्रिभुवन विश्वविद्यालयको विद्यमान आर्थिक अनुशासनको अवस्थाको अध्ययन गर्नु ।

२) आर्थिक अनुशासनका लागि भएका प्रयास र सुधारका पक्षमा गरेका वस्तुस्थितिको चर्चा गर्नु ।

आर्थिक अनुशासन भनेको कुनै पनि संस्थाको गुणात्मक पक्ष भएकाले प्रस्तुत अध्ययनमा सैद्धान्तिक पक्षलाई आधार बनाइएको छ । सूचना प्रविधि र त्यो भन्दा बढि यसै सन्दर्भमा गरिएका अध्ययनलाई साहित्य पुनरावलोकन माध्यमलाई मुख्यविधि राखी द्वितीयक स्रोतका सूचनालाई सन्दर्भ सामाग्री संकलन गरी अध्ययन गरीएको छ । प्राप्त द्वितीयक तथ्याङ्कहरू विश्वविद्यालयको सभा, कार्यकारी परिषदबाट पारित भएका र संवैधानिक निकायका रूपमा स्थापित सर्वोच्च निकाय महालेखा परीक्षकको कार्यालयबाट राष्ट्रपति समक्ष पेश भएको वार्षिक प्रतिवेदनहरू भएकाले यसको अध्ययनले झनै महत्त्व राख्दछ । सान्दर्भिक विषय सामाग्रीलाई सैद्धान्तिक आधारमा विश्वविद्यालयमा भएको र पहल गरिएका तथा महालेखा परीक्षण कार्यालयका वार्षिक प्रतिवेदनमा उल्लेख गरेका तथ्यांकहरूलाई अनुपातिक विश्लेषण गर्दै आर्थिक अनुशासनको अवस्था, कायम गर्न भएका प्रयास र सम्भाव्यता देखिएका समस्या एवम् समाधान तथा सुधारका पक्षहरूका बारेमा वर्णानात्मक र विश्लेषणात्मक रूपमा व्याख्या गरिएको छ ।

तथ्याङ्क विश्लेषण तथा प्रस्तुतीकरण :

द्वितीय स्रोतहरूबाट प्राप्त सूचनाहरू पनि यस अध्ययनको सामग्रीका रूपमा प्रयोग गरिएको छ । सङ्कलन गरिएका सामग्रीहरूलाई सैद्धान्तिक आधारमा त्रिभुवन विश्वविद्यालयमा आर्थिक अनुशासनका बारेमा महालेखा परीक्षक कार्यालयबाट औंल्याइएको बेरूजुका अवस्था र त्रिविले गरेका प्रयासहरूको तथा आर्थिक अनुशासन र वित्तीय विद्युतीय प्रशासनका सम्बन्ध एवम् आर्थिक अनुशासनका सुधारका पक्षका बारेमा यस अध्ययनमा विश्लेषण विधिको माध्यमबाट प्रस्तुत गरीएको छ ।

आर्थिक अनुशासनका लागि विद्युतीय वित्तीय प्रशासन

आर्थिक व्यवस्थापन भनेको निर्दिष्ट विशेष लक्ष्य सहित स्थापित संगठनहरूको आर्थिक कारेवारहरू प्रभावकारिता एव् प्रतिस्पर्धात्मक सक्षमता तथा कार्य दक्षताका साथ सम्पादन गर्ने एक प्रशासनिक आयाम हो । आर्थिक व्यवस्थापन सार्वजनिक प्रशासनको महत्त्वपूर्ण प्रणाली भएकाले संगठनको योजना तर्जुमा गर्ने,निर्णय गर्ने, साङ्गठनिक कार्य गर्ने, समन्वय गर्ने कर्मचारी एवम् मानव संसाधन व्यवस्थापन गर्ने, नियन्त्रण तथा निर्देशन गर्ने, उपलब्ध स्रोत तथा साधनको अधिकतम परिचालन गरी सम्बद्ध सरोकारवाला, सेवाग्राहीलाई सन्तुष्टी प्रदान गर्दै अपेक्षाकृत लक्ष्य प्राप्तिमा जोड दिन्छ । समग्र रूपमा आर्थिक अनुशासन कायम गरी लेखा प्रणालीका मान्यता अनुसार सफ्टवयेरको व्यवस्था गरी छिटो, चुस्त तथा छरितो, पारदर्शी, मितव्ययी तथा प्रभावकारी सेवा प्रवाह गर्नुपर्ने आजको आवश्यकता हो । अनुशासन कायम गर्ने उद्देश्यले भौतिक तथा गैर भौतिक आर्थिक स्रोतको अधिकतम परिचालन सँगै आर्थिक योजनाको नीति निर्देशनको तय, सांगठनिक संरचनाको निर्माण, जनशक्ति व्यवस्थापन, आर्थिक नीति तथा कार्यक्रमको कार्यान्वयन र तर्जुमा गरिएका योजनाको प्रभावकारी कार्यान्वयनको लागि गरिने आर्थिक संयन्त्रको व्यवस्थापन गर्नु नै आर्थिक प्रशासन हो । संयन्त्रको विकास गरी परीलक्षित गरेको लक्ष हासिल गर्नका लागि बनाइएका विधि र प्रक्रियामा आधुनिक प्रविधिको प्रयोग गरी सेवा प्रवाह गर्दा उपलब्धिमूलक र फलदायी हुनजान्छ । मुख्यतया आर्थिक प्रशासनले आर्थिक सुशासन र अनुशासन कायम गर्दै प्रभावकारिताका साथै दक्षतापूर्वक लक्ष्य हासिल गर्न नियमित रूपमा व्यवस्थित प्रणाली कार्यशील रहँदा र उक्त प्रणालीको गतिशीलताले मात्र सम्पूर्ण संगठनको सुशासनको आधार नै आर्थिक अनुशासन हो । संगठनले उपलब्ध स्रोत र साधनको अधिकतम परिचालन गर्न र संगठनलाई सुदृढीकरण र सवलीकरण गर्ने खुला र प्रतिस्पर्धात्मक आर्थिक नीतिको तय गर्दै उपलब्ध स्रोत र साधनको उच्चतम परिचालन गर्न त्रिभुवन विश्वविद्यालयको आर्थिक प्रशासनमा अनुशासन हुन आवश्यक छ । आर्थिक अनुशासन कायम राख्न अनिवार्य रूपमा विद्युतीय प्रशासनको नीति अवलम्वन गर्नैपर्ने देखिनुका साथै विद्यमान आर्थिक अनुशासनमा भए गरेका कमिकमजोरीहरूलाई हटाउने र उल्लेखनीय सुधार गर्न थुप्रै प्रयासहरू भएता पनि विश्वविद्यालयको जटिल सांगठनिक संरचना, नीति नियममा अस्पष्टता तथा नेतृत्वमा फितलो निर्देशनात्मक स्थिति, कार्य गर्ने प्रवृति, नीति नियममा दोहोरोपना, आर्थिक कारोवारको लेखा अभिलेखन गर्नु तथा लेखांकनमा आधुनिक तथा वैज्ञानिक प्रविधिको कम प्रयोगले गर्दा त्रिविले अपेच्छित सुधार गर्न सकेको छैन । प्रविधियुक्त आर्थिक सुशासनमा जोड दिई आर्थिक अनुशासनको पक्षमा त्रि.वि पछिल्ला वर्षहरूमा नीतिगत व्यवस्थामा जोड दिई वर्षेनी नीति कार्यक्रम तथा बजेटको व्यवस्था गरेको पाइन्छ ।

श्रीमान् रजिष्ट्रारज्यूले आ.व.२०८०।२०८१ को त्रिविको वजेट वक्तव्यमा विद्युतीय प्रशासनका बारेमा यसरी जोड दिनु भएको छ । "प्रविधिको पहुँचलाई विस्तार गरी विश्वविद्यालयको विद्यमान मानव संसाधनलाई समूह अनुसार

शिक्षण सिकाई, प्रश्नपत्र निर्माण, उत्तरपुस्तिका परीक्षण, सम्परीक्षण, परीक्षा व्यवस्थापन,शैक्षिक प्रशासनिक व्यवस्थापनसम्वन्धी विषयहरूमा आवश्यकता अनुसार अभिमुखीकरण तालिम सञ्चालन गरी सिप तथा क्षमता अभिवृद्धि गर्दै विश्वविद्यालयको सूचना प्रविधि नवप्रवर्तन केन्द्रलाई सवलीकरण गरी विश्वविद्यालयका वित्तीय तथा शैक्षिक व्यवस्थापनका कार्यहरू एकीकृत विद्युतीय प्रशासनमा रूपान्तरण गर्ने प्रक्रिया प्रारम्भ गरिएको कुरा बताउनु भएको छ । (बजेट वक्तव्य २०८०।२०८१ पेज नं. ख ५)

आर्थिक अनुशासन तथा प्रविधिमैत्री आर्थिक प्रशासन

त्रिभुवन विश्वविद्यालयमा हुने आर्थिक कारोवारको लेखा अभिलेखन तथा प्रतिवेदनहरूलाई वित्तीय सूचाङ्कको दृष्टिकोणले व्यवस्थित, प्रभावकारी तथा भविष्यमा गरिने वित्तीय योजना तर्जुमाको आधार तय गर्नको लागि आर्थिक कार्यप्रणालीलाई वि.सं. २०३३ सालमा कार्यान्वयनमा ल्याइएको थियो । उक्त लेखा कार्य प्रणालीलाई वि.सं. २०५१ सालमा संशोधन गरिएको थियो । साथै लेखा प्रणालीलाई थप प्रभावकारी बनाउनका लागि समयानुकूल परिमार्जन गरी प्रविधियुक्त लेखा प्रणालीको ढाँचा सहित त्रिवि लेखा निर्देशिका २०८० जारी गरिएको छ । लेखा निर्देशिका २०८० को प्रस्तावनामा *"लेखा कार्यप्रणालीलाई पेशावर तथा समयसापेक्ष लेखा व्यवस्थापनको प्रतिबिम्बनको लागि साथै महालेखापरीक्षकको कार्यालयले लेखापरीक्षण प्रतिवेदन तथा वार्षिक प्रतिवेदनहरूमा सार्वजनिक लेखामानदण्डअनुसार लेखाङ्कन तथा वित्तीय तथा भौतिक प्रतिवेदनहरू बनाउने ढाँचाको व्यवस्थापनको लागि जनाइएको कैफियतबमोजिम विश्वविद्यालयको वित्तीय तथा भौतिक विवरणको यथार्थपरक प्रतिवेदन तथा पेशागत वित्तीय सूचाङ्कको निर्माण गर्ने विश्वविद्यालयको लेखा व्यवस्थापनमा अबिलम्ब परिमार्जन हुनुपर्ने टिप्पणी हुँदै आएको र विश्वविद्यालयले सार्वजनिक गर्ने वित्तीय विवरण General Purpose Financial Statement अनुसार गर्न तथा एकीकृत विद्युतीय लेखा कार्यप्रणालीको व्यवस्था (Tribhuvan University Integrated Online Accounting Management System) (TUIOAMS))* लागु गर्न आवश्यक भएको" भन्ने व्यहोरा राखी त्रिवि कार्यकारी परिषद्बाट पारित भई आ.व. २०८०।२०८१ देखि कार्यान्वयनमा ल्याउनका लागि परिपत्र गरिएका छन् ।

आर्थिक कारोवारलाई चुस्त, पारदर्शी, मितव्ययी तथा प्रभावकारी बनाउनको लागि तय गरिएको एकीकृत वित्तीय व्यवस्थापन सूचना प्रणालीमा लेखाङ्कन तथा प्रतिवेदनका सूचना प्रबाह गर्न देहायका विषयहरूलाई समेटेर Tribhuvan University Integrated Online Accounting Management System (TUIOAMS) तय गर्ने व्यवस्थाका लागि सफट्वेयर खरिदको लागि त्रिविले प्रक्रिया अगाडि वढाएको छ ।

१) साधारण लेखाप्रणाली (General Accounting Information System)

२) तलब तथा भत्ता सूचना व्यवस्थापन प्रणाली (Payroll Information Management System)

३) आम्दानी व्यवस्थापन सूचना प्रणाली (Income Information Management System)

४) बजेट सूचना व्यवस्थापन प्रणाली (Budget Information Management System)

५) निवृत्तीभरण तथा उपदान सूचना व्यवस्थापन (Pension and Gratuity Information Management System)

६) ऋण प्रवाह तथा असुली सूचना व्यवस्थापन प्रणाली (Loan Information Management System)

७) लेखा परीक्षण सूचना व्यवस्थापन प्रणाली (Auditing Information Management System) लेखा निर्देशिका २०८० को प्रभावकारी कार्यान्वयन गर्ने सवालमा त्रिविका सबै निकायहरूमा केन्द्रीकृत

विद्युतीय वित्तीय प्रशासनको प्रयास रहे तापनि त्रिविका बजेटेरी निकायगत आ-आफ्नै स्रोतमा छुट्टाछुट्टै सफ्टवेयर प्रयोग भएकाले यसको पूर्ण कार्यान्वयन गर्न कठिनाई हुने चुनौती देखिन्छ ।

महालेखाको दृष्टिकोणमा सार्वजनिक जवाफदेहिता र सुशासन

त्रिविमा वित्तीय जवाफदेहिताः सार्वजनिक वित्तीय व्यवस्थापनलाई प्रभावकारी र नतिजामूलक बनाउन आर्थिक सुशासन कायम गर्न जरूरी छ । आन्तरिक नियन्त्रण व्यवस्था, आर्थिक कार्यविधिको पालना, लेखापरीक्षण प्रतिवेदनको कार्यान्वयनको स्थितिलाई हेर्दा आर्थिक सुशासनको पाटो निकै कमजोर देखिन्छ (म.ले.प. ५९ औ वार्षिक प्रतिवेदन) । सो प्रतिवेदनले औल्याएका आधारमा भन्नुपर्दा त्रिविमा वित्तीय जवाफदेहिताको अवस्था उत्साहप्रद हुन सकेको छैन । आर्थिक कार्यविधिमा निर्धारित प्रावधानको विपरित उही प्रकृतिका अनियमित कार्य बारम्बार दोहोऱ्याउनाले आर्थिक अनुशासन फितलो भएको देखिन्छ ।

त्रिविको संस्थागत सुशासनः आन्तरिक नियन्त्रण प्रणाली संस्थागत सुशासनको आधार हो । त्रिविका सबै निकायहरूमा आन्तरिक नियन्त्रण तर्जुमा नगरेको, वित्तीय प्रतिवेदनले समस्त कारोवारको यथार्थ चित्रण नगरेको, आन्तरिक लेखापरीक्षण समयबद्ध र कार्यात्मक रूपमा स्वतन्त्र र पेशागत एवम् व्यवसायिक हुन नसकेको अवस्था छ । त्रिविमा सार्वजनिक लेखामान नहुनु, लेखा कार्यविधिको मान्यतालाई लेखाका प्रयोगकर्ताहरूलाई कारोवारको प्रकृति र विषयसँग आवद्ध गराउन नसक्नु, आन्तरिक लेखापरीक्षणलाई प्रभावकारी बनाउन अन्तर्राष्ट्रिय अभ्यासको आधारमा व्यवस्थापकीय र सञ्चालनगत स्वतन्त्रता दिलाउने गरी त्रिविका सबै निकायमा आन्तरिक लेखापरीक्षणको व्यवस्था गर्नु पर्दछ । मुख्यतया आर्थिक प्रशासनले आर्थिक सुशासन र अनुशासन कायम गर्दै प्रभावकारिता दक्षतापूर्वक लक्ष्य हासिल गर्न र उपलब्धिमूलक नतिजा प्राप्त गर्न नियमित रूपमा प्रणालीगत शैलीले कार्यशील रहने हुनाले सङ्गठनको सम्पूर्ण सुशासनको मेरूदण्ड नै आर्थिक अनुशासन हो । महालेखा परीक्षकको ५६ औं देखि ६१ औं प्रतिवेदनमा आर्थिक अनुशासनको मूल पक्षहरू मध्ये संस्थाको चित्रण प्रस्तुत हुने गरी वित्तीय विवरणमा त्यसका खुलासाहरूलाई जवाफदेही बनाउनु पनि एक हो । यसै सन्दर्भमा महालेखा परीक्षण कार्यालयको ५९ औं वार्षिक प्रतिवेदनमा सुल्झाइएको छ । उक्त प्रतिवेदन अनुसार *"त्रिभुवन विश्वविद्यालयअन्तर्गत १४३ एकाई मध्ये १२१ निकायले यो वर्ष १३ अरब २६ करोड ७१ लाख खर्च लेखेका छन् । त्रिवि आर्थिक व्यवस्थापन तथा खरिद सम्बन्धी नियम २०५० मा विश्वविद्यालयले सबै आर्थिक कारोवारको केन्द्रीय आर्थिक विवरण तयार गरी महालेखा परीक्षक समक्ष पेश गर्नुपर्ने व्यवस्था छ । विश्वविद्यालयले केन्द्रीय आर्थिक विवरण तयार गरी पेश गरेका छैनन् । विश्वविद्यालय मातहतका निकायहरूले पेश गरेको छैन । विश्वविद्यालय मातहतका निकायहरूले पेश गरेको वित्तीय विवरणमा भवन, सवारी साधन, फर्निचर, उपकरणलगायत पूँजीगत सम्पत्तिको ह्रासकट्टी नगरेको, जग्गाको मुल्याङ्कन नराखेको, धरौटी तथा अन्य दायित्व एउटै शीर्षकमा राखेको, वित्तीय विवरणमा तुलनात्मक कारोबार नदेखाएका कारणले प्रस्तुत विवरणले समग्र कारोवारको यथार्थ चित्रण गरेको छैन । सम्पत्ति तथा दायित्वसमेतको यथार्थ कारोवार देखिने गरी वित्तीय विवरण तयार गर्नुपर्दछ । विश्वविद्यालयले आन्तरिक आयलाई नन्अपरेटिभ खातामा जम्मा गरी सो खाताबाट निकासा लिने नगरेको, धरौटी हिसाब छुट्टै खातामा नराखेको, अधिकांश निकायले बैंक हिसावमिलान नगरेको लगायतका व्यहोरा विगत वर्षदेखि नै औंल्याइँदै आएता पनि सुधार गरेको छैन । प्रचलित लेखा प्रणाली तथा ढाँचामा सुधार गरी आर्थिक कारोवारलाई पारदर्शी बनाउनु पर्दछ "*(म.ले.प. ५९ औं वार्षिक प्रतिवेदन) ।

आर्थिक अनुशासनमा सार्वजनिक खरिद व्यवस्थापन

लेखापरीक्षण महाशाखाबाट त्रिविका विभिन्न निकायमा आन्तरिक लेखापरीक्षण गर्ने शिलशिलामा आन्तरिक लेखापरीक्षणका क्रममा औंल्याएका सैद्धान्तिक वेरूजु तथा अनियमित कारोबारमध्ये सार्वजनिक खरिद व्यवस्थापनको कार्य निर्दिष्ट पद्धति बमोजिम हुन नसेकेको तीतो अनुभव रहेको छ ।

त्रिविमा सार्वजनिक खरिदको लागि आर्थिक व्यवस्थापन तथा खरिदसम्बन्धी नियम २०५०, सार्वजनिक खरिद ऐन २०६३ र नियमावली २०६४(पछिल्ला संशोधन सहित) प्रयोगमा रहेका छन् । त्यसै गरी सम्बन्धित मापदण्ड र अधिकार क्षेत्र निर्धारण भएका छन् । सार्वजनिक खरिद ऐनको प्रस्तावनामा नै "खरिदलाई पारदर्शी बनाउने, सहभागितामूलक, प्रतिस्पर्धात्मक र निष्पक्ष हुने" सुनिश्चितता गरेको छ ।

सार्वजनिक खरिदका लागि आवश्यक कानुन, मापदण्ड, नर्म्स लगायतका ब्यवस्था रहेता पनि सार्वजनिक खरिद प्रक्रिया स्वच्छ, प्रतिस्पर्धी, पारदर्शी र मितव्ययी हुन नसकेको स्थिति छ । सार्वजनिक खरिद समयमा नै अनुमान यथार्थपरक नभएको, अत्यधिक भेरिएसन हुने गरेको, खरिद कानुनमा व्यवस्था भए बमोजिम मालसामान, निर्माण कार्य र सेवाको आवश्यकता पहिचान हुन नसकेको, खरिदको वार्षिक योजना तथा गुरूयोजना तर्जुमा हुन नसकेको अवस्था देखिन्छ । त्यसैगरी निश्चित वर्गका व्यावसायीलाई मात्र मिल्ने गरी सर्त एवम् स्पेसिफिकेसन तयार गर्ने, पूर्व तयारीका कार्य नगरी ठेक्का व्यवस्थापन हुने समयमा ठेक्काको कार्य सम्पन्न नहुने, बोलपत्रमा अत्यधिक न्युनदर कबोल गरेको कारण कामको गुणस्तरमा समस्या रहने गरेको छ । विद्युतीय खरिद प्रणाली अनिवार्य रूपमा लागु गर्ने समयमा नै सार्वजनिक खरिद कानुन बमोजिम पूर्वतयारी पश्चात् समयमा नै खरिद गर्ने लागत अनुमानलाई वैज्ञानिक एवम् भरपर्दो बनाउँदै र प्रतिस्पर्धा फराकिलो हुने गरी स्पेसिफिकेसन तयार गर्ने कार्यलाई प्राथमिकता र प्रश्रय गर्नुको अतिरिक्त सार्वजनिक खरिद नियम तथा कानुनलाई समयानुकुल परिर्वतन गरी विकास र सेवामैत्री बनाउन अपरिहार्य देखिन्छ ।

आर्थिक अनुशासन कायम गर्नका लागि आर्थिक प्रशासनका माथि उल्लेखित कार्य गर्दै आएता पनि विश्वविद्यालयको महालेखा परीक्षण प्रतिवेदनले खासै उल्लेखनीय उपलब्धि हासिल गरेको देखिदैन । महालेखा प्रतिवेदनमा वर्षेनी वेरूजु घटाउनको लागि जुन रूपमा प्रयास र पहल हुनुपर्ने हो सो रूपमा प्रगति भएको पाइँदैन ।

तालिका नं. १

त्रिविमा बेरूजु र सम्परीक्षण प्रतिवेदन **रू.,००० मा**

आर्थिक वर्ष	प्रतिवेदन नं.	गत आ.व.सम्मको बेरूजु	चालु वर्षको बेरूजु	सम्परीक्षण भएको बेरूजु	जम्मा बेरूजु
२०७४।२०७५	५६ औं	१९५३२२२८	२८९४२१९	१२९९२१६	२११२७२३१
२०७५।२०७६	५७ औं	२११२७२३१	८४४१३९९	८९६६८१	२८६७१९४९
२०७६।२०७७	५८ औं	२८६७१९४९	९३७६६९	५३४०८३३	२४२६८७८५
२०७७।२०७८	५९ औं	२४२६८७८५	३११०१०३	६९४९३७	२६६८३९५१
२०७८।२०७९	६० औं	२६६८३९५१	८०११५१	९८९९९२	२६४९५११०
२०७९।२०८०	६१ औं	२६४९५११०	१८२६५२९	००।००	२८३२१६३९

स्रोतः महालेखाका वार्षिक प्रतिवेदनहरू

माथिको तालिका देखाइए जस्तै महालेखा परीक्षकका कार्यालयका प्रकाशित वार्षिक प्रतिवेदनहरूमा उल्लेखित तथ्याङ्कको विश्लेषण गर्दा त्रिविमा आ.व.२०७५।२०७६ मा सबैभन्दा बढी बेरूजु देखिन्छ भने सो वर्ष पछि त्रिविका प्रयासमा सुस्त गतिमा प्रगति भई आ.व. २०७८।२०७९ सम्ममा बेरूजु रकम केही मात्र घट्न सकेको देखिन्छ । तर आ.व.२०७९।२०८० मा बेरूजु सम्परीक्षण हुन सकेका कारण बेरूजु रकम बढेर २८३२१६३९ हजार पुगेको छ ।

तालिका नं. २: वार्षिक बजेट र बेरूजुको अवस्था **रकम रू ,००० हजारमा**

आर्थिक वर्ष	वार्षिक बजेट खर्च	प्रतिवेदन नं.	बेरूजु रकम	लेखा परीक्षण भएको निकाय संख्या	बेरूजु र बजेटको अनुपात प्रतिसतमा
२०७४।२०७५	१३५५३५९९	५६ औं	२८९४२१९	१९१	२१.३५
२०७५।२०७६	१५१८९२६३	५७ औ	८४४१३९९	१८६	५५.५७
२०७६।२०७७	१८९८४२८७	५८ औ	९३७६६९	१७७	४.९४
२०७७।२०७८	१९५८१८०७	५९ औ	३११०१०३	१४१	१५.८८
२०७८।२०७९	२००१६४५९	६० औं	८०११५१	९६	४.००
२०७९।२०८०	१९०४९२००	६१ औं	१८२६५२९	१४४	९.५८

स्रोतः त्रिवि बजेट वक्तव्य र महालेखा वार्षिक प्रतिवेदन

माथि तालिका नं. २ मा आ.व. २०७५।०७६ मा त्रिभुवन विश्वविद्यालयको वार्षिक बजेटको तुलनामा बेरूजु रकमको अनुपात ५५.५७ भने जुन गति पाँच वर्षको सबैभन्दा बढी बेरूजु अङ्क हो । त्यस्तै गरी सबै भन्दा कम बेरूजु अङ्क आ.व. २०७८।२०७९ मा देखिन्छ तर उक्त वर्ष लेखा परीक्षण गर्न बक्यौता संख्या पनि धेरै भएको अनुमान गर्न सकिन्छ । ६१ औं प्रतिवेदन सम्मको बेरूजु अङ्क आ.व. २०७९।२०८० को त्रिवि वार्षिक बजेटको तुलनामा १४८.६७ गुणा बढि देखिन्छ । महालेखा परीक्षणको वार्षिक प्रतिवेदन अनुसार आ.व. २०७४।०७५ मा चालु वर्षका १२१ र बक्यौता ७० गरी १९१, क्रमशः आ.व. २०७५।०७६ मा चालु वर्षका १२८ र वक्यौता ५८ गरी १८६, आ.व.२०७६।२०७७ मा चालु वर्षका १३३ र वक्यौता ४४ गरी १७७, आ.व. २०७७।२०७८ मा चालु वर्षका १२१ र बक्यौता २० गरी १४१ तथा आ.व. २०७८।२०७९ मा चालु वर्षका ९६ वटा र आ.व. २०७९।२०८० मा १४४ वटा बजेटेरी निकायहरूको लेखापरीक्षण सम्पन्न भएका छन् । विश्वविद्यालयलाई आर्थिक अनुशासनको लयमा ल्याउनका लागि विद्यमान लेखा प्रणालीमा प्रयोगमा मूल्याङ्कन तथा विश्लेषण गर्न महालेखाबाट पटकपटक निर्देशनात्मक तवरले सुल्झाइएको छ ।

आर्थिक अनुशासनको विद्यमान अवस्था र सुधारका प्रयासहरू

त्रिविका कार्यक्रम सञ्चालन गर्नका लागि गरिएका साङ्गठनिक कार्य तथा शैक्षिक प्रशासनका क्रियाकलापहरूले आर्थिक कारोवारको सिर्जना गर्दछ । जसका लागि आर्थिक क्रियाकलाप तथा कारोबारहरूको व्यवस्था मिलाउने, आवश्यक वित्तीय स्रोत पहिचान, सङ्कलन तथा परिचालन र औचित्यपूर्ण उपयोग गर्दा तोकिएका सार्वजनिक लेखामान, लेखा सिद्धान्त प्रणालीमा आधारित रहेर लेखा सम्बन्धी व्यवस्था गर्ने प्रचलित कानुन

बमोजिम खर्च गर्ने पद्धतिको विकास गर्नु र तोकिएका ऐन, नियम तथा कानुनबमोजिम कार्य सम्पादन गर्ने र गराउन सकेमा मात्र आर्थिक अनुशासन कायम गर्न सकिन्छ । त्रिवि ऐन, आर्थिक व्यवस्थापन तथा खरिद सम्बन्धी नियम तथा कार्यविधि एवम् निर्णय सम्मत् भएका कारोवारले अनुशासन कायम गरेको सङ्केत प्रदान गर्दछ । विश्वविद्यालयमा भएका आर्थिक क्रियाकलापहरूको व्यवस्थापन तथा नियन्त्रण र यसको जवाफदेही बनाउनको लागि त्रिवि ऐन, त्रिवि आर्थिक व्यवस्थापन तथा खरिद सम्बन्धी नियम २०५० (संशोधन २०७९।३।२४) को परिच्छेद १ को (द) र (फ१) देखि (फ१३) सम्म थप व्यवस्था गरी आर्थिक प्रशासनमा अनुशासन कायम गर्न वैधानिक व्यवस्था गरेको छ । यसले गर्दा त्रिविको आर्थिक प्रशासनलाई सार्वजनिक प्रशासनका मान्यता अनुसार लयमा लैजान सकिन्छ भन्ने सरोकारवालाहरूलाई विश्वास दिलाउन मद्दत गर्दछ ।यसरी आर्थिक प्रशासनले गरेका कार्यहरू नियमानुसार र अनुशासनपूर्वक भएको प्रत्याभूति प्रदान गर्न सकिन्छ । विश्वविद्यालयमा भएका कार्यहरूलाई आर्थिक प्रशासनको मुल्याङ्कन तथा अनुगमन, निरीक्षण तथा परीक्षणका कार्य प्रत्याभूति दिलाउनको लागि देहायका अनुगमन नियन्त्रण र परीक्षण कार्यले प्रमाणित गर्दछ ।

१) निकायगत आन्तरिक नियन्त्रण प्रणाली र निकायगत लेखापरीक्षण ।

२) त्रिवि केन्द्रीय कार्यालयको आन्तरिक लेखा परीक्षण ।

३) महालेखा परीक्षण कार्यालयबाट हुने अन्तिम लेखापरीक्षण ।

४) सरोकारवालाहरूबाट हुने परीक्षण तथा अनुगमन ।

५) त्रिवि शिक्षाध्यक्षको कार्यालयबाट हुने नियमित अनुगमन ।

६) विश्वविद्यालय अनुदान आयोगबाट हुने गुणस्तरीयता, सुनिश्चितता तथा प्रत्यायन प्रमाणीकरण ।

आर्थिक अनुशासनमा त्रिविको नीतिगत प्रयास

१) आ.व. २०८०।२०८१ का लागि त्रिवि सभाबाट पारित कार्यक्रम तथा बजेटमा बजेटको लक्ष्य, उद्देश्य, नीति तथा कार्यक्रमको उद्देश्यमा सामाजिक, आर्थिक, प्राविधिक तथा राष्ट्रको विकासका लागि विभिन्न क्षेत्रमा सक्षम नेतृत्व प्रदान गर्न सक्ने योग्य, दक्ष र अन्तर्राष्ट्रिय स्तरमा प्रतिस्पर्धा गर्नको लागि आवश्यक गुणस्तरीय शिक्षाको सुनिश्चितता गराउनु यसको विशिष्ट उद्देश्य पूरा गर्न आर्थिक सुशासन प्रवाह गर्नु त्रिविको आफ्नै प्रमुख जिम्मेवारी र उत्तरदायी हुनु पर्दछ । किनभने उच्चशिक्षाको अभिभारामा ७५.४५ प्रतिशत (म.ल.प ६० औं वार्षिक प्रतिवेदन) त्रिविकै भार रहेको छ । यसले लिएका विशिष्ट उद्देश्यमध्ये विद्यमान मानव संसाधनलाई नवीनतम सूचना प्रविधिको प्रयोग गर्न प्रोत्साहित गर्दै शैक्षिक तथा वित्तीय प्रशासनलाई प्रभावकारी, पारदर्शी, नतिजामुखी र चुस्त बनाउने बारेमा उल्लेख गरिएको छ ।

२) त्रिभुवन विश्वविद्यालयका नीति तथा कार्यक्रमहरूमा स्पष्टसँग विश्वविद्यालयको प्रशासनिक संरचना र मानव स्रोतलाई समय सापेक्ष बनाई प्रविधिमैत्री बनाइने छ भनी उल्लेख गरिएको छ । त्रिवि कार्यक्रम तथा बजेट (२०८०) मा "शैक्षिक तथा वित्तीय प्रशासनलाई चुस्त र दुरूस्त बनाउन शैक्षिक व्यवस्थापन तथा सूचना प्रणाली (TUEMIS), कार्यालय स्वचालित प्रणाली, विद्युतीय हाजिरी, आर्थिक सुदृढीकरणका लागि विद्युतीय एकीकृत आर्थिक व्यवस्थापन सूचना प्रणाली (EIFMIS) लाई कार्यान्वयनमा ल्याइएको छ

भने आगामी वर्ष समयानुकूल उक्त सफ्टवेयरहरूमा परीमार्जन र आवश्यकता अनुसारका सफ्टवेयरहरू निर्माण गरी कार्यान्वयनमा ल्याइनेछ" भन्ने उल्लेख गरिएको छ ।

३) विश्वविद्यालयमा बेरूजु न्यूनीकरणका लागि गरिएका प्रयासले आर्थिक अनुशासन कायम गर्न खोजिएको दृष्टान्तलाई प्रस्तुत गर्दछ । संस्थाका लेखा उत्तरदायी अधिकार प्राप्त अधिकारीलाई जिम्मेवार बनाउँदा केही हदसम्म आर्थिक अनुशासन कायम गर्न सकिने उदाहरण आ.व.२०७७।०७८ देखि गरिएको प्रयास हो । आ.व. २०८०।०८१ को कार्यक्रम तथा बजेटमा श्रीमान् रजिष्ट्रारज्यूबाट त्रिवि सभामा पेश भएको बजेट वक्तव्य अनुसार "बेरूजु फर्स्यौट तथा सम्परीक्षणका लागि आर्थिक वर्ष २०७७।२०७८ मा विश्वविद्यालयबाट थालिएको विशेष अभियानबाट बेरूजु नियमित तथा सम्परीक्षण गर्ने कार्यमा उल्लेखनीय मात्रामा प्रगति भएकोल बेरूजुलाई न्युनीकरण गर्न तथा आर्थिक अनुशासनलाई कडाईका साथ लागु गर्न नयाँ रणनीति अख्तियार गर्ने व्यवस्था मिलाएको छु । बेरूजु शुन्य गराउने संस्थालाई प्रोत्साहन पुरस्कारसम्बन्धी विगतमा गरीएको अख्तियारलाई यथावत राखिएको छ । बेरूजु सम्परीक्षण कार्यमा अहोरात्र खटिने सम्पूर्ण शिक्षक-कर्मचारीहरूलाई हार्दिक धन्यवाद दिन चाहन्छु । "यस नीतिलाई निरन्तरता दिँदा आ.व. २०७८।०७९ को लेखापरीक्षण प्रतिवेदनको आधारमा बेरूजु शुन्य भएका बजेटेरी निकायका लेखा उत्तरदायी अधिकृतलाई पुरस्कृत नभई संस्थालाई मात्र पुरस्कार प्रदान गर्ने व्यवस्था गरिएकाले आगामी वर्षमा बेरूजु न्यूनीकरण हुने प्रगतिमा ह्रास आउने सम्भावना देखिन्छ ।

४) त्रिभुवन विश्वविद्यालयको सम्पत्तिको जर्गेना गर्न, त्रिवि सम्पत्तिको अभिलेख र व्यवस्थापनलाई सृदृढ पार्दै भवन, जग्गा लगायतका सम्पत्तिको मौद्रिकीकरण गर्ने नीति अवलम्बन गरिनेछ । विश्वविद्यालयका सबै निकायहरूमा भौतिक सम्परीक्षण कार्यलाई निरन्तरता दिइनेछ र बजेट निकासा गर्दा भौतिक सम्परीक्षण र बैक रिकन्साइलको कार्य सम्पादनलाई प्रमुख आधारको रूपमा लिइनेछ । (आ.व. २०८०।०८१ को त्रिवि बजेट वक्तव्य)

त्रिविको आर्थिक अनुशासनमा देखिएका समस्या

१) खर्चसम्बन्धी नीतिको स्पष्ट दिशाबोध गर्ने कार्यमा उदासिनता ।

विश्वविद्यालयमा खर्च गर्ने व्यवस्थाका लागि त्रिविआर्थिक व्यवस्थापन तथा खरिदसम्बन्धी नियम, आर्थिक कार्यप्रणाली लगायत कार्य निर्देशिकाहरूमा प्रयोग भएका भाषामा अस्पष्टता तथा कार्यक्षेत्रमा देखिएको कार्यविधताले गर्दा स्पष्ट निर्देशन गरी दिशाबोध गर्न नसक्दा आर्थिक अनुशासन कायम गर्न कठिनाइ परेको देखिन्छ ।

२) कार्यक्रमको कार्यक्षेत्र र क्रियाकलाप स्पष्ट गर्ने नीतिगत व्यवस्था नहुँदा ।

विश्वद्यिालयका स्वीकृत कार्यक्रमको लागि क्षेत्रमा स्पष्ट परिभाषित हुन नसक्दा, लक्षित कार्यक्रम र कार्यान्वयन क्रममा भएको क्रियाकलापका बिचमा तालमेल नहुनु र अनुमान गरिएका कार्य लक्ष्यमा हुनसक्ने परिवर्तन तथा सम्पादन गरिएका क्रियाकलापहरूको औचित्य पुष्टि हुने नसक्नुका साथै उपलब्धि भएका हासिलको पृष्ठपोषणसम्बन्धी स्पष्ट निर्देशन नहुँदा र अख्तियारीहरूको जवाफदेहिता

गैरजिम्मेवारी हुनुका साथै कार्य गर्ने पदाधिकारी एउटा हुने तथा लेखापरीक्षणमा जवाफ दिने अर्को पदाधिकारी हुँदा आर्थिक अनुशासनमा समस्या देखिएको छ ।

३) बजेट र वित्तीय व्यवस्थापनसँगको सम्बन्ध स्पष्ट गर्न नसकिएको ।

अनुमान गरिएका कार्यक्रम तथा बजेट र त्यसका स्रोतको पहिचान, सङ्कलन तथा परिचालनसँग स्पष्ट सम्बन्ध नहुँदा खर्च व्यवस्थापन गर्न सकिँदैन । गरिने खर्चलाई प्रभावकारिता, मुल्याङ्कन तथा विश्लेषण गर्ने तथा मध्यावधि मुल्याङ्कन नहुँदा वित्तीय अनुशासनमा समस्या देखिन्छ ।

४) खर्च गर्ने प्रणाली पूर्ण र पारदर्शी बनाउनका लागि सूचनामूलक तवरले सम्प्रेषण प्रभावकारी हुन नसकेको ।

खर्च व्यवस्थापन गर्दा लेखा कार्यप्रणालीलाई त्रिविका निकायगत प्रकृतिअनुसारको तर्जुमा गर्न नसकिएको, स्रोत व्यवस्थापन संस्थागत प्रकृति अनुरूप बन्न नसक्दा, शैक्षिक प्रशासन सम्बद्ध विभाग तथा केन्द्रहरूबाट खर्च गर्ने समयावधि भित्र सूचनाहरू सम्प्रेषण नहुँदा खर्चमा प्रभावकारिता देखिदैन त्यस्तैगरी खर्चमा ढिलासुस्ती हुन जाने भएकाले आर्थिक सुशासनमा चुस्तपन देखिँदैन । जसले गर्दा आर्थिक अनुशासन कायम गरे जस्तो देखिँदैन ।

५) समष्टिगत खर्च र कार्यक्रमहरू बिच प्राथमिकताको कुरा प्रभावकारी नहुनु ।

विश्वविद्यालयबाट तय गरिने नीति, योजना तथा कार्यक्रम तथा बजेट व्यवस्थाका बिचमा निर्धारण गरी शैक्षिक कार्यक्रमका लक्ष्य तथा उद्देश्यहरू र सोका प्राथमिकताका आधार स्पष्ट र दिशाबोध गर्ने गरी स्पष्ट निर्देशन नहुँदा प्रभावकारी हुन सक्दैनन् जसले गर्दा आर्थिक अनुशासन कायम गर्न समस्या देखिन्छ ।

६) खर्च गर्ने स्रेातअनुसार कार्य र कार्यक्रम सञ्चालन तथा बजेट विनियोजन गर्ने प्रणालीगत हुन नसक्दा र बजेट खर्चको उद्देश्य अनुरूप हुन नसक्दा आर्थिक अनुशासनमा समस्या देखिन्छ ।

७) आर्थिक प्रशासनमा काम गर्ने कर्मचारीहरू दक्ष र पर्याप्त नहुनु ।

त्रिभुवन विश्वविद्यालयमा कर्मचारी व्यवस्थापन गर्ने निकायका रूपमा कर्मचारी प्रशासन महाशाखा, त्रिवि कार्यकारी परिषद् तथा त्रिवि सेवा आयोगको कार्यालय रहेका छन् । यिनीहरूको आ–आफ्नै कार्य क्षेत्राधिकार तथा जिम्मेवारी रहेको छ । धेरै लामो समयदेखि त्रिवि सेवा आयोगमा पदाधिकारीको व्यवस्थामा गतिहिनता देखिएको थियो । यसै वर्षमात्र पदाधिकारीहरूको व्यवस्था भए पनि कार्य प्रारम्भ हुन सकेको देखिँदैन । जसको कारण समयमै कार्यसम्पादन हुन सकिरेहका छैनन् । विगतका वर्षहरूमा स्वच्छ, पारदर्शी नियम, कानुन तथा कार्यविधिको अभाव एकातिर देखिन्छ भने जिम्मेवार पदाधिकारीहरूमा कार्यसम्पादनको अठोटको अभाव र निर्णय लिने कार्यमा अन्योलता, सेवा आयोगबाट लिएका परीक्षाहरू अनियमितता भएका आशङ्का गरी परीक्षामा असफल भएका उमेदवारहरू अदालत धाउने प्रबृत्तिले गर्दा त्रिवि सेवा आयोगले कार्यसम्पादन गर्न सकिरहेको छैन र जसको प्रभावले नियमित रूपमा रिक्त दरवन्दीमा पदपूर्ति हुन सकेका छैनन् । पछिल्लो समयमा सेवा आयोगले लिएको परीक्षामा आवश्यक सङ्ख्याभन्दा ज्यादै न्युन उर्त्तीण संङ्ख्याले गर्दा आवश्यक जनशक्तिको व्यवस्था नहुँदा आर्थिक प्रशासन बाहिरको जनशक्तिको व्यवस्था गरी काम चलाउन त्रिविलाई बाध्यता रहेको छ । यसरी काम चलाउ

गरिएका कर्मचारीहरू प्रविधिमैत्री नहुँदा र तल्ला तहको कर्मचारीलाई काममा लगाउँदा पनि आर्थिक अनुशासन कायम गर्न समस्या देखिएको छ ।

८) निकाय, विभाग तथा केन्द्र तथा शाखाहरूका बिचमा प्रभावकारी समन्वय र सहयोग नहुनु ।

त्रिविमा सञ्चालन गरिएका कार्यक्रम, व्यवस्था गरिएको प्रशासनिक संरचना अनुसारका निकायहरू, केन्द्रहरू तथा शाखाहरूका बिचमा प्रभावकारी समन्वय र सहयोग नहुँदा आर्थिक प्रशासनका कार्यहरू चुस्त तथा पारदर्शी बन्न सकिरहेका छैनन् । जनुसुकै कार्यक्रमहरूको नतिजा र त्यसको प्रभाव आर्थिक सूचकहरूबाट मापन गर्न सकिन्छ भन्ने बुझाइको कमी, कार्यसम्पादनमा देखिएको उदासीपन, जवाफदेहितामा फितलो नीति तथा नियन्त्रात्मक प्रशासनिक संरचना र संयन्त्रको अभावमा आर्थिक अनुशासन कायम गर्न कठिनाइ देखिन्छ ।

९) लेखापरीक्षण गर्ने निकायलाई अध्याबधिक र ताजगी बनाउन नसक्नु ।

त्रिविमा भए गरेका आर्थिक कारोवारको लेखापरीक्षण गर्नका लागि आन्तरिक लेखापरीक्षण महाशाखाको व्यवस्था गरिएको छ भने अन्तिम लेखा परीक्षण गर्नको लागि महालेखाको व्यवस्था रहेको छ । आन्तरिक लेखापरीक्षण कार्यमा खट्ने अधिकारीहरूको लागि स्थायी व्यवस्थापन नहुनु, आन्तरिक लेखापरीक्षणलाई आन्तरिक नियन्त्रण गर्ने संयन्त्रको रूपमा व्यवस्था नहुँदा र व्यवस्था गरिएका जनशक्तिमा निरन्तर तालिम तथा अभिमुखीकरण कार्यक्रम नहुँदा लेखापरीक्षण कार्यमा विविधता हुन जाने सम्भावना देखिन्छ र एउटै प्रकारका कारोवार एउटा निकायमा रूजु हुने र अर्को निकायमा बेरूजु भइ आर्थिक अनुशासन उल्लङ्घन भएको देखिनुले पनि आर्थिक अनुशासनमा समस्या देखिएको छ ।

१०) लेखासम्वन्धी कार्यहरू प्रविधिमैत्री नहुनु ।

आजको प्रतिस्पर्धात्मक युगमा संस्थालाई जनमुखी बनाउन, चुस्त, विश्वासिलो, भरपर्दो बनाउन र आकर्षणको केन्द्र बनाउन त्यसलाई निरन्तर प्रयास गरिरहनु पर्दछ । आर्थिक प्रशासनलाई सूचना र प्रविधिसँग जोडी त्यससँग सम्बन्धित निकायहरूलाई पनि प्रविधियुक्त रूपमा सबल र सक्षम बनाउन सकेमा मात्र आर्थिक प्रशासन र व्यवस्थापनको कार्य प्रभावकारी देखिन्छ तर आर्थिक प्रशासन तथा व्यवस्थापनको माध्यमबाट आर्थिक सुशासन प्रवाह गर्नको लागि सम्बद्ध निकायहरू प्रविधिमैत्री नबन्दा आर्थिक अनुशासनमा समस्या देखिने गरेको छ ।

आर्थिक अनुशासन कायम गर्न आवश्यक सुधारका पक्ष

१) आर्थिक प्रशासनमा जवाफदेहिता र उत्तरदायित्वको संयन्त्रात्मक नियन्त्रण प्रणालीको व्यवस्था गर्नुपर्ने ।

२) सम्पत्ति सुदृढीकरण ऐन तथा नियमअनुसार त्रिविका पदाधिकारीहरूको वार्षिक आय विवरण हरेक आर्थिक वर्षको प्रारम्भमा नै सम्बद्ध निकायमा पेश गर्नुपर्ने अनिवार्य प्रावधान हुनुपर्ने ।

३) आन्तरिक नियन्त्रण प्रणालीको संरचनागत संयन्त्रको व्यवस्था हुनुपर्ने ।

४) त्रिविका सम्पूर्ण निकायमा निकायविज्ञ सहित व्यवस्था गरिएको सांगठनिक संरचनामा निरन्तर सहयोग, असल सम्बन्ध र असल कार्य वातावरणको व्यवस्था हुनुपर्ने ।

५) कार्य क्षेत्राधिकारमा संरचनागत तथा संयन्त्रको व्यवस्थाबाहेक विभिन्न पक्षबाट हस्तक्षेप हुने गलत परम्परालाई हटाउनु पर्ने ।

६) बजेट तयारी कै समयमा खरिदविधि, खरिद गर्नुपर्ने समय, अवधि, करार सम्झौतासम्मको क्रियाकलापसहितको वार्षिक खरिद योजना र कार्यान्वयनको योजना तथा रूपरेखा तय गर्नुपर्ने ।

७) आन्तरिक नियन्त्रण प्रणालीको संयन्त्रात्मक संरचना तय गरी सबल, सक्षमताको विकासका साथै सूचनामूलक बनाउनु पर्ने ।

८) बजेट विनियोजनमा कार्यक्रम लक्ष्य, मध्यकालिन प्रगति विवरणसहित मुल्याङ्कन गर्नुपर्ने परिपाटी विकास गर्नुपर्ने ।

९) आर्थिक प्रशासनलाई एकद्वार कोष खाता प्रणालीअनुसार सञ्चालन गर्नका लागि त्रिविले गरेको पूर्ववत निर्णयलाई त्रिविका सबै निकायमा पूर्णतः कार्यान्वयन गर्नुपर्ने ।

१०) नीति, कार्यक्रम तथा बजेटसँग वित्तीय व्यवस्थापनको सम्बन्ध स्पष्ट र दिशाबोध हुने गरी व्यवस्था गर्नुपर्ने ।

११) कार्यकुशलता, कार्यक्षमता तथा प्रभावकारिताको मुल्याङ्कन तथा विश्लेषण गरेर मात्र बजेटको व्यवस्था गर्नका लागि नीति तय गर्नुपर्ने ।

१२) सार्वजनिक खर्चको उपादेयता र दिगोपनाको लागि खर्चको नीतिगत व्यवस्था गर्नका लागि पहल गर्नुपर्ने ।

१३) पुरस्कार र दण्ड तथा सजायँको लागि आवश्यक मापदण्डको व्यवस्था र सो मापदण्ड स्पष्ट, सरल र उपयोगी तथा दिगो हुनुका साथै निर्धारित मापदण्डअनुसार मात्र सम्बद्ध कार्यक्षेत्रमा संलग्न जनशक्ति तथा निकायका लागि मात्र प्रयोगमा ल्याउनु पर्ने ।

१४) आर्थिक कारोबारको समयमा नै छलकपट वा त्रुटी वा हिनाविना पत्ता लगाउनका लागि व्यवस्था गरिएको आन्तरिक लेखापरीक्षणलाई आन्तरिक नियन्त्रण प्रणालीको संयन्त्रको रूपमा व्यवस्था गर्ने र अन्तिम लेखापरीक्षण गर्न भन्दा अगाडि नै त्रुटी सच्याउन र नपुग प्रमाणहरू जुटाई पेश गर्न लगाउनका लागि समय उपलब्ध गराउनुका साथै जोखिम र कार्यसम्पादन तथा कार्यमूलकमा आधारित लेखापरीक्षण व्यवस्था गरी लेखापरीक्षणलाई सुधार गर्नुपर्ने ।

निश्कर्ष र सुझाव

आर्थिक अनुशासन कुनै पनि संस्थाले निर्धारण गरेका नीति, योजना तथा लक्षित कार्यक्रमहरूलाई निर्दिष्ट नियम तथा कार्यविधिको अधीनमा रही आर्थिक प्रशासन तथा व्यवस्थापनको माध्यमबाट स्रोत तथा संसाधनको पहिचान, सङ्कलन तथा व्यवस्था गरी प्रभावकारी रूपमा परिचालन तथा सञ्चालन गरी सेवाग्राहीलाई सुशासन प्रवाह गर्नु नै आर्थिक अनुशासन हो । सही र व्यवस्थित ढङ्गबाट लक्षित वर्गलाई आर्थिक पक्षका सेवा प्रवाह गर्नु नै आर्थिक अनुशासन भएकाले त्रिभुवन विश्वविद्यालयमा निर्दिष्ट गरिएका आर्थिक व्यवस्थापन तथा खरिदसम्बन्धी नियम, सार्वजनिक खरिदसम्बन्धी नियम, आर्थिक कार्यविधि नियम तथा निर्णय र परिपत्रको अधीनमा रही आफ्ना लक्षित उद्देश्य हासिल गर्नको लागि प्रयत्नाशील रहेको छ । निर्दिष्ट नियमको अधीनमा रही त्रिवि ऐन अनुसार गठित आङ्गिक तथा सम्बन्धन प्राप्त निकायहरूको

प्रभावकारी रूपमा सञ्चालन, शिक्षक कर्मचारीको सेवासर्तसम्बन्धी नियमले व्यवस्था गरेका जनशक्तिलाई सुविधा प्रदान गर्दा र शैक्षिक प्रशासन तथा सङ्गठन सम्बन्धी नियम बमोजिम सञ्चालनमा ल्याइएका कार्यक्रमहरूलाई व्यवस्थित तवरबाट सञ्चालन गर्ने प्रबन्ध मिलाउनु चुनौतीपूर्ण कार्य हो । त्रिभुवन विश्वविद्यालयलाई एकमुष्ठ सरकारी अनुदानमा आधारित सञ्चालित स्वायत्तप्राप्त उच्च शैक्षिक सार्वजनिक निकायको रूपमा बजेट व्यवस्था गर्दै आएको छ । प्राप्त बजेटको उच्चतम र समुचित प्रयोग र यसको पारदर्शिताका साथ परिचालन तथा उपयोगमा ल्याउँदै विश्वविद्यालयसँग भएको भौतिक तथा गैर भौतिक संसाधनको अधिकतम प्रयोग गरी विश्वविद्यालयलाई सबल बनाउँदै दिगो विकास गर्नुका साथै राष्ट्र निर्माणको योगदानमा अभिवृद्धि गर्न गरिने आर्थिक क्रियाकलापको अनुशासनका पक्षमा सुधार ल्याउन अपरिहार्य रहेको छ ।

आर्थिक प्रशासनका आयामहरूमा सुधार गर्नका लागि उपयुक्त प्रविधिको प्रयोग गर्न सकेमा, विद्यमान नियममा परिमार्जन तथा कार्यविधिमा सुधार गरी लक्षित वर्ग तथा सरोकारवालाहरूलाई सन्तुष्टि प्रदान गर्न सकेमा राष्ट्रनिर्माणमा योगदान दिएको ठहर्छ । तसर्थ आर्थिक प्रशासनलाई कुनै पनि सार्वजनिक संस्थाको मेरूदण्ड मानिने भएकाले आर्थिक स्रोत जुटाउनेदेखि लिएर प्रभावकारी परिचालनसम्म आर्थिक आचार संहितालाई पूर्ण पालना गर्न सकेमा, आन्तरिक नियन्त्रण प्रणालीमा संयन्त्रात्मक संरचनाको व्यवस्था गर्न सकेमा, प्रभावकारी सूचना प्रवाह गर्न सकेमा मात्र आर्थिक अनुशासन कायम गर्न सकिन्छ । आर्थिक क्रियाकलापमा संलग्न हुने सबै पक्षहरू, संस्था वा जिम्मेवार नेतृत्वमा रहेका पदाधिकारी तथा अधिनस्थ कर्मचारीहरूको व्यवहारमा नैतिकता, सरल आचरण, सभ्य र सामाजिक सुसंस्कारमा रहने, आर्थिक चरित्रमा रहने, लगनशील तथा निष्ठापूर्वक काम गर्ने प्रतिबद्धताको आवश्यकता पर्दछ भन्ने यस अध्ययनको निष्कर्ष हो ।

सन्दर्भ सामाग्री

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त्रिभुवन विश्वविद्यालयमा अनलाइन शिक्षणको कार्यान्वयन

*बद्रीप्रसाद फुएल**

लेखसार

प्रस्तुत लेखको उद्देश्य त्रिभुवन विश्वविद्यालयमा अनलाइन शिक्षण कार्यान्वयनको अवस्था पत्ता लगाउँदै सो कार्यान्वयनमा आइपर्ने समस्या समाधानका उपायहरू सुझाउनु रहेको छ । यस अध्ययनको उद्देश्य पूरा गर्न त्रिभुवन विश्वविद्यालय, महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा अनुसन्धानकर्ताले अध्यापन गर्ने शिक्षाशास्त्रको स्नातक तह तेस्रो वर्षको एउटा सेक्सनका ७५ जना विद्यार्थीहरूमा घटना अध्ययन विधिको उपयोग गर्दै गुणात्मक एवम् सङ्ख्यात्मक अनुसन्धान ढाँचामा सम्पन्न गरिएको छ । यहाँ आवश्यक पर्ने गुणात्मक एवम् सङ्ख्यात्मक सूचना प्रश्नावली तथा अन्तर्वार्ताका माध्यमबाट प्राथमिक स्रोतका रूपमा सङ्कलन गरिएको छ भने विषयसँग सम्बन्धित प्रकाशित तथा अप्रकाशित सामग्री द्वितीय स्रोत हुन् । अध्ययनमा भौतिक कक्षामा उपस्थित भएका विद्यार्थीहरूको सङ्ख्या तीन वर्षमा घट्दै गएको छ भने सोही अवधिमा अनलाइन कक्षाको उपस्थिति भने प्रत्येक वर्ष बढ्दै गएको छ । त्यस्तै भौतिक कक्षामा उपस्थित भएका विद्यार्थीहरूमध्ये अनलाइन कक्षामा अनुपस्थित हुनेको सङ्ख्या क्रमशः घट्दै गएको छ । यसरी विद्यार्थीहरूको उपस्थितिलाई हेर्दा भौतिक कक्षामा घटेको देखिन्छ भने अनलाइन कक्षामा बढ्दै गएको देखिन्छ । त्यसैले अध्ययनमा विद्यार्थीहरूको अनलाइन कक्षाप्रति समयसापेक्ष आकर्षण बढ्दै गएको देखिए तापनि प्राध्यापक तथा विद्यार्थीहरूसँग विद्युतीय उपकरणहरू समेतको पर्याप्त पहुँच नभएका कारण यसको कार्यान्वयनमा प्रभावकारिता ल्याउन सकेको देखिएन । साथै अनलाइन सिकाइको समयमा विद्युत आपूर्ति, विद्यार्थीहरूमा अनलाइन पठनपाठन गर्न आवश्यक प्राविधिक साक्षरता, विद्यार्थीहरूलाई सबै खालका सीप शिक्षण गर्न कठिनाई, समयमा विद्यार्थी भर्ना नहुनु जस्ता समस्यालाई समाधान गरियो भने यसको प्रवर्द्धन एवम् विकास गर्न सकिने सुझाव प्रस्तुत गरिएको छ ।

शव्दकुञ्जी: शिक्षण, अनलाइन शिक्षा, गुणस्तरीय शिक्षा, कोभिड १९, वेब टेक्नोलोजी

परिचय

परम्परागत रूपमा शिक्षण भनेको शिक्षार्थीलाई मानवीय वातावरणमा समायोजन गर्नु हो भने अहिले आएर शिक्षार्थीलाई जस्तो सुकै सामाजिक वातावरणमा समायोजन हुन सक्ने नागरिकको तयारी गर्नुलाई शिक्षण भनिन्छ (फुएल, २०७५) । संसारमा प्रविधिको विकाससँगै सिक्ने-सिकाउने तौरतरिकाहरूमा पनि फेरबदल हुँदै आएको छ । शिक्षणलाई विभिन्न विधि र प्रविधिहरूको प्रयोग गरेर विभिन्न मोडहरूबाट गरिन्छ । ती मोडहरू मध्ये, अनलाइन सिकाइ एउटा नवीनतम मोड हो जसले प्राविधिक उपकरणहरूको सहयोगमा परम्परागत

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रूपमा हुँदै आएको आमने-सामने सिकाइ मोडमा परिवर्तन ल्याउने काम गरेको छ । वेब टेक्नोलोजी एवम् नेटवर्कका माध्यमबाट पठनपाठन हुने क्रियाकलापलाई अनलाइन शिक्षा भनिन्छ । अर्थात्, अनलाइन शिक्षा भनेको घरमै बसेर इन्टरनेट वा वेब टेक्नोलोजीका माध्यमबाट गरिने सम्पूर्ण शैक्षिक क्रियाकलाप हो । अचेल यसलाई डिजिटल शिक्षाका रूपमा पनि बुझ्ने गरिन्छ । यसलाई वेब-आधारित प्रशिक्षण, ई-शिक्षा, वितरित शिक्षा, इन्टरनेट-आधारित शिक्षा, वेब-आधारित निर्देशन, साइबर शिक्षा, भर्चुअल शिक्षा वा नेट-आधारित शिक्षा पनि भनिन्छ ।

डमफोर्ड र मिलर (सन् २०१८) ले उच्च शिक्षाको अनलाइन कक्षामा पाठ्यक्रम र विद्यार्थीहरू बीच अन्तरक्रिया बलियो हुनेहुँदा यसले विद्यार्थीहरूमा परम्परागत भौतिक सिकाइको तुलनामा बढी तर्कमा संलग्न भएको पत्ता लगाए । उर्दन र वेगेन (सन् २०००) ले टेक्नोलोजीलाई आफू अनुकूल प्रयोग गर्न सिकाउने विस्तृत प्रक्रियाहरूलाई अँगाल्ने कक्षाको रूपमा लिएका छन् । हल (सन् २०००) ले अनलाइन कक्षालाई सामग्रीहरूको पहुँच सहित सम्पूर्ण पाठ्यक्रमको प्रसार हुने क्रियाकलापका रूपमा लिएका छन् । अनलाइन कक्षा अनलाइन सिकाइहरूमा मात्र केन्द्रित नभई यसले कम्प्युटर-आधारित सिकाइ प्लेटफर्म र डेलिभरी गर्ने विधि, विषय, ढाँचा र मिडिया जस्तै मल्टिमिडिया, शैक्षिक प्रोग्रामिङ, सिमुलेसन, खेल र निश्चित रूपमा नयाँ मिडियाको प्रयोग समावेश गर्ने हुँदा सबै विषय क्षेत्रहरूमा यसको उपयोग हुनेछ (किङ्गवी र किड, सन् २०१०) ।

क्याम्पबेल (सन् २००४) का अनुसार उच्चशिक्षामा अनलाइन शिक्षाले ज्ञानको साथसाथै चिन्तनशील र सहयोगी शिक्षाको विकासमा सहयोग गर्दछ । यसले शिक्षार्थीहरूलाई कनेक्टिभिटी निर्माण, ज्ञान बाँडफाँड, सहकार्य र सामाजिकतामा सहयोग गर्छ (मार्हान, सन् २००६) । त्यसैगरी सिमेन्स (सन् २००४) का अनुसार प्रविधिले हाम्रो दिमागलाई परिवर्तन गरिरहेको हुन्छ र हामीले प्रयोग गर्ने, परिभाषित गर्ने सोचलाई निश्चित आकार दिने काम गर्नुका साथै विश्वव्यापी ज्ञानलाई एकीकृत गर्दछ । पिसियाना (सन् २०१७) का अनुसार अनलाइन कक्षाको प्रयोगमार्फत् औपचारिक, अनौपचारिक र अनियमित शिक्षालाई पुनः सञ्चालन गर्नको लागि शिक्षा प्रणालीको विकल्पहरूमध्ये प्राविधिक सीप र शैक्षिक सामग्री प्रदान गर्ने एक महत्त्वपूर्ण माध्यम भएको छ । हङकङको एक अध्ययनमा अनलाइन माध्यमबाट सिकाउँदा बालबालिकाको सिकाइमा रूचि तथा घरमा अनलाइनमैत्री वातावरणको अभाव साथै अधिकांश बालबालिकाले सिक्ने कार्यहरू पूरा गर्न नसक्नु एवम् यसको अनुभव नभएका अभिभावकहरू यसबाट सन्तुष्ट भएको देखिएन (लाउ र ली, सन् २०२१) ।

कोभिड-१९ को महामारीले विश्वभरका लगभग २७ प्रतिशत देशका विद्यालयहरू पूर्ण वा आंशिक रूपमा बन्द भएका कारण शिक्षा प्रणालीलाई नै स्तब्ध बनाएको छ । यो महामारीमा झण्डै ७७ लाख बालबालिका आफ् नो भौतिक कक्षा कोठावाट वन्चित भएका छन् । यसबाट हरेक बालबालिको विद्यालय जाने, सिक्ने र आफू विकसित हुने अधिकारमा प्रश्न उठेको छ (संयुक्त राष्ट्र बाल कोष, युनिसेफ, सन् २०२१) । संयुक्त राष्ट्र सङ्घ शैक्षिक, वैज्ञानिक र सांस्कृतिक सङ्गठन (युनेस्को, सन् २०२०) का अनुसार विश्व जनसंख्याको ८० प्रतिशत विद्यार्थी राष्ट्रिय बन्दबाट प्रभावित भएका थिए । यसको परिणामस्वरूप धेरै स्कुल र कलेजहरूले उपलब्ध प्रविधि र डिजिटल प्लेटफर्महरूको आधारमा दूर शिक्षालाई विकल्पका रूपमा अनुसरण गरेका छन् । यसले नेपाल लगायत विश्वभरको शिक्षा र सिकाइको माध्यमलाई पुनर्विचार गर्ने नयाँ अवसर पनि दिएको छ । ३० मे २०२० नेपालको शिक्षा, विज्ञान तथा प्रविधि मन्त्रालयले वैकल्पिक माध्यमबाट विद्यार्थी सिकाइ सहजीकरणको लागि एक निर्देशिका जारी गर्दै सिकाइ निरन्तरताका लागि अनलाइन सिकाइ पोर्टलका साथै सिकाइ चौतारी समेत

स्थापना गरेको छ (ज्ञवाली एण्ड भट्ट, डिसेम्बर ३, सन् २०२१) । एक चिनियाँ अध्ययनमा अभिभावकहरूले तालिम नपाएका कारण अनलाइन शिक्षालाई अँगाल्न हिचकिचाएका थिए (डोङ्ग, कावो र लाइ, सन् २०२०) ।

धेरैजसो देशका विद्यार्थीहरू सन् २०२० देखि कोभिड १९ को मारमा परेका छन् । कोभिडको विषम परिस्थितिमा नेपालका केही स्कुल, कलेज तथा विश्वविद्यालयहरूले अनलाइनमार्फत् पठनपाठनलाई सुचारू गरे । यसै सन्दर्भमा नेपालको सबैभन्दा जेठो विश्वविद्यालय त्रिभुवन विश्वविद्यालयले २०७७ वैशाख १० देखि अफिस ३६५ अन्तर्गत माइक्रोसफ्ट टिम्समार्फत् अनलाइन कक्षाका माध्यमवाट पठनपाठनलाई निरन्तरता दिएको थियो । सो अनलाइन सिकाइ कार्यान्वयनको अवस्था कस्तो रह्यो साथै यसको सञ्चालनमा देखिएका समस्या तथा समाधानका उपायहरू समेत सुझाउने सेरोफेरोमा यो अध्ययन गरिएको छ ।

उद्देश्य

यस अध्ययनको उद्देश्य त्रिभुवन विश्वविद्यालयमा अनलाइन शिक्षण कार्यान्वयनको अवस्था पत्तालगाउँदै सो कार्यान्वयनमा आइपर्ने समस्या समाधानका उपायहरू सुझाउनु रहेको छ ।

अध्ययनविधि

यस अध्ययनमा घटना अध्ययनविधिको उपयोग गर्दै गुणात्मक एवम् सङ्ख्यात्मक ढाँचाको प्रयोग भएको छ । यहाँ आवश्यक पर्ने गुणात्मक एवम् सङ्ख्यात्मक सूचना प्राथमिक स्रोतबाट सङ्कलन गरिएको छ । अध्ययन कर्तासँग रहेको वि.सं. २०७६ देखि २०७८ सालसम्मका विद्यार्थीहरूको कक्षा हाजिरी अभिलेख, प्रश्नावली तथा छलफलबाट प्राप्त सूचनालाई समेत प्राथमिक स्रोतका रूपमा लिइएको छ । साथै विभिन्न अभिलेख तथा अनुसन्धानात्मक प्रतिवेदन, पत्रपत्रिकामा प्रकाशित सामग्री अध्ययनका द्वितीय स्रोत हुन् । यो अध्ययन त्रिभुवन विश्वविद्यालय, महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा अनुसन्धानकर्ताले अध्यापन गर्ने शिक्षाशास्त्रको स्नातक तह तेस्रो वर्षको एउटा सेक्सनका ७५ जना विद्यार्थीहरूमा सम्पन्न गरिएको छ ।

यहाँ अनुसन्धानकर्ताले अनलाइन कक्षामा सहभागी प्राध्यापक तथा विद्यार्थीहरूको प्रत्यक्ष अनुभवहरूको सूचना सङ्कलन गर्न प्रश्नावली तथा अर्ध-संरचित गहिरो अन्तर्वार्ताद्वारा सङ्कलन गरियो । यहाँ प्रत्येक सहभागीका लागि दुई पटक अन्तर्वार्ता लिइयो । पहिलो चरणको अन्तर्वार्तामा उनीहरूसँग सम्बन्ध निर्माण र जानकारी आदानप्रदानमा केन्द्रित थियो भने दोस्रो चरणमा सहभागीहरूले अनलाइन सिकाइमा आफ्ना अनुभवहरू बताएर सहयोग गरेका थिए । उनीहरू मेरा विद्यार्थी भएकाले अन्तर्वार्ताको क्रममा अनुसन्धान प्रश्नहरूसँग सम्बन्धित रहेर खुलेर सूचना प्रदान गरेका थिए ।

नतिजाको विश्लेषण

यस अध्ययनमा अध्ययनकर्ता स्वयम्ले अध्यापन गर्ने त्रिभुवन विश्वविद्यालयमा अनलाइन कक्षा सञ्चालनको वास्तविक अवस्था कस्तो रहेको छ ? भन्ने विषयमा अध्ययनभित्र समेटिएको क्षेत्रका प्राध्यापक एवम् विद्यार्थीहरूको हाजिरी अभिलेखवाट पाइएको सूचनाको अवस्थालाई निम्नअनुसार प्रस्तुत गरिएको छ ।

भौतिक कक्षामा उपस्थित/अनुपस्थित विद्यार्थी

यस उपशीर्षकमा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष विगत २०७६ देखि २०७८ सालसम्म तीनवर्षको भौतिक कक्षामा उपस्थित र अनुपस्थित विद्यार्थीहरूको सङ्ख्या तालिकाबद्ध गरी प्रस्तुत गरिएको छ । तथ्याङ्कको विश्लेषण तालिका र त्यसको व्याख्या निम्नानुसार छ ।

तालिका १

भौतिक कक्षामा उपस्थित/अनुपस्थित विद्यार्थीहरूको सङ्ख्या

क्र.स.	वर्ष	उपस्थित		अनुपस्थित	
		सङ्ख्या	प्रतिशत	सङ्ख्या	प्रतिशत
१.	२०७६	५२	६९	२३	३१
२.	२०७७	४५	६०	३०	४०
३.	२०७८	४०	५३	३५	४७
	जम्मा	१३७	६१	८८	३९

स्रोतः स्थलगत अध्ययन, २०७८

तालिका १ मा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष अनिवार्य विषय अध्ययन गर्ने एउटा सेक्सनका ७५ जना विद्यार्थीहरू विगत २०७६ देखि २०७८ सालसम्म तीन वर्षको भौतिक कक्षामा उपस्थित र अनुपस्थितहरूको विवरण तालिकामा प्रस्तुत गरिएको छ । यहाँ २०७६ सालमा ५२ जना विद्यार्थीहरू भौतिक कक्षामा उपस्थित भएका छन भने वि.सं. २०७८ सालमा आइपुग्दा यो सङ्ख्या घटेर ४० मा झरेको छ । त्यस्तै अनुपस्थित विद्यार्थीहरूको सङ्ख्या क्रमशः २३ देखि बढेर ३५ पुगेको छ । यसरी हेर्दा तीन वर्षमा जम्मा ६१ प्रतिशत विद्यार्थीहरू उपस्थित देखिन्छन् भने ३९ प्रतिशत विद्यार्थीहरू अनुपस्थित भएको देखिन्छ ।

अनलाइन कक्षामा उपस्थित/अनुपस्थित विद्यार्थी

यस उपशीर्षकमा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष विगत २०७६ देखि २०७८ सालसम्म तीन वर्षको अनलाइन कक्षामा उपस्थित र अनुपस्थित विद्यार्थीहरूको सङ्ख्या तालिकाबद्ध गरी प्रस्तुत गरिएको छ । तथ्याङ्कको विश्लेषण तालिका र त्यसको व्याख्या निम्नानुसार छ ।

तालिका २

अनलाइन कक्षामा उपस्थित/अनुपस्थित विद्यार्थीहरूको सङ्ख्या

क्र.स.	वर्ष	उपस्थित		अनुपस्थित	
		सङ्ख्या	प्रतिशत	सङ्ख्या	प्रतिशत
१.	२०७६	४०	५३	३५	४७
२.	२०७७	५०	६७	२५	३३
३.	२०७८	५५	७३	२०	२७
	जम्मा	१४५	६४	८०	३६

स्रोतः स्थलगत अध्ययन, २०७८

तालिका २ मा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष अनिवार्य विषय अध्ययन गर्ने एउटा सेक्सनका ७५ जना विद्यार्थीहरू विगत २०७६ देखि २०७८ सालसम्म तीनवर्षको अनलाइन कक्षामा उपस्थित र अनुपस्थितहरूको विवरण तालिकामा प्रस्तुत गरिएको छ ।

यहाँ २०७६ सालमा ४० जना विद्यार्थीहरू अनलाइन कक्षामा उपस्थित भएका छन् भने वि.सं. २०७८ सालमा आइपुग्दा यो सङ्ख्या बढेर ५५ मा पुगेको छ । त्यस्तै अनुपस्थित विद्यार्थीहरूको सङ्ख्या क्रमशः ३५ देखि घटेर २० पुगेको छ । यसरी हेर्दा तीन वर्षमा जम्मा ८० प्रतिशत विद्यार्थीहरू उपस्थित देखिन्छ भने ३६ प्रतिशत विद्यार्थीहरू अनुपस्थित भएको देखिन्छ ।

भौतिक कक्षामा उपस्थित हुने मध्ये अनलाइन कक्षामा अनुपस्थित विद्यार्थी

यस उपशीर्षकमा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष विगत २०७६ देखि २०७८ सालसम्म तीनवर्षको भौतिक कक्षामा उपस्थित हुने मध्ये अनलाइन कक्षामा अनुपस्थित विद्यार्थीहरूको सङ्ख्या तालिकाबद्ध गरी प्रस्तुत गरिएको छ । तथ्याङ्कको विश्लेषण तालिका र त्यसको व्याख्या निम्नानुसार छ ।

तालिका ३

भौतिक कक्षामा उपस्थित मध्ये अनलाइन कक्षामा अनुपस्थित विद्यार्थीहरूको सङ्ख्या

क्र.स.	वर्ष	भौतिक कक्षामा उपस्थित	अनलाइन कक्षामा अनुपस्थित	प्रतिशत
१.	२०७६	५२	१५	२९
२.	२०७७	४५	१०	२२
३.	२०७८	४०	५	१३
	जम्मा	१३७	३०	२२

स्रोतः स्थलगत अध्ययन, २०७८

तालिका ३ मा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष अनिवार्य विषय अध्ययन गर्ने एउटा सेक्सनका ७५ जना विद्यार्थीहरू विगत २०७६ देखि २०७८ सालसम्म तीनवर्षको भौतिक कक्षामा उपस्थित मध्ये अनलाइन कक्षामा अनुपस्थित विद्यार्थीहरूको सङ्ख्या तालिकामा प्रस्तुत गरिएको छ । यहाँ २०७६ सालमा ५२ जना विद्यार्थी भौतिक कक्षामा उपस्थितमध्ये १५ जना विद्यार्थीहरू अनलाइन कक्षामा उपस्थित हुन सकेका छैनन् । त्यस्तै वि.सं. २०७८ सालमा आइपुग्दा भौतिक कक्षामा उपस्थित सङ्ख्या ४० जना विद्यार्थीमध्ये ५ जना विद्यार्थीहरू अनलाइन कक्षामा उपस्थित हुन सकेका छैनन् । यसरी हेर्दा भौतिक कक्षामा विद्यार्थीहरूको उपस्थिति घटेको देखिन्छ भने अनलाइन कक्षामा विद्यार्थी उपस्थिति बढेको देखिन्छ ।

अनलाइन कक्षामा उपस्थित हुने मध्ये भौतिक कक्षामा अनुपस्थित विद्यार्थी

यस उपशीर्षकमा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष विगत २०७६ देखि २०७८ सालसम्म तीनवर्षको अनलाइन कक्षामा उपस्थित हुनेमध्ये भौतिक कक्षामा अनुपस्थित विद्यार्थीहरूको सङ्ख्या तालिकाबद्ध गरी प्रस्तुत गरिएको छ । तथ्याङ्कको विश्लेषण तालिका र त्यसको व्याख्या निम्नानुसार छ ।

तालिका ४

अनलाइन कक्षामा उपस्थित हुनेमध्ये भौतिक कक्षामा अनुपस्थित विद्यार्थीहरूको सङ्ख्या

क्र.सं.	बर्ष	अनलाइन कक्षामा उपस्थित	भौतिक कक्षामा अनुपस्थित	प्रतिशत
१.	२०७६	४०	१०	२५
२.	२०७७	५०	१५	३०
३.	२०७८	५५	२०	३६
	जम्मा	१४५	४५	३१

स्रोतः स्थलगत अध्ययन, २०७८

तालिका ४ मा त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न बहुमुखी क्याम्पस, इलाममा वि. एड. तेस्रो वर्ष अनिवार्य विषय अध्ययन गर्ने एउटा सेक्सनका ७५ जना विद्यार्थीहरू विगत २०७६ देखि २०७८ सालसम्म तीनवर्षको अनलाइन कक्षामा उपस्थिति हुनेमध्ये भौतिक कक्षामा अनुपस्थित विद्यार्थी सङ्ख्यालाई तालिकामा प्रस्तुत गरिएको छ । यहाँ २०७६ सालमा ४० जना विद्यार्थीहरू अनलाइन कक्षामा उपस्थित भएका मध्ये १० जना भौतिक कक्षामा अनुपस्थित देखिन्छन् । त्यस्तै वि.स. २०७८ सालमा आइपुग्दा यो सङ्ख्या अनलाइन कक्षामा उपस्थित ५५ जना मध्ये २० जना भौतिक कक्षामा अनुपस्थित भएका छन् । त्यस्तै भौतिक कक्षामा अनुपस्थित विद्यार्थीहरूको सङ्ख्या क्रमशः १० देखि बढेर २० पुगेको छ ।

त्रिभुवन विश्वविद्यालयमा अनलाइन शिक्षाको कार्यान्वयनमा आइपर्ने समस्या एवम् समाधानका उपाय

यस अध्ययनमा प्रश्नावली तथा अन्तर्वार्ता माध्यमबाट प्राप्त शाब्दिक सूचनालाई छोटो बुँदाका रूपमा परिवर्तन गरेर त्रिभुवन विश्वविद्यालयमा अनलाइन शिक्षाको कार्यान्वयनमा आइपर्ने समस्या एवम् समाधानका लागि अबलम्वन गर्न सकिने कदमलाई निम्नअनुसार प्रस्तुत गरिएको छ ।

विद्युत

विद्युत आपूर्ति अनलाइन कक्षा सञ्चालन गर्ने महत्त्वपूर्ण पूर्वाधार हो । विजुली आपूर्ति सहज भएन भने अनलाइन कक्षा सञ्चालन गर्ने कल्पनासमेत गर्न सकिँदैन । अध्ययनमा संलग्न नमुना प्राध्यापक एवम् विद्यार्थीहरूले दिएको सूचनामा भनेका छन् की कक्षामा जोडिएर पठनपाठन शुरू गरेपछि एउटै कक्षाको समयमा ३/४ पटक बत्ती आउँदै जाँदै गरेर सहज रूपमा कक्षा क्रियाकलाप सञ्चालन गर्न सकिएन । कहिले प्राध्यापक भएको स्थानमा त कहिले विद्यार्थी भएको स्थानमा बत्ती आउने जाने गर्दछ, यस्तो घटनाले कक्षा क्रियाकलापमा असहजता ल्यायो । त्यसैले अनलाइन कक्षा सहज रूपमा सञ्चालन गर्न सरकारले विजुलीको अवरोधलाई पूर्णरूपमा हटाउने नीति कार्यान्वयन गर्नु पर्दछ ।

इन्टरनेट

अनलाइन कक्षा सञ्चालन गर्न इन्टरनेट सेवा अनिवार्य हुन्छ । नेपाल सरकारले अनलाइन कक्षा सञ्चालनका लागि इन्टरनेट सेवाको विस्तारमा न्यून लगानी गरेको छ । नेपाल दूरसञ्चार प्राधिकरणका अनुसार

अहिले इन्टरनेटको पहुँच ७२ प्रतिशत जनतामा मात्र छ । नेपाल दूरसञ्चार प्राधिकरणको आँकडालाई हेर्दा पनि २८ प्रतिशत वालवालिकाहरू कक्षा क्रियाकलापमा संलग्न हुनबाट वन्चित रहेको देखिन्छ । हाल त्रिभुवन विश्वविद्यालयले अनलाइन कक्षा सञ्चालन गर्न अफिस ३६५ अन्तर्गत माइक्रोसफ्ट टिमस् नामक सफ्टवेयरलाई आधिकारिक रूपमा कार्यान्वयन गरेको छ । यो सफ्टवेयर कम स्पिडको इन्टरनेटले राम्रोसँग चल्न सक्तैन । सरकारी तथ्याङ्कअनुसार, ८२ प्रतिशत जनसंख्या इन्टरनेटको पहुँचमा छन् तथा ६५५ स्थानीय तहसम्म नेपाल टेलिकमको फोरजी सेवा विस्तार भएको छ । यस तथ्यका आधारमा पनि ठुलो जनसंख्या इन्टरनेट पहुँचबाहिरै छ । अर्को कुरा, सहरी क्षेत्रमा टेलिकमको फोरजी तथा अन्य ब्रोडब्यान्ड इन्टरनेट सेवाहरू भरपर्दा छैनन् भने ग्रामीण क्षेत्रमा अनलाइन कक्षाका लागि ती सेवा प्रभावकारी छैनन् । सरकारले सबै बालबालिकाहरूलाई इन्टरनेटको पहुँचमा पुऱ्याउनुका साथै सफ्टवेयर चल्नसक्ने अवस्थामा यसको स्पिड बढाँउने नीति ल्याउनु पर्दछ । यस्तै, हातहातमा इन्टरनेट तथा कम्प्युटरको पहुँचले निम्त्याउन सक्ने विकृतिलाई रोक्न अभिभावक तथा शिक्षक एवम् विद्यार्थीहरूलाई नैतिक शिक्षाको व्यवस्था समेत गर्नुपर्दछ ।

अनुशासन

विद्यार्थीहरूले अनलाइन कक्षालाई गम्भीरतापूर्वक नलिएको हुँदा उनीहरू स्वतन्त्र भएको महशुस गरी ई-शिक्षा प्रक्रियाहरूमा कक्षा अनुशासन कायम गर्न समस्या हुन्छ । एकजना उत्तरदाताले दिएको सूचना अनुसार परीक्षा अथवा गृहकार्यको समयमा पनि धेरै विद्यार्थीहरूले प्रश्नहरूलाई गम्भीरतापूर्वक विचार नगरी उत्तर दिने अनियमित तरिकाहरू प्रयोग गर्छन् । यस बाहेक, धेरै विद्यार्थीहरूले व्यक्तिगत ई-लर्निङ मोड्युलमा ध्यान केन्द्रित गर्नुको सट्टा अन्य गतिविधिमा उनीहरूको ध्यान गएको पाइयो । त्यसैले विद्यार्थीहरूलाई विषयवस्तुदेखि विचलित नभई आत्मानुशासन कायम गर्न प्रेरित गर्नुपर्दछ । शिक्षक विद्यार्थी अनलाइनमै छ कि अन्तै गयो, विद्यार्थीलाई रूचि भएको छ कि छैन भन्नेबारे सचेत हुनुपर्छ । यसका लागि बीचबीचमा प्रतिप्रश्न सोध्ने, विद्यार्थीहरूको रूचि-चाहना बुझ्ने गर्दै गर्नुपर्छ । अनलाइन पठनपाठन गर्दा शिक्षकहरूले विद्यार्थीहरूको सकारात्मक वा नकारात्मक बानीबेहोरा, स्वभाव, रूचि, क्षमता लगायतका आन्तरिक एवं बाह्य समस्या वा गुणहरूको अवलोकन र पहिचान गरी समाधानका लागि मनोविमर्श सेवा सञ्चालन गर्नुपर्छ । सिकारूहरूसँग अनलाइन मै अन्तरक्रिया, छलफल वा कुराकानीका माध्यमबाट समस्या पहिचान गरी समाधानका उपायहरूको खोजी गर्नुपर्छ ।

प्राध्यापकको इच्छा

अनलाइन कक्षा सञ्चालनका सम्बन्धमा प्रमुख रूपमा प्राध्यापकहरू नै जिम्मेवार हुन्छन् तर केहीले यसलाई झारो टार्ने माध्यम बनाएको कुरा उत्तरदाताहरूबाट आएको छ । उनीहरू कोभिड १९ को लहर चलेर लकडाउनका समयमा विभिन्न बहाना गरेर अनलाइन कक्षा सञ्चालन गर्न इच्छा नै देखाउँदैनन् । यसलाई उनीहरू विदाको सुविधा पाएको अभिनय गर्दै अनलाइन कक्षा सञ्चालन गर्ने दायित्ववाट पन्सने कोशिस गरेको देखिन्छ । कक्षा सञ्चालन गरे पनि राम्रो तयारी नगरी स्लाइड एवम् आवश्यक सामग्रीहरू नजुटाइ झारोटार्ने उद्देश्यले पठनपाठन गरेको देखिन्छ । यसैले कोरोनाको लहर आउनु भनेको सुविधा होइन यसलाई शिक्षण सिकाइ क्रियाकलाप फरक ढङ्गले अनलाइन मोडमा सञ्चालन गर्ने अवसर भएको हुँदा सम्बन्धित निकायबाट प्रभावकारी अनुगमन गर्ने व्यवस्था गर्नुपर्ने देखिन्छ ।

प्राविधिक साक्षरता

विद्यार्थीहरूसँगै शिक्षक पनि इन्टरनेट तथा कम्प्युटरमा दक्ष हुनु अनलाइन पठनपाठनको पहिलो आवश्यकता हो तर त्रिभुवन विश्वविद्यालयले अनलाइन कक्षा सञ्चालन गर्न लागु गरेको सफ्टवेयर राम्रोसँग चलाउन सबै प्राध्यापक तथा विद्यार्थीहरू सक्षम छैनन् । अनलाइन पठनपाठनमा शिक्षक तथा विद्यार्थीहरूबीच तारतम्य निकै मिलेको हुनुपर्छ । ज्ञान प्रदान गर्ने पहिलो पक्ष र ज्ञान ग्रहण गर्ने दोस्रो पक्ष अन्तरक्रियात्मक रूपमा पठनपाठनमा सरिक हुनुपर्दछ । अनलाइन शिक्षणमा शिक्षक एकोहोरो बोलिरहनु भन्दा अन्तरक्रियाको वातावरण वनाउनु पर्दछ । यसका लागि अनलाइन पठनपाठनमा शिक्षक तथा विद्यार्थीहरूमा इ-लाइब्रेरीसम्बन्धी सीपका साथै विभिन्न पठन वा अनुसन्धान सामग्री खोज्न, जर्नल, लेख रचना, फ्री रिसोर्ससम्बन्धी सामग्री खोज्न जान्नुपर्छ । यसको लागि प्राध्यापक तथा विद्यार्थीहरूलाई ई-लर्निङ वातावरणसँग परिचित हुन र यसको प्रयोग सुनिश्चित गर्न अन्तरक्रियात्मक तालिमहरूको व्यवस्था हुनुपर्दछ । अहिले प्रविधिमा शिक्षकभन्दा विद्यार्थी नै अगाडि रहेको कटुयथार्थलाई आत्मसात् गर्दै शिक्षकले हीनताबोध नगरी अनलाइन पठनपाठनमा सरिक हुनुपर्छ ।

व्यावहारिक ज्ञानको शिक्षण

अनलाइन कक्षा सञ्चालन एवम् मूल्याङ्कनमा सामान्यतया ज्ञान पक्षलाई वढी महत्त्व दिई सीप अथवा व्यावहारिक पक्ष कमजोर देखिन्छ । यस्तो कक्षामा सीपका साथै व्यावहारिक प्रयोगसँग सम्बन्धित उद्देश्यलाई प्रभावकारी रूपमा क्रियाकलाप सञ्चालन भएको पाइएन । सिकेका विषयवस्तुलाई व्यवहारमा प्रयोग गर्ने तरिका सिकाउन नसकिएको अवस्था विद्यार्थीहरूले बताएका छन् । विद्यार्थीहरूले कक्षामा ज्ञानको अंशमात्र सिकाएर मूल्याङ्कन गरिएको गुनासो गर्दै संज्ञानात्मक पक्षलाई वढी भार दिएको गुनासो गरे । त्यसैले अनलाइन कक्षालाई बढी भन्दा बढी अन्तरक्रियात्मक एवम् व्यावहारिक बनाउन पाठ्यक्रममा समेत परिमार्जन गर्दै प्राध्यापकहरूलाई जिम्मेवार बनाउनु पर्दछ ।

बौद्धिक चोरी

विद्यार्थीहरूले अनलाइन कक्षाको रेकर्डहरू प्राप्त गर्न सकिन्छ भन्ने थाहा पाएपछि तिनीहरूले शिक्षकले गरेको व्याख्यानलाई राम्ररी ध्यानपूर्वक सुन्दैनन् । किनकी कक्षा कार्य एवम् मूल्याङ्कनका समयमा उनीहरू सजिलैसँग आफूले प्राप्त गरेका रेकर्डका साथै इन्टरनेटको सहायताबाट हुबहु प्रतिलिपि गर्दै टाँस्ने सम्भावना रहने कुरा उत्तरदाताबाट आएको छ । यसरी बौद्धिक चोरी गर्ने अवस्थामा भएको कक्षा कार्य एवम् व्यक्तिगत मूल्याङ्कनले सही नतिजा दिन गाह्रो पर्दछ । यसका लागि कक्षामा अन्तरक्रिया बढाउन विशेषगरी विद्यार्थीहरूसँग अन्तरक्रिया बढाउने खालका क्रियाकलाप गर्नुपर्छ । कक्षाकार्य एवम् मूल्याङ्कनको गुणस्तर वृद्धि गर्न हामीले ठगी र बौद्धिक चोरी पत्ता लगाउन सक्ने सफ्वेयर खरिद गरी उपयोग गर्नुपर्दछ । साथै कक्षाकार्य एवम् मूल्याङ्कनको प्रत्यक्ष भिडियो र प्रत्यक्ष रेकर्डिङ गर्न सकिने व्यवस्था गर्नुपर्दछ ।

विद्युतीय सामग्री

नेपालका धेरै परिवारका लागि गाँस, बास, कपास जस्ता आधारभूत आवश्यकताको अभाव रहेको छ । अनलाइन पठनपाठनमा इन्टरनेटका साथै ल्यापटप/डेस्कटप एवम् स्मार्ट फोनको आवश्यकता पर्छ । यी

विद्युतीय सामग्रीहरू सबै विद्यार्थीहरूले खरिद गर्न सक्दैनन् । यसले गर्दा अति विपन्न परिवारका होनाहार विद्यार्थीहरू अनलाइन कक्षाको पहुँचभन्दा बाहिरै रहने सम्भावना रहन्छ । यस्तो परिस्थिति नआओस् भनेर सरोकारवालाहरू निकै सचेत हुनुपर्छ । अनलाइन शिक्षणविधि आफैंमा खर्चिलो छ । त्यसका लागि आवश्यक कम्प्युटर, ल्यापटप वा स्मार्ट फोन प्राध्यापक तथा विद्यार्थीहरूको अतिरिक्त खर्च हो । घरमा जति विद्यार्थी छन् त्यतिवटै यस्ता विद्युतीय सामान आवश्यक हुन्छ । महामारीले रोजगारी गुमाएका वा आम्दानी घटेका अभिभावकका लागि यसको व्यवस्थापन गर्न गाह्रो हुन्छ । यसका लागि ल्यापटप किन्नका लागि सरकारले सहुलियत ब्याजदरमा ऋण उपलब्ध गराउने नीतिलाई प्रभावकारी कार्यान्वयन हुनु आवश्यक देखिन्छ ।

प्राध्यापक एवम् विद्यार्थीको स्वास्थ्य

अनलाइन शिक्षामा कम्प्युटर एवम् स्मार्ट फोनको अगाडि लामो समय बसी पठनपाठन गर्नु/गराउनु पर्दछ । लामो समय स्क्रिनमा हेर्दाहेर्दा कहिले आँखा दुख्छ त कहिले टाउको दुख्छ । यसले गर्दा ध्यान पढाइमा भन्दा अन्यत्र मोडिनुका साथै विद्युतीय सामग्रीबाट निस्कने हानिकारक विकिरणले प्राध्यापक एवम् विद्यार्थीहरूको शरीर तथा आँखालाई असर गर्न सक्ने सम्भावना रहन्छ । त्यसैले यस्ता हानिकारक विकिरणबाट बच्न प्राध्यापक एवम् विद्यार्थीहरूले शरीर एवम् आँखा संरक्षण गर्ने चस्मा लगायतका सामग्रीको प्रयोग गर्नुपर्छ ।

शिक्षणविधि

प्राध्यापकहरूले अनलाइन कक्षामा विद्यार्थीमैत्री शिक्षणविधि अवलम्बन नगरेको पाइयो । विद्यार्थीहरूले क्यामेराको अगाडि हलचल नगरी लामो समय स्क्रिनमा हेर्दाहेर्दा कहिले आँखा दुख्छ त कहिले टाउको दुखाइका कारण थाहै नपाई ध्यान पढाइमा भन्दा अन्तै जानसक्छ तर केही शिक्षकले पढाइमा ठग्न खोजेको सोच्नुहुन्छ भन्ने गुनासो सुनियो । प्राध्यापकहरूले प्रश्न सोध्ने, राम्रोसँग बोल्ने, कहिलेकाही कोर्सबाहिरको पनि कुरा गर्ने, राम्रो गर्दा तारिफ गर्ने गऱ्यो भने विद्यार्थीहरू पढाइ प्रति आकर्षित हुन्छन् । विद्यार्थीहरू इन्टरनेटमा कहिलेकाही समस्या आउँछ, सर–म्याडमहरूको पनि कहिलेकाही त्यस्तो हुन्छ तर विद्यार्थीहरूको इन्टरनेटमा समस्या आए अथवा भिडियो अफ हुँदा हामीले बहाना बनाएको आरोप लगाउनुहुन्छ भन्ने गुनासो गर्दछन् । त्यसैले अनलाइन कक्षामा प्राध्यापकले विद्यार्थीहरूको भावना बुझेर सिकारूमैत्री क्रियाकलाप सञ्चालन गर्नुपर्ने देखिन्छ ।

विद्यार्थी भर्ना

त्रिभुवन विश्वविद्यालयले अनलाइन कक्षा सञ्चालन गर्न अफिस ३६५ अन्तर्गत माइक्रोसफ् टिम्स्लाई आधिकारिक सफ्टवेयरका रूपमा प्रयोग गरेको छ । प्राध्यापक एवम् विद्यार्थीहरूका लागि यो सफ्टवेयर प्रयोग गर्न त्रिभुवन विश्वविद्यालयले छुट्टै व्यक्तिगत आइडी प्रदान गर्ने प्रावधान रहेको छ । यो आइडी त्रिभुवन विश्वविद्यालयले पूर्णकालीन शिक्षक तथा भर्ना भएका विद्यार्थीहरूलाई मात्र प्रदान गर्दछ । यहाँ सबै विद्यार्थीहरूले समयमा आफ्नो भर्ना गर्दैनन् । त्रिभुवन विश्वविद्यालयले विद्यार्थीहरूको भर्ना थोरै विलम्ब शुल्क लिएर परीक्षाको फर्म भर्ने अन्तिम समयसम्म गर्ने गरेको देखिन्छ । समयमा आफ्नो भर्ना नगर्ने विद्यार्थीहरूलाई त्रिभुवन विश्वविद्यालयले आधिकारिक आइडी दिंदैन । यसको परिणामस्वरूप विद्यार्थीहरू अनलाइन कक्षामा जोडिन सक्दैनन् । यसैले अनलाइन कक्षालाई प्रभावकारी रूपमा सञ्चालन गर्न सबै पक्ष आफ्नो कर्तव्य र अधिकारप्रति सचेत हुनु आवश्यक देखिन्छ ।

निष्कर्ष

त्रिभुवन विश्वविद्यालयको आङ्गिक क्याम्पस महेन्द्ररत्न वहुमुखी क्याम्पस इलाममा वि. एड. तेस्रो वर्ष अनिवार्य विषयको एउटा सेक्सनका ७५ जना विद्यार्थीहरू मध्ये भौतिक कक्षामा उपस्थित भएकाहरूको सङ्ख्या तीनवर्षमा घट्दै गएको छ भने सोही अवधिमा अनलाइन कक्षाको उपस्थिति भने प्रत्येक वर्ष बढ्दै गएको छ । त्यस्तै भौतिक कक्षामा उपस्थित भएका विद्यार्थीहरूमध्ये अनलाइन कक्षामा अनुपस्थित हुनेको सङ्ख्या क्रमशः घट्दै गएको छ । यसरी विद्यार्थीहरूको उपस्थिति हेर्दा भौतिक कक्षामा घटेको देखिन्छ भने अनलाइन कक्षामा बढ्दै गएको देखिन्छ । त्यसैले अध्ययनमा विद्यार्थीहरूको अनलाइन कक्षाप्रति समयसापेक्ष आकर्षण बढ्दै गएको देखिए तापनि प्राध्यापक तथा विद्यार्थीहरू सँग विद्युतीय उपकरणहरू समेतको पर्याप्त पहुँच नभएका कारण यसको कार्यान्वयनमा प्रभावकारिता ल्याउन नसकिएको देखिन्छ ।

कोभिड १९ को समयमा भौतिक कक्षाको विकल्पका रूपमा अनलाइन कक्षामार्फत् पठनपाठन सुचारू गर्ने प्रयास विश्वभरि नै भयो तर नेपालमा साधनस्रोतको अभावमा अनलाइन शिक्षाको सञ्चालन प्रभावकारी भएको पाइएन । अनलाइन सिकाइको समयमा विद्युत आपूर्ति नियमित नहुनु, अनियमित एवम् कमजोर क्षमताको इन्टरनेट सञ्चालनमा रहनु, प्राध्यापक तथा विद्यार्थीहरूमा पठनपाठनको लागि आवश्यक अनुशासनको अभाव, प्राध्यापकहरूमा पठनपाठन गर्ने भन्दा झारो टार्ने प्रवृत्ति हावी देखिनु, प्राध्यापक तथा विद्यार्थीहरूमा अनलाइन पठनपाठन गर्ने आवश्यक प्राविधिक साक्षरताको अभाव, विद्यार्थीहरूलाई व्यवहारिक ज्ञानको शिक्षण गर्न कठिनाई, गृहकार्य लगायत मूल्याङ्कनमा बौद्धिक चोरीको सम्भावना हुनु, विद्युतीय सामग्रीको अधिक प्रयोगले प्राध्यापक एवम् विद्यार्थीको स्वास्थ्यमा समस्या देखिनु, विद्यार्थी केन्द्रित शिक्षणविधि अवलम्बन गर्न कठिन, समयमा विद्यार्थी भर्ना नहुनु जस्ता समस्याहरू भएता पनि यसलाई सहयोगात्मक सिकाइ गतिविधिका माध्यमबाट यसको प्रवर्द्धन एवम् विकास गरी पठनपाठनको संसारमा महत्त्वपूर्ण र भरपर्दो वैकल्पिक मोडहरू मध्ये एक हो भन्ने संकेत गर्दछ ।

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सूचना सङ्कलन, तथ्याङ्कीकरण, वर्गीकरण, विश्लेषणदेखि सूचना-प्रविधिको उपयोग सम्मका चुनौतीहरू र विद्यमान त्रिवि व्यवस्थापनमा सुधारको सम्भावना

*बिनोद जोशी**

लेखसार

त्रिभुवन विश्वविद्यालयको रूपान्तरणको सन्दर्भमा सूचना-प्रविधि क्षेत्रको वैश्विक प्रगतिको उपयोगलाई शैक्षिक क्रियाकलाप र विद्यार्थीहरूको सीप तथा सिकाईको उत्थान सँग मात्रै जोडेर विश्लेषण गर्नु भन्दा विश्वविद्यालयको समग्र व्यवस्थापनको प्रस्थान बिन्दु मानेर विश्लेषण गर्नु युक्तिसंगत हुने देखिन्छ। लागत-लाभ विश्लेषणको अति सामान्य सूत्रलाई पनि विश्वविद्यालय संचालनको विविध पक्षहरूमा आत्मसात गर्न नसक्दा हाम्रा शैक्षिक एकाईहरू आर्थिक रूपमा जीर्णप्रायः अवस्थामा पुगेको यत्र-तत्र सर्वत्र प्रष्ट छ। यसर्थ एकीकृत सूचना-प्रविधिको उपयोग गरी तथ्यपूर्ण सूचना अर्थात् "तथ्याङ्क" प्राप्त गर्ने र सोही बमोजिमका रणनीतिक योजनाहरू निर्माण गरी लागू गर्न सकेमा मात्रै सूचना-प्रविधिको उपयोगले समग्रमा सार्थक परिणाम दिन सक्ने देखिन्छ ।

तथ्याङ्कीकरण गर्न नसकिने कोरा सूचनाहरू "तथ्याङ्क" हुन सक्दैनन्। तालिकीकरण तथा वर्गीकरणपश्चात् तथ्याङ्कीकरण गरिएका सूचनाहरूलाई मात्रै सही अर्थमा आर्थिक एवं प्रशासनिक रूपान्तरणका लागि उपयोगमा ल्याउन सकिन्छ्। त्यसमा पनि सही ढंगले वर्गीकरण गर्न सकिएका सूचनाहरू मात्रै उपयुक्त स्वरूपमा विश्लेषण योग्य हुन्छन् र तिनलाई उपयुक्त प्रयोजनमा सम्प्रेषण गरी व्यवस्थापकीय चुस्तता हासिल गर्न सकिन्छ। योजना/परियोजनाहरूको लागत घटाउन र त्यसबाट थप आय र अवसरहरूको द्वार खोल्न समेत यसबाट मद्दत मिल्ने देखिन्छ। तर तथ्य-बिहीन कोरा सूचनाहरूको उपयोगले स्वार्थ प्रेरित पात्रहरूलाई आफू अनुकूल भाष्य निर्माण गर्न मात्रै सघाउँछ। त्यसरी निर्मित भाष्यहरू व्यवस्थापकीय उपयोगिताका दृष्टिले प्रायः प्रत्युत्पादक हुने गर्दछन्। अतः कार्य प्रारम्भ गर्दा नै तथ्याङ्कीकरण (Digitize) गर्न सकिने सूचना सङ्कलनको लागि कस्तो "सूचना सङ्कलन प्रारूप" (Information Collection Format_ बनाउने भन्ने सम्बन्धमा सूचना सङ्कलन गरिने एकाईको कार्य-पद्धती, अवस्था र उद्देश्यमा पर्याप्त ध्यानपुग्नु आवश्यक हुन्छ ।

शब्दकुञ्जी : निर्देशक सङ्केत, डिजिटल डिभाइड, सत्यापन निरूपण, डोमेन, तथ्याङ्कीय आधार, समयोचित, नवीकृत, अध्यावधिक, सूचना अभिलेखीकरण ।

विषयपरिचय

आमरूपमा धेरैले भन्ने र अधिकाधिकले आजभोलि सुन्ने गरेको वाक्यांश हो- "- वर्तमान युग सूचना र सञ्चारको युग हो। "सामान्य बोलीचालीमा सरल र बोधगम्य लाग्ने यो वाक्यांश भित्रको गहनता भने निकै जटिल छ।

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एकातिर सबै सूचनाहरू समान ढंगले महत्वपूर्ण, तथ्यांकीकृत गर्न सकिने, वर्गीकरण योग्य, विश्लेषण योग्य र विश्लेषण पश्चात् सम्प्रेषण योग्य सूचना प्रदान गर्ने प्रकृतीका हुँदैनन् भने अर्कोतर्फ प्राप्त सूचनाहरूलाई सही ढंगले प्रकटीकरण गर्न सकिने त्रुटीरहित विधीको छनौट गर्नु आफैमा एक कठिन कार्य हो। सूचनाको प्रकटीकरण पश्चात् पनि उक्त सूचनाको सम्प्रेषणले उत्पन्न गर्ने प्रभावको सही पूर्वानुमान गर्नु अर्को जटिल कार्य हो। प्रत्यक्षतः प्रविधिको इतिवृत्तमा घुम्ने कम्प्युटर विज्ञान, भौतिकशास्त्र वा इलेक्ट्रोनिक्स सम्बद्ध विषयहरूका लागि मात्रै यो चासोको विषय हो भन्ने लागे पनि परोक्षमा सञ्चार तथा पत्रकारिता, मनोविज्ञान, समाजशास्त्र, राजनीति र दर्शन, व्यवस्थापन, अर्थशास्त्र जस्ता समग्र विषयहरूका सन्दर्भमा यो अत्यन्त उपयोगी विषय हो भन्ने तथ्यलाई समय र सन्दर्भहरूले प्रमाणित गरिसकेको छ। आजको संसारमा भौतिक विज्ञान, सामाजिक विज्ञान र राजनीति मात्रै नभएर सार्वजनिक प्रशासन र व्यवस्थापनको सम्पूर्ण आयामहरू सूचना-प्रविधिकै इतिवृत्त घुमिरहेको छ भन्ने बुझ्न केही कठिन अवश्य होला तर पनि दुरूह भने छैन। फरक यत्ति छ की कम्प्युटर, मोबाइल, क्यामेरा वा टि.भि. मा आफ्नो छनौट अनुरूपको चल-अचल श्रव्य-दृश्य सुन्न र हेर्न आम प्रयोगकर्ताले लेख्ने आदेश तिनले बुझ्ने वास्तविक भाषा भने होइनन्। तिनलाई आदेश भन्दा पनि निर्देशको छुट्टै भाषाको आवश्यकता पर्दछ जसलाई "निर्देशक संकेत" (Digital Code) भन्ने गरिन्छ। "आदेश" मा अभ्यस्तता बढे "निर्देश" को भाषा र निर्देश गर्दा अपनाउनु पर्ने सावधानीप्रति कर्ताको ध्यान पुग्दैन। अधिकांश कर्ताहरू "आदेश" र "निर्देश" दुबै शब्दहरूलाई पर्यायवाची रूपमा प्रयोग गर्दछन् तर सो अनुरूपको बुझाइले कर्ताहरू मूल प्रयोजनबाट वस्थापित हुने गर्दछन्। त्रिभुवन विश्वविद्यालयको समग्र व्यवस्थापनमा पनि क्रिया र प्रतिक्रियाहरूमा कर्ताद्वारा उपयोग गरिएका "निर्देशक संकेत "हरूमा उन्नाइसौं शताब्दीको अन्त्यतिर देखापरेका कम्प्युटरीकृत प्रविधिमा उपयोग गरिएका साँकेतिक निर्देशका उही पुराना "कोड" हरूको नै बाहुल्यता देखिन्छ, जुन अहिले बजारमा उपलब्ध "न्यू जेनरेसन ग्याजेट्स" हरू सँग "समजोड योग्य" (Compatible) छैनन् र बढ्दो "डिजिटल डिभाईड" का कारण बनिरहेछन्।

नेपाल सरकार सूचना प्रविधिको माध्यमबाट जी टु बि (Government to Business) र जी टु ई (Government to Employees) सम्बन्ध भरपर्दो रूपमा कसरी विस्तार गर्न सकिन्छ भन्ने योजना तर्फ लागेको वर्तमान परिप्रेक्ष्यमा त्रिभुवन विश्वविद्यालयको पनि सूचना प्रविधिको माध्यमबाट सोही स्तरको सम्बन्ध विस्तारमा ध्यानखपुग्नु अपरिहार्य छ । यसैका माध्यमबाट वर्तमान पुस्तालाई निराशा र पलायनको मार्गबाट समृद्धिको मार्गतर्फ लाग्न सु-सुचित र सुशिक्षित बनाउने पथ विस्तार हुनसक्छ ।

जिम्मेवारी डिजिटल कोड, निर्देशक सङ्केत, कम्प्याटिबल, सूचना सङ्कलन प्रारूप

सूचना प्रविधि व्यवस्थापन, सफ्टवेयर खरिद तथा उपकरण व्यवस्थापनको लागि र अघिल्लो आ.व.को रू. ४ करोडको तुलनामा आ.व. २०७९/२०८० मा रू. ६ करोड विनियोजन गरी त्रिविले सूचना-प्रविधि पूर्वाधारको निर्माणमा आफ्नो तदारूकता बढाएको मात्रै नभई एकीकृत आर्थिक व्यवस्थापन सूचना प्रणालीको माध्यमबाट एकीकृत सूचना प्रणाली निर्माणमा समेत अघि बढ्ने सङ्केत गरेको छ। तर सङ्कलित सूचनाहरूलाई तथ्याङ्कीकरण गर्न र तथ्याङ्कीकरण गरिएका सूचनाहरूलाई वर्गीकरण गर्न सकिएमा मात्रै ती सूचनाहरू उपयुक्त स्वरूपमा विश्लेषण गर्न सकिने उपयोग योग्य हुन सक्नेछन्। तिनै सूचनाहरूलाई उपयुक्त प्रयोजनमा सम्प्रेषण गरी व्यवस्थापकीय चुस्तता हासिल गर्न सकिन्छ। दक्षतापूर्ण व्यवस्थापनले योजना/परियोजनाहरूको लागत घटाउने मात्रै नभई तीबाट प्राप्तहुने थप आय र अवसरहरूको द्वार खुला गराई दिन्छन्। तर कोरा सूचनाहरूले आफू अनुकूल भाष्य निर्माण गर्न अभ्यस्त धूर्त खेलाडीहरूलाई अनेकथरी भाष्य निर्माण गर्नमा मात्रै सघाउँछन्। त्यसरी निर्मित भाष्यहरू व्यवस्थापकीय उपयोगिताका दृष्टिले प्रायः प्रत्युत्पादक हुने गर्दछन्।

अतः कार्य प्रारम्भ गर्दा नै तथ्याङ्कीकरण (Digitization) गर्न सकिने सूचना सङ्कलनको लागि कस्तो "सूचना सङ्कलन प्रारूप" (Information Collection Format) बनाउने भन्ने सम्बन्धमा सूचना सङ्कलन गरिने एकाईको कार्य-पद्धती, अवस्था र उद्देश्यमा पर्याप्त ध्यानपुग्नु आवश्यक हुन्छ। आवश्यकता अनुरूपको "सूचना सङ्कलन प्रारूप" तयार पारी सकेपछि सूचना सङ्कलनको कार्य अघि बढाउन सूचना प्राप्तिको श्रोतको शुद्धता, विश्वसनीयता र आधिकारिकताको पहिचान गर्नुको साथै तालिम प्राप्त सङ्कलकहरूको सेवा मार्फत सूचना सङ्कलन गरिनुपर्छ। प्राथमिक र द्वितीयक दुवै श्रोतबाट प्राप्त हुने सूचनाहरू रूजु गर्ने र तिनको सत्यापन निरूपणको निरन्तरता कसरी कायम गर्ने भन्ने पक्षमा पर्याप्त सावधानी अपनाउनु पर्छ ।

त्रिभुवन विश्वविद्यालयको समग्र व्यवस्थापनमा विभिन्न कोणबाट उठिरहेका नकारात्मक प्रश्नहरूको उचित जवाफ तथ्याङ्कमा आधारित समयानुकूल योजनाहरूको माध्यमबाट मात्रै दिन सकिन्छ। परिणाममुखी आर्थिक, प्रशासनिक, शैक्षिक तथा भौतिक योजनाहरू निर्माण गर्न व्यवस्थित, आधिकारिक र भरोसायोग्य तथ्याङ्कीय आधारको आबश्यकता पर्दछ। यसको अभावमा आधारभूत व्यवस्थापनमै तहैपिच्छेका फरक-फरक धारणा आउनु अस्वाभाविक छैन। यसै कारणले विश्वविद्यालयको आधारभूत व्यवस्थापनमा समेत तजबिजी निर्णयहरूको बाहुल्यता रहँदै आएको र तदनुरूपकै भाष्य निर्माण भएको भानपर्नु अस्वाभाविक होइन। विभिन्न संकाय र तहबाट विभिन्न समयमा हुने गरेका परस्पर बिरोधी आधिकारिक निर्णयहरूले यसको पुष्टि गरेका छन् ।

त्रिविका ६४ आंगिक क्याम्पस, ५ अध्ययन संस्थान, ४ संकाय, ४० केन्द्रीत विभाग, ४ विभाग, ४ स्कुल, गरी जम्मा १२१ र ४ अनुसन्धान केन्द्रहरू समेत गरी कुल १२५ प्राज्ञिक गतिविधिका केन्द्रहरूको शैक्षिक, प्रशासनिक र आर्थिक अवस्थाको वर्तमान स्वरूपको गहन विश्लेषण गर्न सत्यापित तथ्याङ्कीय आधार स्पष्ट भएको देखिन्न। बजेट विनियोजन गर्दा समग्र शिक्षा क्षेत्रमा लगानी बढेको देखिए पनि सरकारहरूद्वारा आर्थिक वर्ष २०४७/०४८ यता प्रस्तुत गरिएका मध्ये (राजनैतिक, आर्थिक र प्राकृतिक रूपमा नै राष्ट्रिय प्रतिकुलतामा परेका केही वर्षहरूलाई छोडेर) अनुकूल र सामान्य वर्षका करिब २५ वटा वजेटहरूको विश्लेषण गर्ने हो भने पनि त्रिविको उत्थानको लागि वस्तुपरक ढङ्गले कुनै उल्लेखनीय प्रयत्न भएको देखिन्न। "हातीको मुखमा जीरा" भनेझैं दुई/चार करोड बजेट विनियोजन गरेर त्रिविलाई "विशिष्टता केन्द्र" (Centre of Excellence) बनाउने योजना बजेटमा सुनाएर ठट्टा गर्ने काम भएका छन्। नेपालमा विश्वविद्यालयहरूको कुल सङ्ख्या सोह्र पुगिसक्दा पनि (प्रादेशिक विश्वविद्यालयहरू समेत) सबैभन्दा पुरानो र सबैभन्दा ठुलो विश्वविद्यालय त्रिभुवन विश्वविद्यालयको "निवृत्तिभरण कोष" को व्यवस्थापनको दायित्व नेपाल सरकारले लिएको छैन र लिने स्पष्ट निर्देश पनि सम्बन्धित निकायबाट भएको पनि देखिन्न । तर त्रिविको उत्थानको मौसमी राग अलापेर दायित्वको भारी मात्रै बोकाउने काम राजनीतिक नेतृत्वबाट हुँदै आएको देखिन्छ। विशिष्टिकृत उद्देश्यका लागि भन्दा राजनीतिक लहडबाजीका कारण नयाँ विश्वविद्यालयहरूको स्थापना भएका हुन् भन्ने तथ्यलाई ती विश्वविद्यालयहरूमा रहेका विद्यार्थी सङ्ख्या, शैक्षिक कार्यक्रमहरूको उपादेयता, परिणाम, पूर्वाधारको अवस्था समेतले उजागर गरेको छ।

बदलिँदो समयको पदचापलाई पछ्याउँदै अध्यापनमा आधारित यस विश्वविद्यालयलाई अनुसन्धानमुखी विश्वविद्यालयमा रूपान्तरण गर्न र नेपाली जनताको साझा सम्पत्तिको रूपमा रहेको यस विश्वविद्यालयलाई फरक ढङ्गले सञ्चालन गर्न अध्यावधिक तथ्याङ्कीय आधार निर्माण नगरी सम्भव छैन। त्रिविमा हाल कायम रहेका कुल १२५ एकाइहरूको व्यवस्थित, यथार्थपरक, आधिकारिक एवं अध्यावधिक तथ्याङ्कीय आधार खडा गर्न नसक्दासम्म यसको समुचित व्यवस्थापन हुन्छ वा गर्न सकिन्छ भन्ने धारणालाई कदाचित्

युक्तिसंगत मान्न सकिन्न। विद्यार्थी संख्या, सञ्चालित शैक्षिक कार्यक्रम र पढाई हुने विषयहरूका आधारमा हेर्दा संसारकै ठुलो विश्वविद्यालय मध्येको एक र नेपालमा उच्चशिक्षा अध्ययन गर्ने कुल विद्यार्थी सत्त्याको ७८ प्रतिशत भन्दा बढी विद्यार्थी अध्ययन गर्ने भनेर त्रिवि चिनिएको छ। यसको वार्षिक कुल सरदर चौबिस (२४) अर्ब बजेट मध्ये नौ (९) अर्ब अर्थात् सरदर ३८ प्रतिशत रकम नेपाल सरकारबाट विनियोजन हुँदै आएको छ। उक्त विनियोजित रकमबाट त्रिविका शिक्षक/कर्मचारीहरूको तलव भत्ता भुक्तानी गर्न पुगेको छ। यसरी त्रिविलाई उच्च शिक्षामा ठूलो योगदान प्रदान गर्न नेपाल सरकारबाट सहयोग प्राप्त हुँदै आएको अहिलेकै अवस्थामा त्रिविबाट सम्बन्धन प्राप्त गरी सञ्चालनमा रहेका ५२८ सामुदायिक र ५५४ निजी (कुल १०८२) क्याम्पसहरूको समेत विश्वसनीय तथ्याङ्कीय आधार खोज्नु भनेको हाँडीगाउँको जात्राको अवसरमा त्यहाँ स्थित गहनापोखरीमा भाट-भटेनीको गहना खोजे जस्तै हुनेछ। टाइम्स हाइयर एजुकेसन रैंकिंग (THE) मा त्रिविको श्रेणी वर्ष २०२३ को तुलनामा वर्ष २०२४ मा घट्नुको मुख्य कारण रैंकिंग गर्ने संस्थाले मांग गरे अनुरूपको प्रारूप (Format) मा हामीहरू विश्वसनीय तथ्याङ्क उपलब्ध गराउन नसक्नु नै एक प्रमुख कारण हो। शैक्षिक वर्ष २०८० मा त्रिविमा विद्यार्थी भर्नाको कुल सङ्ख्या ४,८२, ५४१ र शिक्षकहरूको कुल सङ्ख्या ७९६६ देखिन्छ। यसरी हेर्दा विद्यार्थी/शिक्षक सङ्ख्याको समग्र अनुपातप्रति शिक्षक ३९.५:१ उपयुक्त जस्तो देखिए पनि विभिन्न क्याम्पस, अध्यापन गरिने विषयहरूको विषयगत शिक्षकहरूको उपलब्धताको अवस्था छुट्टा-छुट्टै हेर्दा भने निकै जटील रहेको देखिन्छ। यसले विगतमा ठुलो सङ्ख्यामा विद्यार्थी भर्ना हुने गरेका कतिपय विषयहरूमा अहिलेका युवाहरूको रूची नरहेको प्रष्ट्याउँछ। बजारमूल्य भएका समयानुकूल विषय तथा शैक्षिक कार्यक्रमहरूमा विद्यार्थी भर्नाको चाप रहे पनि तिनमा सोही अनुरूपकै शिक्षक दरबन्दी भने व्यवस्थापन हुनसकेको छैन । यसबाट शैक्षिक कार्यक्रमहरूको सञ्चालनमा आंशिक शिक्षकहरूमा निर्भर रहनुपर्ने जटिलता उत्पन्न भएको अवस्था छ। कक्षाभार विहीन स्थायी शिक्षकहरूको ठुलै जमातको व्ययभार त्रिविले व्यहोर्नु परिरहेको वर्तमान अवस्थामा आंशिक शिक्षकको थप व्ययभार समेतले त्रिवि को खर्च व्यवस्थापनमा चुनौती थपेको छ।

सूचना प्रविधिको संयोजन मार्फत् उल्लिखित चुनौती र समस्याहरूको वास्तविक अवस्था विश्लेषण गरी समस्या निराकरण र समुचित व्यवस्थापनको मार्गचित्र पहिल्याउन त्रिविले बेलाबखत अनेकन प्रयत्न पनि गर्दै आएको छ। विशेषतः सन् २०१९ मा विश्वव्यापी रूपमा फैलिएको कोरोना महामारीका कारणले गर्दा संसारभरीका विश्वविद्यालयहरूले नियमितरूपमा गर्दै आएको शैक्षिक गतिविधि सञ्चालन गर्न तथा पठन-पाठनको नियमित कार्यमा समेत चुनौती देखिएको सर्वविदितै छ। त्यस कठीन अवस्थाबाट पार पाउन अनलाईन प्रविधि र सूचना तथा सञ्चारका विभिन्न माध्यमहरूको उपयोगमा त्रिविले देखाएको तदारूकता सह्रानीय नै थियो। यसैबिच त्रिविमा अध्ययन गर्ने विद्यार्थीहरूको ठुलो सङ्ख्या र अध्यापन गर्ने सबैजसो प्राध्यापकहरूको व्यक्तिगत ई-मेल आईडी व्यवस्थित गरियो। यसबाहेक Microsoft कम्पनी सँग सम्झौता गरी Teams सफ्टवेयरको माध्यमबाट कक्षा सञ्चालन एवं कतिपय शैक्षिक कार्यक्रमहरूमा परीक्षा लिने, परीक्षाफल प्रकाशन गर्ने चुनौतीपूर्ण कार्य समेत सम्पन्न भए । दक्षिण एशियाका अधिकांश विश्वविद्यालयहरूले कोभिड सङ्क्रमणको समयमा आफ्नो पठन-पाठन नै गर्न नसकेको अवस्थामा पनि त्रिभुवन विश्वविद्यालयले भने Microsoft Office 365 A1 Free Educational Package का माध्यमबाट १४१ वटा डोमेन अन्तर्गत प्राध्यापक, कर्मचारी र विद्यार्थीहरूका ३ लाख भन्दा बढी (sample. office@tu. edu. np) इमेल ठेगाना सृजना गर्न सफल भयो। त्यस्तै गरी कोभिड सङ्क्रमणको समयमा NREN ले १७५ वटा ZOOM ID निशुल्क उपलब्ध गरायो जसले अनलाइन माध्यमबाट अध्ययन-अध्यापनलाई गति दिन सहज पनि भयो। अनलाइन पठन-पाठनको प्रभावकारीतालाई मूल्याङ्कन

गर्दा ZOOM सफ्टवेयरको उपयोग गरी एकै दिन एकै समयमा २,४१,००० शिक्षक-विद्यार्थीहरूको अधिकतम सहभागिताको रेकर्ड कायम भएको देखिन्छ। यसै गरी" एकीकृत वित्त व्यवस्थापन प्रणाली "(Integrated Finance Management System) अन्तर्गत त्रिविको लेखा प्रणालीलाई अघि बढाउने गरी सफ्टवेयर निर्माणको प्रकृया अघि बढिसकेको छ। यसैगरी त्रिवि, पाठ्यक्रम विकास केन्द्रले अनलाइन माध्यमबाटै समकक्षता निर्धारणका लागि आवेदन दर्ता गराउन मिल्ने व्यवस्था कार्यान्वयनमा ल्याईसकेको छ। त्यस्तै ४१ वटा आंगिक क्याम्पसहरूमा "केन्द्रीकृत हाजिरी प्रणाली" (Centralized Attendance System) को उपयोग गरी विद्युतीय हाजिरी प्रणाली उपयोगमा आइसकेको छ। परीक्षा नियन्त्रण कार्यालयतर्फ विद्यार्थीहरूले लब्धाङ्-पत्र तथा अन्य प्रमाण-पत्रहरू प्राप्त गर्न अनलाइन आवेदन फर्म भर्न सकिने व्यवस्था प्रारम्भ भईसकेको छ।

यसरी समय-सापेक्ष रूपमा प्रविधिको उपयोग गर्ने सम्बन्धमा त्रिविमा विभिन्न कामहरू भएका छन्। तर यस लेखमा भने त्रिवि का एकाईहरूमा समग्रमा समयानुकूल तथ्याङ्कीकरण हुन नसक्नु वा तथ्याङ्कीकरण कार्य अपूर्ण रहनुको कारणले जटील बन्न पुगेका केही समस्याहरूको बारेमा मात्रै चर्चा गरिएको छ ।

समस्या ः १ शैक्षिक कार्यक्रमको गुणस्तर कायम गर्न नियमित पठन-पाठन, विद्यार्थीहरूको नियमित उपस्थिति र आन्तरिक परीक्षा र शैक्षिक क्रियाकलापमा सहभागिताको कुनै विकल्प छैन। तर त्रिभुवन विश्वविद्यालयमा हरेक शैक्षिकसत्रमा ठुलो सङ्ख्यामा भर्ना हुने तर यहाँ उल्लेख गरिएका कुनै पनि शैक्षिक गतिविधिमा सहभागि नै नभई एकैपटक अन्तिम परीक्षामा सोझै समावेश हुन पाउने विशेषाधिकार सम्पन्न नियमित विद्यार्थीहरूको वास्तविक सङ्ख्या सम्बन्धमा वास्तविक लेखाजोखा नै हुन सकेको छैन। लामो समयदेखि चल्दै आएको यस्तो प्रचलनले गर्दा नियमित रूपमा अनियमित भएर पनि नियमित विद्यार्थी सरह नै अन्तिम परीक्षा दिन पाउने सुविधा विद्यार्थीको विशेषाधिकारको रूपमा स्थापित हुन पुगेको छ। त्रिविमा विद्यार्थी सङ्घ-सङ्गठनका नाउँमा हुने गरेका अधिकांश अवान्छित गतिविधिका प्रमुख जड यो पनि हो। विद्यार्थी सङ्गठन निर्माणको द्वन्ददेखि उदेक लाग्दो परीक्षा परिणाम, नक्कल गरेर उत्तीर्ण हुने वा शिक्षकलाई आन्तरिक मूल्याङ्कनका परीक्षाहरूमा पूर्णाङ्क नै हाल्न अवान्छित दवाव दिने प्रवृति आदि यसैका कारणले हुने गरेका छन्। यसैका कारण नियमित र अनियमित विद्यार्थीहरूको तथ्याङ्कीय आधार खडा गर्ने र आवश्यकता अनुसारको सुधार योजना लागु गर्ने परिपाटीको शुरूआत नै हुन नसकेको अवस्था त्रिविमा विद्यमान छ ।

समस्या ः २ शिक्षक-विद्यार्थीको उपयुक्त अनुपात शैक्षिक गुणस्तर कायम गर्न अत्यावश्यक पूर्वशर्त हो। तर अधिकांश चल्तीका शैक्षिक कार्यक्रम तथा विषयहरूमा केही आंगिक क्याम्पसहरूले आफूसँग भएको भौतिक एवं शैक्षिक पूर्वाधारहरूको उपलब्धतासँग मेल नै नखाने गरी विद्यार्थी भर्ना लिने गरेको पाईन्छ भने कतिपय कार्यक्रम तथा विषयहरूमा न्युनतम विद्यार्थी सङ्ख्या नै नपुग्ने गरेका थुप्रै उदाहरणहरू रहेका छन्। समाजशास्त्र, ग्रामीण विकास, अर्थशास्त्र, व्यवस्थापन जस्ता शैक्षिक कार्यक्रमहरूमा कतिपय आंगिक क्याम्पसहरूमा कुनै एक शैक्षिक सत्रको प्रथम वर्षमै ४५० देखि २५०० सम्म विद्यार्थीहरू भर्ना हुने गरेका घटना भएको देखिन्छ। विशेषतः स्व.वि.यु. निर्वाचन वा विद्यार्थीसँग सम्बन्धित कुनै राजनैतिक घटनाक्रम हुने पूर्वानुमान गरिएको अवस्थामा यी र यस्ता घटना सामान्य नै हुन्। अन्य समयमा पनि कक्षामा नियमित नै नभई अन्तिम परीक्षामा समावेश भई नियमित विद्यार्थीका रूपमा प्रमाणपत्र हासिल गर्ने उद्देश्य पूरा गर्नु सामान्य जस्तै भइसकेको छ। क्याम्पसको शैक्षिक कार्यक्रम वा विषयहरूमा भर्ना गर्न सकिने विद्यार्थीहरूको सङ्ख्या, भर्ना हुनसक्ने (?) ती कार्यक्रम सञ्चालन गर्ने भौतिक पूर्वाधारको व्यवस्था कस्तो रहेको छ (?) र अध्यापन गर्ने विषयगत शिक्षकहरूको उपलब्धताको अवस्था कस्तो छ (?) भन्ने तथ्यमा ध्यान नै नदिई नियमित शैक्षिक

कार्यक्रमहरू तर्फ जथाभावी विद्यार्थी भर्ना लिने गरिएको छ। यसले गर्दा त्रिविको शैक्षिक गुणस्तरमा ह्रास आउने, उत्तीर्ण हुने परीक्षार्थीहरूको प्रतिशत निकै कम देखिने र व्यवस्थापकीय समस्या सृजना भई त्रिविको आर्थिक दायित्वमा बढोत्तरी भएको मात्रै नभई त्रिविका आंगिक क्याम्पसहरू अनेकन नैतिक एवंम् राजनीतिक विकृति र विसंगतिको अखडा समेत बन्न गएको देखिन्छ ।

समस्या : ३ विद्यार्थी सङ्ख्या अत्यन्तै न्युन हुने गरेको कतिपय शैक्षिक कार्यक्रम र विषयहरू पनि सञ्चालनमा नरहेका होइनन्। त्रिविले दश (१०) जना भन्दा कम विद्यार्थी सङ्ख्या भर्ना भएका शैक्षिक कार्यक्रम तथा विषयहरूको नियमित सञ्चालन नगर्न पटक-पटक परिपत्र गरेको छ। तर यसको ठिकसँग अनुगमन भने भएको देखिन्न। पर्याप्त विद्यार्थी सङ्ख्या नभएका शैक्षिक कार्यक्रमहरूमा समेत आंशिक शिक्षकले अध्यापन गर्दा पाउनुपर्ने न्युनतम पारिश्रमिक पनि शुल्कबाट नउठ्ने बरू त्रिविलाई उल्टै ठुलो व्ययभार थपिने गरी ऐच्छिक विषयहरू छनौट गर्ने सुविधा दिईएको छ। स्पष्ट र पर्याप्त तथ्याङ्कीय आधारको अभावमा लागत, लाभ विश्लेषणको न्यूनतम मापदण्ड पालना गर्न गराउने तर्फ पर्याप्त ध्यान पुग्न सकेको देखिंदैन।

समस्या : ४ त्रिविका कतिपय आंगिक क्याम्पसहरू दूरी का हिसाबले, लागत-लाभ विश्लेषणका हिसाबले वा विद्यार्थीहरूका रूची, भर्ना दर तथा परीक्षा परिणाम वा अन्य कुनै हिसाबले पनि औचित्य साबित गर्नै नसकिने अवस्थामा पुगी सक्दा पनि ती क्याम्पसहरूमा नियमित भनिएका शैक्षिक कार्यक्रमहरू थोरै-थोरै विद्यार्थी सत्त्या राखेरै पनि सञ्चालित छन्। एउटै क्याम्पसमा पनि थोरै-थोरै सङ्ख्यामा विद्यार्थी बाँडेर पनि प्रात, दिवा, सन्ध्याकालीन सत्रमा उही कार्यक्रम सञ्चालन गरिएका छन् । यसले न त सामाजिक योगदानमा कुनै प्रभाव थपेको छ न त क्याम्पस सञ्चालनको व्ययभार नै घटाएको छ। बरू यसले त्रिविको व्ययभार बढाउन र शिक्षकहरूको कक्षाभार आवश्यकता भन्दा बढी अर्थात् प्रतिफल विहीन ढङ्गले बढाएको मात्रै छ ।

समाधानको पाटो

समस्या समाधानका लागि समस्या उत्पत्तिको श्रोत र त्यसको विविधता बारे तथ्याङ्कीय आधारमा जानकारी हुनुपर्छ। यसका लागि सही सूचना र त्यस्ता सूचनामा आधारित विश्लेषण योग्य तथ्याङ्कहरूको आवश्यकता पर्दछ। हिजोआज प्राध्यापक/कर्मचारीहरूको टाउको गनेर समस्या समाधानको पाटोमा कुतर्क गर्नेहरूको पनि त्रिवि भित्र ठुलै जमात उपस्थित छ। तर विषयगत वा कार्यगत विशिष्टता र क्षमताको सन्दर्भमा ती कुतर्कहरूले कुनै समाधान दिन सक्दैन। यहाँ उल्लेखित सबै समस्याहरूको अवस्था लामो समय देखि उस्तै रहनुको मुख्य कारक नै त्रिविसँग समयोचित, नवीकृत र अध्यावधिक गरिएका तथ्याङ्कहरूको आधिकारिक आधार उपलब्ध नहुनु तथा उपलब्ध तथ्याङ्कहरूको पनि आपसमा एकीकृत गर्ने आधार तयार नहुनु नै हो।

समाधान : १ त्रिविका विभिन्न शैक्षिक कार्यक्रमहरूमा भर्ना हुने विद्यार्थीहरूले कति शैक्षिक घण्टा नियमित उपस्थिति वा हाजिरी पुर्याउनु पर्ने हो भन्ने सम्बन्धमा सेमेष्टर प्रणालीमा आधारित भई सञ्चालनमा रहेका शैक्षिक कार्यक्रमहरूमा ८० प्रतिशत अर्थात् कुल १८० कक्षा दिन मध्धे १४४ दिन हाजिरी हुनुपर्ने मापदण्ड अपनाई आएको छ। तर नियमित शैक्षिक कार्यक्रमहरूमा यस्तो कुनै मापदण्ड लागु भएको छैन र मापदण्ड लागु भएका शैक्षिक कार्यक्रमहरूमा पनि यसमा कडाई भएको देखिन्न। अतः यसका लागि विद्यार्थी भर्ना र कक्षामा तिनको नियमित उपस्थितिलाई सुनिस्चित गर्ने उद्देश्यले सूचना सङ्कलन प्रारूप र निर्देशिका तयार गरी अनिवार्य लागु गर्ने व्यवस्था गरिनु वान्छनीय देखिन्छ। सूचना सङ्कलन प्रारूप र निर्देशिका लागु गर्ने परिपाटी प्रभावकारी बनाउन त्रिविको प्रत्यक्ष व्यवस्थापनमा सञ्चालित हरेक शैक्षिक एकाईमा सर्वप्रथम सूचना अभिलेखीकरण गर्ने कार्यालयको स्थापना गर्नु पर्दछ। यस्तो कार्यालयको सञ्चालन गर्न कक्षाभार नभएका

वा कम भएका सबै तहका शिक्षक/प्राध्यापकहरूलाई कामको जिम्मेवारी दिएर काम लगाउन सकिन्छ। आवश्यक भएमा आंशिक रूपमा एकजना प्राविधिक कर्मचारी नियुक्त गरी काममा लगाउन सकिने जिम्मेवारी निकाय प्रमुखलाई दिने व्यवस्था मिलाउन सकिन्छ। सूचनामा एकरूपता ल्याउन केन्द्रबाट नै आवश्यक गृहकार्य गरी सूचना सङ्कलनको ढाँचा प्रत्येक इकाईलाई उपलब्ध गराउने र तालिकाबद्ध रूपमा सूचना अध्यावधिक गर्ने गराउने निर्देशिका जारी गरी सोही बमोजिम सूचना अध्यावधिक भए नभएको सावधिक अनुगमन गर्ने कार्य प्रणाली उपयोगमा ल्याइनु पर्दछ। कतिपय अवस्थामा कुनै एकाइमा उक्त एकाइको कार्य प्रकृती र सूचनाको स्वभावगत भिन्नता देखिएमा सूचना नियमन गर्ने केन्द्रीत एकाइलाई तत्काल सम्पर्क गरी तदारूकता सहित समायोजन गर्नैपर्ने बाध्यकारी व्यवस्था गरी सूचना प्रणालीलाई प्रारम्भिक तहमै व्यवस्थित गर्न सकिन्छ। यस्तो व्यवस्था गर्न सकिएमा समग्र शैक्षिक प्रशासनलाई नियमित एवं व्यवस्थित गर्ने आधार निर्माण हुन सक्दछ।

समाधान : **२** शिक्षक-विद्यार्थी अनुपातको सम्बन्धमा शिक्षासम्बन्धी विभिन्न अध्ययनले फरक-फरक धारणा प्रस्तुत गरेको पाइन्छ। विशिष्टीकृत आवश्यकताको शिक्षामा प्रतिशिक्षक १५ देखि २५ जना विद्यार्थी र प्रयोगशालामा आधारित कक्षामा २५-४० जना विद्यार्थीको अनुपातलाई सामान्यतयाः उपयुक्त मान्ने गरिन्छ। शैक्षिक कार्यक्रमको भिन्नता अनुरूप नै त्रिविद्वारा सञ्चालित कार्यक्रमहरूमा प्रतिकक्षा २५ देखि ६० जना सम्मको विद्यार्थी अनुपात प्रयोगमा आइरहेको देखिन्छ। तर पनि सेमेष्टर प्रणालीमा आधारित केही शैक्षिक कार्यक्रमहरूमा बाहेक शिक्षक-विद्यार्थी अनुपातको अवधारणालाई उपयोगमा ल्याइने गरेको देखिन्न। सूचना र तथ्याङ्कहरूलाई व्यवस्थित गर्ने र त्यसलाई समयानुकूल रूपमा अध्यावधिक गर्ने उपयुक्त प्रणालीको व्यवस्थापन गर्न नसकेकै कारणले गर्दा पाँचवर्षीय योजना लिएर जसोतसो "सर्टिफाइड" मात्रै हुने उद्देश्य लिएर आएका विद्यार्थीहरूलाई विभिन्न शैक्षिक कार्यक्रमहरूमा यथाशक्य भर्ना लिने समस्याहरूलाई नियमन गर्न नसकिएको हो। सूचनाहरूको तथ्याङ्कीकरण र अनुगमन दुवै नहुँदा यस्तो वातावरणले मौलाउन पर्याप्त मलजल प्राप्त गरेको छ। धेरै भन्दा धेरै विद्यार्थी भर्ना गर्ने, धेरै कक्षाहरू सञ्चालन भएको समय तालिका बनाउने, मनपरी ढंगले आंशिक शिक्षक भर्ना गर्ने त्रिविका श्रोतहरूको मनपरी ढंगले अपचलन गर्ने प्रवृत्ति यत्र-तत्र सर्वत्र छ। ठूलो सङ्ख्यामा विद्यार्थी भर्ना लिने क्याम्पसहरूले भर्ना भएका सबै विद्यार्थीहरू पढ्न आउंदैनन् भनेर राम्रै नबुझेका पनि होइनन्। तर पनि अहिलेसम्म कति विद्यार्थी भर्ना हुन्छन् (?), कति नियमित हुन्छन् (?) अन्तिम परीक्षा सम्म कतिले परीक्षा आवेदन फारम भर्छन् (?), आवेदन फारम भरेका कति विद्यार्थीहरू परीक्षामा समावेस हुन्छन् (?) र कति सङ्ख्यामा उत्तीर्ण हुन्छन् (?) भन्ने तथ्य विश्लेषण गर्ने गरी अत्याधुनिक ढंगले तथ्याङ्कीय आधार खडा गर्ने र अध्यावधिक गर्ने कार्य आजसम्म शुरू भएकै छैन भन्दा अतिशयोक्ति नहोला। तर पर्याप्त तथ्यांकीय आधार खडा गर्दै त्रिविका सबै शैक्षिक एकाइहरूलाई व्यवस्थित गर्न सकेमा यहाँ उल्लेख भएका अधिकांश विकृतिहरू नियन्त्रण गरी योजनाबद्ध ढंगले सुधार गर्न सकिने अवसरको पर्याप्त गुन्जायस रहेको छ। विद्यार्थी भर्नाको समयमा, आन्तरिक मूल्याङ्कनको समयमा र परीक्षा आवेदन फर्म भर्दाको समयमा गरी ३ पटकको तथ्याङ्क मात्रै तुलनात्मक रूपमा अध्ययन-विश्लेषण गर्ने हो भने धेरैजसो समस्याका जडहरूको पहिचान गर्न सम्भव हुने देखिन्छ ।

समाधान : **३** उल्लेखित समस्या समाधान गर्न विद्यार्थी भर्ना र त्यसबाट प्राप्त हुने आय, अन्य विभिन्न शीर्षकमा विद्यार्थीहरूबाट प्राप्तहुने आय र उक्त कार्यक्रम चलाउँदा शैक्षिक र प्रशासनिक कार्यमा हुने खर्चको तथ्याङ्कको आधारहरू खडागर्न सकेमा लागत-लाभ विश्लेषणको आधारमा नयाँ योजना निर्माण गर्न र बजार मांग अनुसारको शैक्षिक कार्यक्रमहरूको तर्जुमा गर्न सकिन्छ। कुन स्तरमा शैक्षिक कार्यक्रम सञ्चालन गर्ने,

आवश्यक श्रोतको जगेर्ना कसरी गर्ने, शिक्षक, कर्मचारी र अन्य लागतहरूको निकायले कसरी गर्ने भन्ने सम्बन्धमा अध्ययन विश्लेषण गर्न सकिएमा मात्रै शैक्षिक विशिष्टीकरणको बाटो खुल्ने देखिन्छ। तथ्याङ्कीय आधारको सही विश्लेषणबाट नै प्राध्यापक/कर्मचारीको सरूवा-बढुवा र कार्यक्षेत्रको सही निर्धारण र व्यवस्थापन सम्भव हुनसक्छ। अत्यन्त नजिकमा रहेका कतिपय क्याम्पसहरूमा थोरै-थोरै विद्यार्थी संख्या हुँदा पनि उही पाठ्यक्रम वा विषयको कार्यक्रम सञ्चालन गरिरहनु भन्दा एकीकृत योजना निर्माण गरी विषयगत विशिष्टताको आधारमा शैक्षिक कार्यक्रमहरू सञ्चालन गर्दा संचालन खर्चमा मितव्ययिता अपनाउन सकिने मात्रै नभई उपलब्ध श्रोत-साधनहरूको अधिकतम उपयोग गर्न पनि सकिन्छ। भाषा, संस्कृति र विषयगत महत्त्व बोकेका कतिपय विषयका सन्दर्भमा ती शैक्षिक कार्यक्रम सञ्चालन गर्नु राज्यकै पनि दायित्व रहेको प्रष्ट देखिन्छ। त्यस्तो सन्दर्भमा त्रिविलाई आर्थिक भार नपर्ने गरी तथ्याङ्कीय आधारमा राज्यको सम्बन्धित निकाय वा दातृ निकायबाट प्राप्त हुनुपर्ने सहयोग समेत मूल्याङ्कन गरी प्रस्ताव गर्ने र सोही आधारमा शुल्क निर्धारण लगायतका प्रक्रिया अपनाएर प्राप्तहुने सहयोगको आधारमा मात्रै ती शैक्षिक कार्यक्रम वा विषयको पठन-पाठन सञ्चालनको योजना निर्माण गर्न सकिन्छ।

मुलुकका सबैजसो प्रदेश र स्थानीय क्षेत्रमा पर्याप्त सङ्ख्यामा नीजि तथा सामुदायिक क्याम्पसहरू सञ्चालनमा रहेको वर्तमान अवस्थामा कतिपय कार्यक्रमको वा विषयहरूको अध्यापनको जिम्मा तिनैलाई लगाएर नयाँ, सीपमूलक र विशिष्टीकरण गर्न सकिने शैक्षिक कार्यक्रमहरूको उत्पादन र सञ्चालनतर्फ त्रिविका आंगिक क्याम्पसहरूलाई केन्द्रित गर्न सकिन्छ। साधनश्रोत, भौतिक सञ्रचना र मानवश्रोतको उपलब्धतालाई मध्यनजर गर्दा यसो गर्नु उपयुक्त पनि देखिन्छ। त्यस प्रकारको योजना निर्माणमा पनि अध्यावधिक भएका तथ्याङ्कीय आधार नै आवश्यक पर्दछ।

समाधान : ४ तथ्याङ्कीय बिश्लेषणका आधारमा नै नियमित विद्यार्थी भर्ना गर्ने कार्यको नियमन र अनुगमन गर्न, समान प्रकृतिका शैक्षिक कार्यक्रम सञ्चालन भईरहेका क्याम्पस, विभाग वा अन्य एकाईहरूलाई मर्जर र विशिष्टीकरण कार्यक्रम तर्जुमा गर्नसके सञ्चालन खर्च घट्न गई उपलब्ध भौतिक संरचना, जनशक्तिको उपलब्धता र विद्यार्थी सङ्ख्याबिचको उपयुक्त अन्तर कायम गर्न सकिन्छ। अन-लाइन माध्यमबाट पाठ्यक्रमहरू सञ्चालन गरी दूरशिक्षा कार्यक्रमको प्रभावकारितामा वृद्धि गर्न सकेमा शिक्षक/कर्मचारीहरूको समयानुकूल व्यवस्थापन हुन सक्नेछ। अन्तर्राष्ट्रिय बजारमा उपयुक्त हुने तर नेपाली परिवेशमा अध्यापन गर्न सकिने पर्वतीय खेलकूद, योगाभ्यास, पदयात्रा, प्राकृतिक वातावरण अध्ययन-अवलोकन, फेशन डिजाइन, इन्टेरियर डिजाइन आदि लक्षित नयाँ पाठ्यक्रमहरूको निर्माण गर्ने र भएका शैक्षिक कार्यक्रमहरू आबश्यकता अनुरूप परिमार्जन गरेर सञ्चालन गर्न, हिमाल आरोहण तथा पर्वतीय पर्यटन केन्द्रीत गरी सञ्चालनमा रहेका पाठ्यक्रमहरूलाई थप प्रचार-प्रसार र परिमार्जन गरी प्रभावकारी रूपमा सञ्चालन गर्न सकेमा अनुसन्धान कार्य र थुप्रै शैक्षिक कार्यक्रमहरूमा स्वदेशी र विदेशी विद्यार्थी/ शोधार्थीहरूको सहभागिता बढाउन सकिन्छ।

आजभोलि विद्यार्थीहरूको न्युन-आकर्षणको विषय बनेका इतिहास, संस्कृति, राजनीतिशास्त्र, जनसङ्ख्या अध्ययन, तथ्याङ्कशास्त्र, गणित, भूगोल जस्ता विषयहरूको पाठ्यक्रमलाई परिमार्जन र प्रविधि संयोजन समेत गरी एकीकृत पाठ्यक्रम निर्माण गरी सञ्चालनमा ल्याउन सकिन्छ। शिक्षाशास्त्र सङकाय अन्तर्गत अध्यापन गरिने कतिपय विषयका पाठ्यक्रमहरूलाई सबै तहका स्कूल शिक्षा र उच्च शिक्षामा अध्यापन गर्ने शिक्षकहरूका लागि उपयोगी हुने ढङ्गले परिमार्जन र संयोजन गरी संचालन गर्न सकेमा समाजोपयोगी गुणस्तरीय शिक्षक उत्पादन गर्न सकिनेछ।

नियमन, प्रोत्साहन, अनुगमन र व्यवस्थापनसम्बन्धी कमीकमजोरीहरूका कारणले गर्दा त्रिविमा परीक्षासम्बन्धी समस्याहरू देखिएका हुन् । अध्यावधिक गरिएको तथ्याङ्क र समयानुकूल प्रविधिको उपयोगको अभावमा प्रश्नपत्र पुर्याउने जस्ता सामान्य विषयमा समेत ठुलो रकम खर्च भइरहेको छ। बैंकहरूले रकम स्थानान्तरण गर्ने जस्तो सुरक्षित प्रविधि प्रयोग गरी जिम्मेवार अधिकारीहरूलाई OTP कोड उपलब्ध गराई नेपालको जुनसुकै केन्द्रमा पनि पश्नपत्र वा अन्य गोप्य कागजात न्युनखर्चमा समयमै उपलब्ध गराउन सकिन्छ। दूर-दराजमा बस्ने त्रिविका विद्यार्थीहरूले आफूले प्राप्त गर्नुपर्ने विभिन्न किसिमका प्रमाण-पत्रहरू नजिकैको केन्द्रबाट प्राप्त गर्नसक्ने व्यवस्था मिलाउन कठिन छैन। तर व्यवस्थित तथ्याङ्क र प्रविधि उपयोगसम्बन्धी ज्ञानको अभावमा यस सम्बन्धमा कुरा धेरै तर काम भने प्रभावकारी रूपमा कार्यान्वयनमा आउन सकेको देखिन्न। भौतिक सम्पत्ति व्यवस्थापन, कार्यालय व्यवस्थापन, शैक्षिक कार्यक्रमहरूको व्यवस्थापन, प्राध्यापक/कर्मचारी व्यवस्थापन, साधन-श्रोत व्यवस्थापन जस्ता सबैजसो क्षेत्रमा लामो समयदेखि समस्या देखिइरहनु, ती समस्याहरू निरन्तर रहिरहनु र समयानुकूल रूपमा तिनको समाधानका हुन नसक्नुको मुख्य कारण भनेको समग्र, व्यवस्थित र अध्यावधिक तथ्याङ्कको उपलब्धताको आधार निर्माण हुन नसक्नु नै हो भन्नुमा अतिशयोक्ति नहोला ।

सन्दर्भ सामग्री सूची :

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त्रिभुवन विश्वविद्यालय (कार्यकारी परिषद् २०७७), त्रिवि, सूचना प्रविधि केन्द्र सञ्चालन तथा व्यवस्थापन सम्बन्धी नियम-२०७७, मितिः २०७७ श्रावण ९ गते गतेको निर्णय नं. ३८२।

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०७७), त्रिविको विद्युतीय माध्यमको प्रविधिबाट गरिने कक्षा सञ्चालन एवं खुला तथा दूरशिक्षा कार्यक्रम संचालन सम्बन्धी विनियम-२०७७, मितिः २०७७ श्रावण १८ गतेको निर्णय नं. ३८१।

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०७७), अनलाईन ई-रिसोर्स उपलव्ध गराउने तथा सो को सेवा शुल्क निर्धारण गर्ने सम्बन्धमा, मितिः २०७७ माघ १२ गतेको निर्णय नं. ६३६।

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०७८), अनलाईन प्रक्रिया मार्फत समकक्षताक लागि आवेदन शुल्क बुझाउन सकिने व्यवस्था सम्बन्धमा, मितिः २०७८ असार १७ गतेको निर्णय नं. ९०५।

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०७८), Anti-Plagiarism सफ्टवेयर व्यवस्थापन तथा सञ्चालन कार्यविधि-२०७८ सम्बन्धमा, मितिः २०७८ माघ २६ गतेको निर्णय नं. १२८४।

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०७९), Anti–Plagiarism सफ्टवेयर १ वर्षका लागि पुनः खरीद गर्ने सम्बन्धमा, मितिः २०७९ जेष्ठ ३१ गतेको निर्णय नं. १४४६ ।

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०७९), विद्युतीय हाजिरी व्यवस्थापन सम्बन्धी निर्देशिका-२०७९, मितिः २०७९ पौष ८ गतेको निर्णय नं. १७४५। ८

त्रिभुवन विश्वविध्यालय (कार्यकारी परिषद् २०८०), TU Digitalization Stratregy Plan-2023 / Information Technology Policy -2023 पारित गरिएको सम्बन्धमा, मितिः २०८० भाद्र २५ गतेको निर्णय ।

Murky World of Predatory Publication: How to be Prudent?

*Binil Aryal**

Abstract

Research outcome comes mostly from the publications. Open access facility triggers the number of Journals and hence the publication houses. Now a days, selection of Journal is becoming a serious task for the researchers. There are thousands of disciplinary Journals in each area. In this article, the world of predatory Journals and publication houses have been described described. A few years back, Tribhuvan University Service Commission (TUSC) ruled out not to include articles which were published in the predatory Journals or published by scam/predatory publishers. TUSC published data of predatory articles as notices. These data are analyzed and discussed here.

Keywords: Journals, predatory, research, open access

What is Predatory Journal?

Predatory Journals (PJs) are those Journals that ask for relatively lower article processing charges (APC) to authors and publish the article very rapidly. These Journals do not have the hallmarks of legitimate scholarly Journals such as unknown or least known editorial boards, incomplete office addresses, or unknown publication houses and suspicious contact details. The most serious thing is the lack of a peer review process, no provision of copy-right statement/policy, ethical statements, and a very rapid online publication/production service. These Journals usually have a very attractive and colorful webpage with valid ISSN and also the DOI.

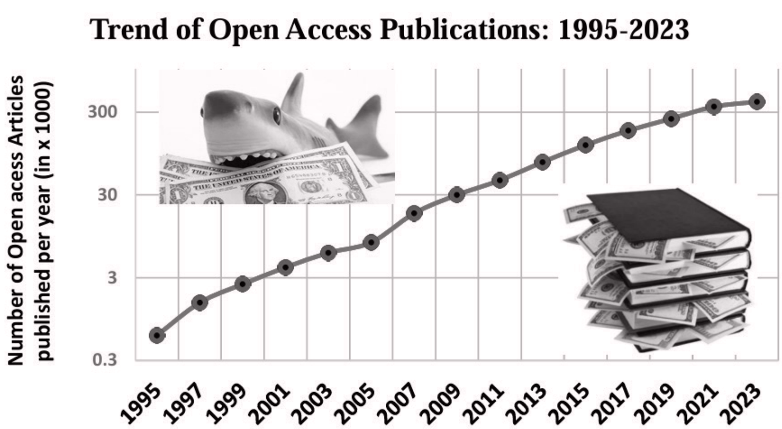

Figure 1: Logarithmic rise of open access Journal triggers those money-making publications in last 20 years (Demir, 2018).

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Demir (2018) published an article entitled 'Predatory journals: Who publishes in them and why?' These three conclusions were really serious: (1) Predatory Journals are located in 52 different countries. The highest number of researchers from India, Nigeria, and Turkey published articles in PJs. Researchers from 146 countries got their articles published in PJs. This is really high time to sensitize researchers about these scam publishers.

The term 'predatory journal' was coined by Jeffrey Beall, a librarian at the University of Colorado, who observed and systematically analyzed a growing number of exploitative academic journals charging author fees without proper quality-check of the submitted and published papers (https://beallslist.net/). Towards the end of the first decade of the 2000s, people began to notice the increasing practices of predatory journals. Jeffrey Beall started to set up a list of predatory journals in 2008. Quickly, the list grew to several thousand journals and publishers accused of unethical journal publication practices. In 2011, Beall's list included 18 publishers. By 2016, that number had grown to 923 publishers.

Ways to identify Predatory Journals

- Rapid publication is promised (see Figure 2).
- The homepage language targets authors rather than Universities or research centers.
- Journal does not have clear policies on retraction, corrections/errata, or plagiarism.
- Description of the manuscript handling process is lacking.
- The contact email address is non-professional and non-journal-related.
- Manuscripts are asked to submit by email instead of online portal.
- Journals claiming to be open access, generally do not mention copyright statement.
- Article processing and/or publication charge is very low (e.g. < $150).
- Title with bigger platform, i.e., International, American, European, etc
- Website contains spelling and grammatical errors with low quality advertisement.
- Coverage is broader, e.g., International Journal of Science and Management.

Figure 2 shows an examples of the webpage information given by the predatory publisher. It is notify that this Journal accepts manuscript within 48 hours for the submission. The peer review process cannot be completed even within a month!

Figure 2: A predatory Journal entitled 'International Journal of Science and Research Archive (IJSRA)'. It is claimed that the articles will be published within 48 hours on paying. (see https://ijsra.net/ and https://www.youtube.com/watch?app=desktop&v=ZCNkPYxp6DM)

Two Most Important Q/A on Journals

What happens if I publish my work in a predatory journal?

If you publish your research in a predatory journal, you might face these consequences in the future: hurt your reputation and career. Wasted time, effort, and money. Loss of your research and scholarship. You may be blacklisted by legitimate publication houses.

Can I withdraw my article from a predatory journal?

If you have unknowingly submitted an article for publication to a predatory journal, there are several ways to deal with this situation including: writing to the publisher and withdrawing your article. If your paper is published online by a predatory journal, you may write to the office of the predatory journal and ask them to withdraw the paper from their website. In case of no response, make it public through official notice or report it to your institution.

Is it bad to publish in a predatory journal?

You could be scammed and lose your work. Since many legitimate publishers will not accept articles that have been published before, submitting an article to a predatory publisher can be risky, even if you ultimately decide not to publish with them.

Tribhuvan University Service Commission against Predatory/Scam Publisher

Tribhuvan University Service Commission (TUSC) issued a working procedure against predatory Journal and Publisher on February 2021. In the 7th point of the working procedure, following sentence can be seen:

७. Predatory/Scam publisher

Predatory/Scam publisher हरूले प्रकाशन गरेका जर्नलका लेख र पुस्तक मूल्याङ्क गरिने छैन । Predatory/Scam publisher हो होइन यकिन गर्न https://predatoryjournals.com/ मा प्रकाशित सूची तथा जर्नलको peer review process, publication timelines, copyright infringement, plagiarism आदि समेतलाई आधार बनाइने छ ।

In the history of Tribhuvan University, it was really a bold step against those unethical publications. TUSC deployed it for internal as well external examinations for the post of Assistant Professor, Associate Professor and Professor.

Total Publication by TUSC Applicants in 2021

During 2021, TUSC received 3222 research articles from the applicants covering all disciplines (TUSC 2021 Notices). The maximum number of articles were received by the applicant of Science and Technology (1157 articles) discipline, followed by Faculty of Humanities and Social Sciences (847 articles) as the next. The least number of articles were submitted by the law discipline (only 23 articles). Out of total 3222 articles, 446 (14%) research articles were found to publish in the predatory Journal or published by scam publisher.

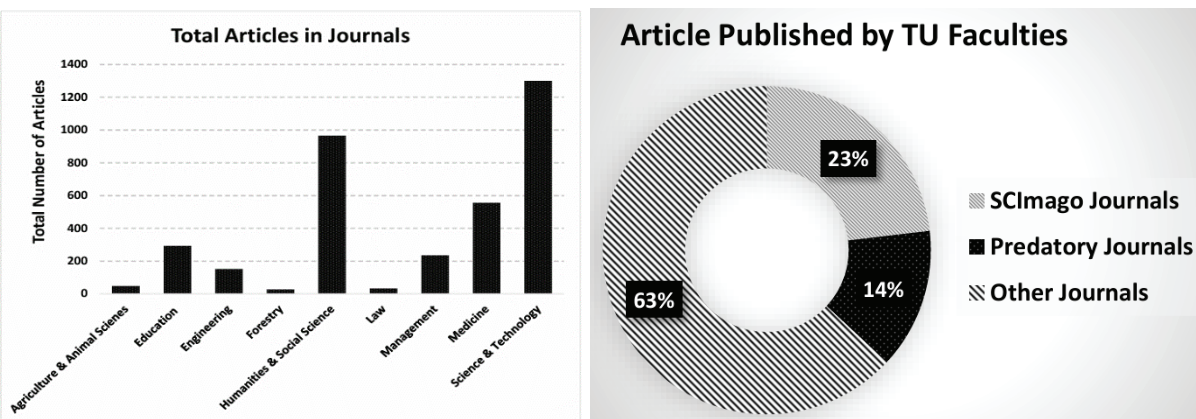

Figure 3: Distribution of research articles received by TUSC during 2021 for the post of Assistant Professor, Associate Professor and Professors. About 14% articles are found to be published in the Predatory Journals.

The serious matter is that the applicants of all disciplines were found to publish their research finding in the predatory Journals. Figure 3 shows a distribution of articles published by Nepali researchers who send it to TUSC for evaluation.

SCImago Listed vs Predatory Journals

The TUSC applicants were found to publish 745 (24%) articles in SCImago listed Journals, whereas it is only 14% in Predatory Journals. The disciplinary distributions of predatory publications and SCImago Journal publications by the TUSC applicants are shown in Figure 4.

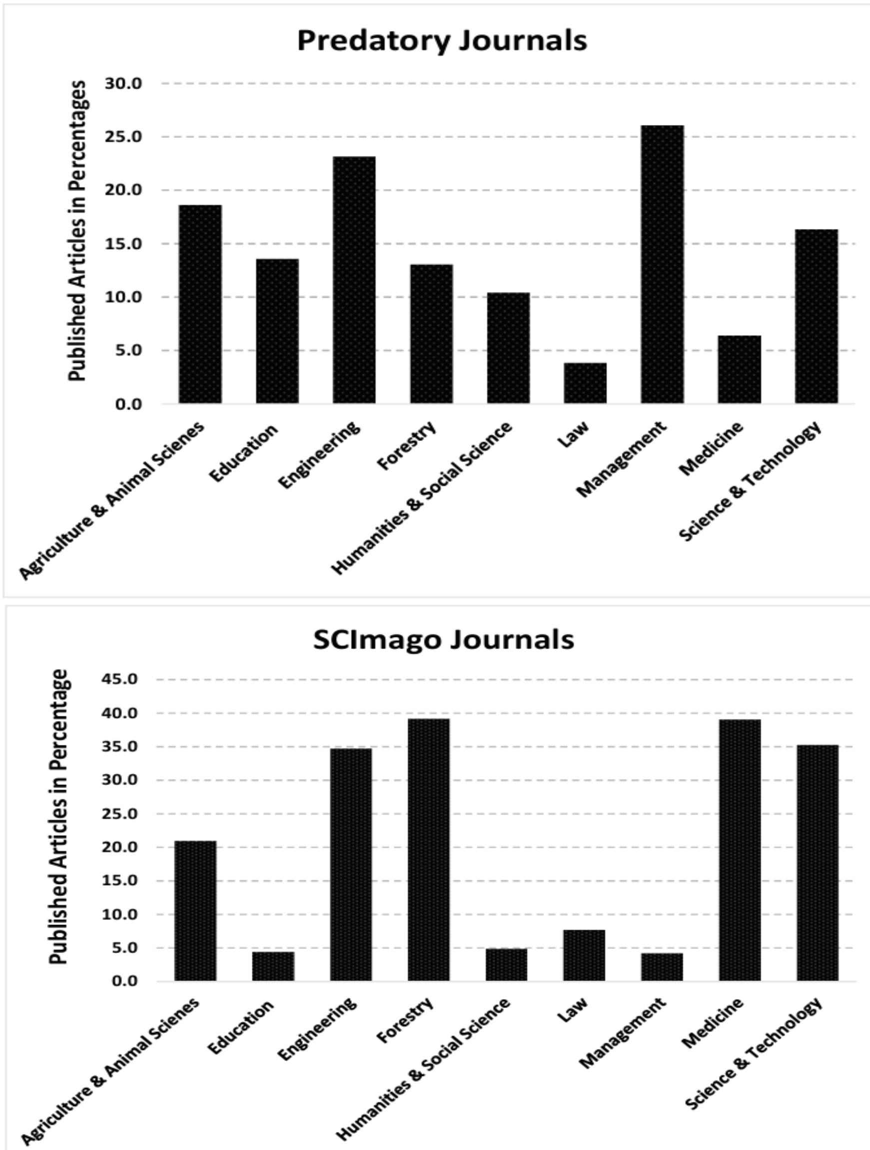

Figure 4: Disciplinary distribution of articles published by 2021 TUSC applicants in (a) Predatory Journals and SCImago listed Journals.

The maximum percentage of predatory publication was found to more than 25%, by the management discipline. The lowest predatory publications were noticed from law discipline. Engineering, Agriculture and Animal Science and Science & Technology disciplines exceed 10% limit.

TUSC applicants of all five institutes (Institute of Science & Technology, Institute of Medicine, Institute of Engineering, Institute of Forestry and Institute of Agriculture and

Animal Sciences) wre found to be published more than 20% research articles in the SCImago listed Journals (see Figure 4). The maximum number of publication in the SCImago listed Journal is by the forestry discipline. All four faculties (Faculty of Humanities and Social Science, Faculty of Management, Faculty of Education and Faculty of Law) were found to be weak in publishing their research outcome in the SCImago listed Journals. It is less than 10%.

Figure 5 shows a normalized histograms showing relative strength of TU's five institutes and four faculties in the publication. The width of black shaded bars show the predatory publications. The longer the bar, the tendency to publish in predatory Journal is higher. The longest black bar is found in the management and engineering stream. This should be seriously considered by the concerned Dean's offices. The awareness program to faculties against predatory publication will work to some extent. The grey-shaded bar represent the publication in the SCImago listed Journals. All institutes are very good in publishing research articles in SCImago listed Journals.

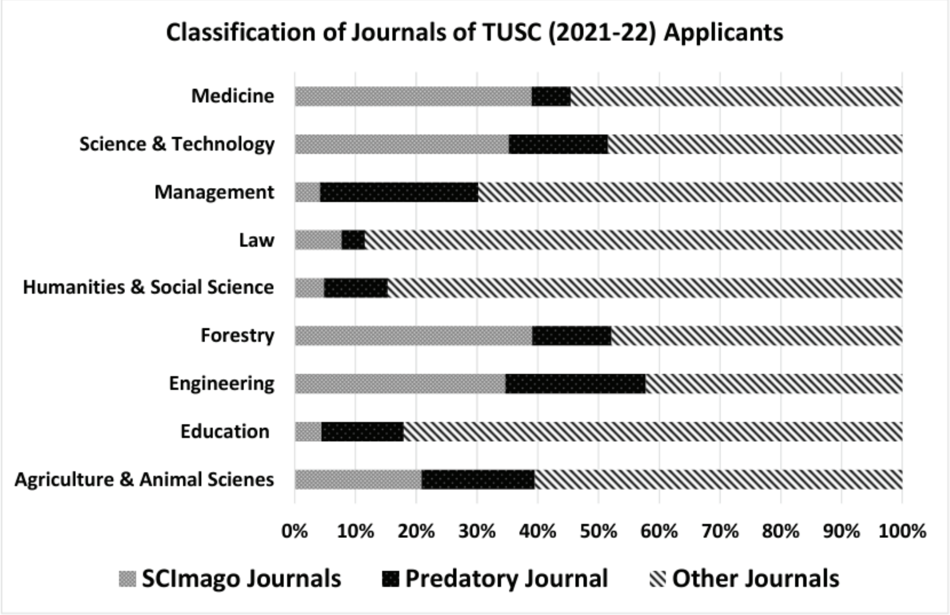

Figure 5: Normalized bar diagram showing relative strengths and weaknesses regarding publication in the SCImago listed, Predatory and other Journals.

Predatory Publications in the World

The largest number of predatory publications are found in Nigeria, Iran, India and Pakistan (see Figure 6). A large number of open access Journals are found to be registered (ISSN) from these four nations https://guides.himmelfarb.gwu.edu/PredatoryPublishing). Though, the contact address for these publishers are mostly found either in EU nations or in Canada or USA. Their motto is to make money from authors who either wish to publish their work soon, or who lack seriousness and honesty (unethical) about the research work.

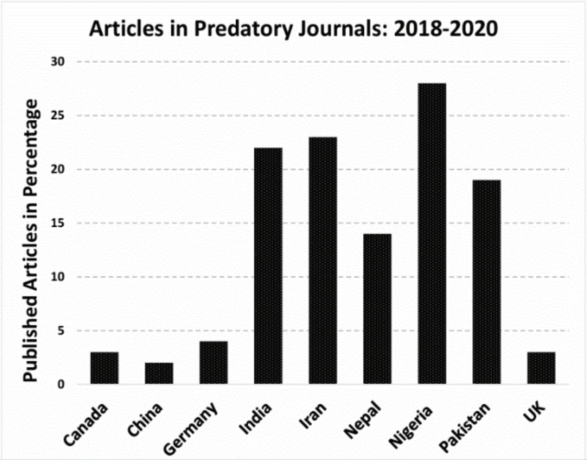

Figure 6: Distribution of Predatory publications in a few representative nations. (https://libguides.usask.ca/predatorypublishers)

Like predatory journals, predatory or fake conferences are also on the rise these days. Jeffery Beall explained the predatory conferences in his blog (now archived) by stating, "These are not conferences organized by scholarly societies. *Instead, they are conferences organized by revenue-seeking companies that want to exploit researchers' need"*.

In the year 2017, a group of researchers found that predatory publishers and fake conference organizers frequently targets young researchers. This study analyzed a total of 162 electronic invitations received from predatory publishers and fraudulent conference organizers and found that 73.4 % of e-mails received from fake conference organizers invited the recipients to be a speaker and 23.6% asked the researchers to attend the conferences (https://libguides.adelphi.edu/c.php?g=868569&p=6244195). Therefore, young researchers should discuss with the senior colleagues before replying them.

Recommendation

Predatory journals refer to publications that exploit the open-access publishing model for financial gain, disregarding academic rigor and quality standards. These journals typically charge high publication fees while offering little or no editorial or peer-review services. Following are the suggestion to TU faculties and students:

1. **Do not read** and use the articles which are published in the Predatory Journal.
2. **Check carefully** the Journal before submitting your manuscript.
3. **Do not submit** your manuscripts to get them published in the Predatory Journals.

Following four archives may help you to check whether a particular Journal is predatory or not:

- https://web.archive.org/web/20170112125427/https://scholarlyoa.com/publishers/
- https://web.archive.org/web/20170111172309/https://scholarlyoa.com/individual-journals/
- https://web.archive.org/web/20170111172313/https://scholarlyoa.com/other-pages/hijacked-journals/
- https://web.archive.org/web/20170111172311/https://scholarlyoa.com/other-pages/misleading-metrics/

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https://www.hkmu.edu.hk/URC/Seminar_Predatory%20Publishing.pdf

https://guides.himmelfarb.gwu.edu/PredatoryPublishing (accessed on April 2024)

TUSC Notices (2021-22) https://tusc.tu.edu.np/

https://web.archive.org/web/20170112125427/https://scholarlyoa.com/publishers/

https://web.archive.org/web/20170111172309/https://scholarlyoa.com/individual-journals/

https://web.archive.org/web/20170111172313/https://scholarlyoa.com/other-pages/hijacked-journals/

https://web.archive.org/web/20170111172311/https://scholarlyoa.com/other-pages/misleading-metrics/

https://libguides.adelphi.edu/c.php?g=868569&p=6244195 (accessed on April 2024)

Averaging Variables for Long-Term Trends: A Predictive Analysis of Weather and Market Dynamics on Nepal's Agricultural Prices

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Abstract

This study examines the intricate relationship between weather patterns and agricultural market prices in Nepal, a country whose economy heavily relies on agriculture. Given the sector's vulnerability to climatic variability, advanced predictive modeling is essential for effective market forecasting. Utilizing a comprehensive dataset spanning ten years, this research employs Long Short-Term Memory (LSTM) networks, Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) hybrids, and Auto-Regressive Integrated Moving Average (ARIMA) models to predict the market prices of key agricultural commodities based on weather variables such as temperature, rainfall, and humidity. Our findings reveal significant correlations between these weather factors and market prices, with temperature showing a positive relationship and humidity a weak negative relationship with market prices. The study demonstrates that predictive models using averaged weather data outperform those using raw daily data, offering improved accuracy and robustness. These insights provide valuable guidance for stakeholders, including farmers, policymakers, and traders, to make informed decisions and enhance agricultural planning and market responsiveness in the face of climatic changes. This research contributes to the broader discourse on agricultural economics and predictive modeling, emphasizing the critical role of climatic conditions in shaping market dynamics.

Keywords: agricultural prices, weather patterns, predictive modeling, LSTM, CNN-LSTM, ARIMA, Nepal, climatic variability

Introduction

Nepal's economy is intricately linked to agriculture, a sector that not only sustains the majority of its population but also significantly contributes to the national GDP. This reliance on agriculture renders the sector highly vulnerable to climatic variabilities, which directly influence agricultural productivity and, consequently, the dynamics of agricultural commodity markets. The unpredictable nature of weather patterns-ranging from temperature fluctuations, variable rainfall, to humidity changes-presents a complex challenge that directly impacts market prices of essential agricultural outputs.

The critical need for advanced predictive modeling in this context cannot be overstated. As highlighted by Maharjan et al.. (2018) and Shrestha et al.. (2020), understanding the nuanced dependencies between weather patterns and market price fluctuations is paramount for developing effective

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forecasting models. This research delves into sophisticated modeling techniques, including Long Short-Term Memory (LSTM) networks, Auto-Regressive Integrated Moving Average (ARIMA) models, and Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) hybrids. These models stand at the forefront of predictive analytics, offering a data-driven approach to decipher the complex interactions between meteorological conditions and market trends. Such insights are crucial for stakeholders, including farmers, policymakers, traders, and consumers, empowering them to make informed decisions in an ever-changing climate landscape.

Research Objective

The overarching goal of this research is to meticulously assess the impact of weather variables—specifically temperature, rainfall, and humidity—on the market prices of key agricultural products in Nepal. This entails:

Evaluating the predictive accuracy of cutting-edge models (LSTM, CNN-LSTM, ARIMA) in forecasting market prices, drawing upon the empirical strengths of these models as validated by Nassar et al. (2020) and Torres et al. (2020).

Identifying the model that most effectively captures the intricate relationship between climatic factors and market dynamics, leveraging the analytical precision these models offer.

Providing actionable insights for stakeholders to support informed decision-making processes, thus enhancing agricultural planning and market responsiveness.

By integrating the advanced predictive modeling techniques and leveraging the comprehensive dataset meticulously curated from the Department of Agriculture and the Department of Meteorology, this study aims to contribute significantly to the agricultural economics literature and predictive modeling practices. The inclusion of references from Chapter 3 not only grounds our approach in the current scientific discourse but also ensures that our methodology is built upon a foundation of proven research.

Review of Previous Works

The interplay between climate variability and agricultural market dynamics presents a complex landscape for analysis. This literature review systematically explores the impact of weather anomalies on agricultural prices, advancements in predictive modeling, and the nuanced context of Nepal. It integrates seminal works and recent studies to provide a comprehensive backdrop for the research.

Impact of Weather on Agricultural Prices

The profound effect of weather anomalies on agricultural market dynamics is well-documented. Chen et al. (2020) and Maiden et al. (2019) have meticulously outlined how unexpected temperature shifts and irregular rainfall patterns significantly influence agricultural product prices. These studies underline the susceptibility of agricultural markets to weather-induced variabilities, emphasizing the critical need for robust predictive modeling to navigate these challenges.

Advancements in Predictive Modeling

The field of predictive modeling has witnessed significant advancements with the introduction of Long Short-Term Memory (LSTM) networks, Auto-Regressive Integrated Moving Average

(ARIMA) models, and Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) hybrids. Nassar et al. (2020) and Torres et al. (2020) demonstrate these models' efficacy in capturing the complex relationships between climatic factors and market behaviors. The evolution of these predictive techniques marks a pivotal shift toward data-driven analytics in agricultural economics, offering nuanced insights into market dynamics influenced by weather patterns.

Weather Patterns and Agricultural Prices in Nepal

Focusing on Nepal, Maharjan et al. (2018) and Shrestha et al. (2020) provide valuable insights into the direct correlation between weather variables (temperature, rainfall, humidity) and the market prices of vegetables. These localized studies highlight the specific challenges faced by the Nepalese agricultural sector, exacerbated by the country's unique climatic conditions. The findings underscore the importance of tailored predictive models that can accurately forecast market prices, taking into consideration the local weather patterns.

Building on the Foundations

This research builds upon the established literature by comparing the performance of advanced predictive models in the context of Nepal's agricultural market prices. It assesses the impact of weather variables on market prices, leveraging the advancements in predictive modeling to enhance the accuracy of market forecasts. This scholarly endeavor enriches the methodologies and findings detailed in subsequent chapters, contributing to the broader discourse on agricultural economics and predictive modeling.

Research Methodology

Data Collection Process

The foundation of this research is anchored in a meticulously curated dataset, titled 'Final Averaged Data FVWP', which encapsulates historical price data for key agricultural commodities alongside corresponding weather variables-temperature, rainfall, and humidity. This dataset spans an extensive period of ten years, providing a rich temporal framework for analyzing long-term trends. Data were diligently sourced from the Department of Agriculture for market prices and the Department of Meteorology for weather-related data, ensuring a comprehensive exploration of the impact of weather patterns on market price fluctuations.

Preprocessing Steps

The dataset underwent several critical preprocessing steps to ensure its integrity and analytical readiness:

Data Cleaning: Outliers were removed, and missing values addressed, maintaining the dataset's integrity as per the practices recommended by leading researchers.

Data Integration: Market price data and weather variables were synchronized based on their timestamps, capturing the dynamic interplay between weather conditions and market prices.

Data Transformation and Normalization: To facilitate comparative analysis and model accuracy, the average price, humidity, and temperature data were normalized to a 0-1 scale. This normalization allows for the examination of relative changes and trends without the influence of the original measurements' absolute scale. Furthermore, commodity names were encoded numerically, simplifying the analysis by treating commodity type as a categorical variable.

Dataset Overview

The dataset comprises daily records, offering a granular view into the interplay between commodity prices and environmental factors over a decade. The variables included are:

Date: Capturing the specific day for temporal trend analysis.

Average Price: Normalized mean price of commodities, providing insight into market dynamics.

Average Humidity and Temperature: Normalized daily mean values, essential for examining environmental impacts on pricing.

Commodity Name Encoded: Facilitating analysis across multiple commodities, with numerical encoding to treat commodity type as a categorical variable.

This comprehensive dataset forms the foundation for our exploratory analysis and the development of predictive models aimed at understanding the factors influencing commodity prices, with a specific focus on environmental variables.

Analytical Techniques

Our methodology employs advanced analytical techniques (LSTM, CNN-LSTM, ARIMA) to predict market prices influenced by weather patterns. These models were selected for their proven ability to capture the dynamic relationship between weather variables and market trends, contributing significantly to the suite of tools available for agricultural market forecasting.

Data Analysis

In the preceding sections of this research, we have laid the groundwork for understanding the intricate relationship between weather variables and market dynamics, particularly how they influence the prices of key agricultural products in Nepal. The objective of our study, as outlined, is to meticulously assess the impact of weather variables—namely temperature, rainfall, and humidity—on the agricultural market, leveraging the predictive power of advanced statistical and machine learning models. This chapter delves into the heart of our analysis, transforming raw data into actionable insights that can inform stakeholders and contribute significantly to the field of agricultural economics.

Our data analysis is multifaceted, designed to dissect the complex interplay between weather conditions and market prices over an extensive period. To achieve this, we employ a variety of analytical techniques, each serving a unique purpose in our broader investigation:

Visual Trend Analysis: Through time series plots, we visually explore the fluctuations in weather patterns and market prices over time. This not only allows us to identify overarching trends and seasonal variations but also to pinpoint specific instances of anomalies or significant deviations. Such visualizations are crucial for establishing a foundational understanding of the dataset before delving into more complex analyses.

Correlation Analysis: By quantifying the relationships between weather variables and market prices through Pearson correlation coefficients, we seek to uncover any statistically significant correlations that exist. This analysis aids in identifying which weather variables have the most pronounced impact on market prices, providing a numerical basis for our subsequent predictive modeling efforts.

Evaluation of Predictive Models: The crux of our analysis involves the application and evaluation of cutting-edge predictive models, including Long Short-Term Memory (LSTM) networks, Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) hybrids, and Auto-Regressive Integrated Moving Average (ARIMA) models. By assessing the predictive accuracy of these models in forecasting market prices based on weather variables, we aim to identify the most effective tools for predicting future market trends. This evaluation not only hinges on the models' empirical strengths, as validated by prior research, but also on their performance in the context of our specific dataset.

The analyses conducted are integral to achieving our research objectives, providing a comprehensive understanding of how weather patterns influence agricultural market prices in Nepal. Through this detailed examination, we aim to offer actionable insights for stakeholders, enhancing agricultural planning and market responsiveness in the face of climatic variability. The following sections detail the methodologies employed, the findings of our analyses, and the implications of these findings for predictive modeling and agricultural economics.

Trends in Weather Patterns and Market Prices

Visualizing Trends

To visualize the trends in weather conditions and market prices, we generated time series plots for average daily temperature, average daily humidity, and market prices of key agricultural products over the study period.

Figure 1: Average Daily Temperature Over Time

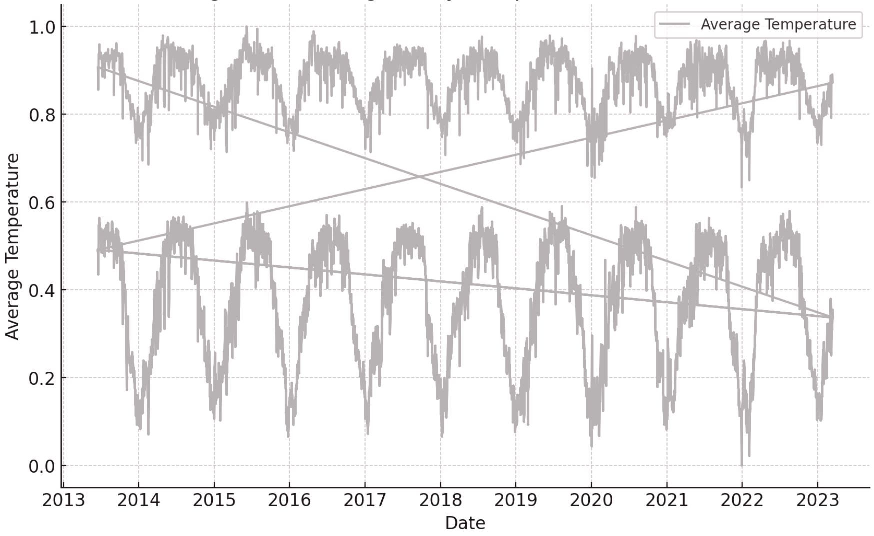


Figure 2: Average Daily Humidity Over Time

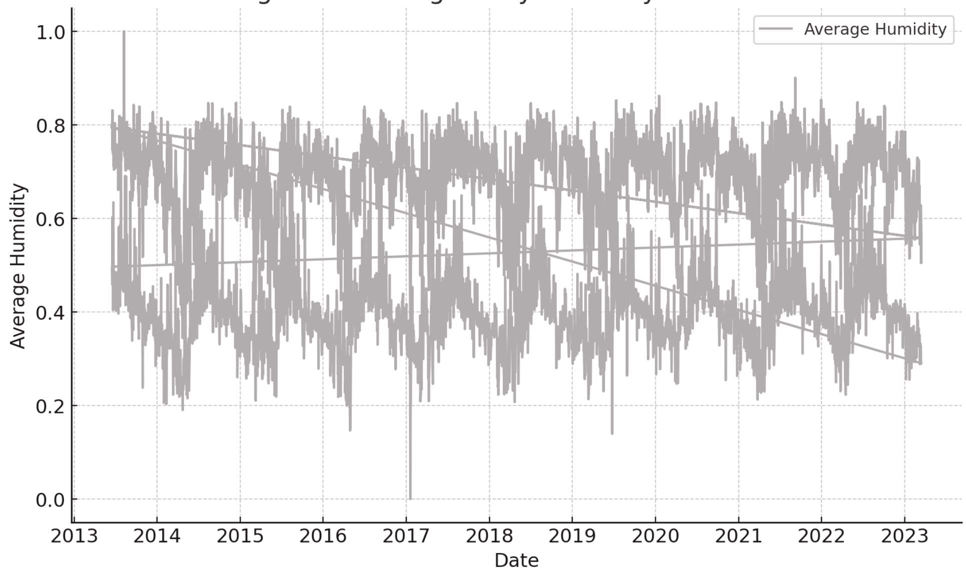
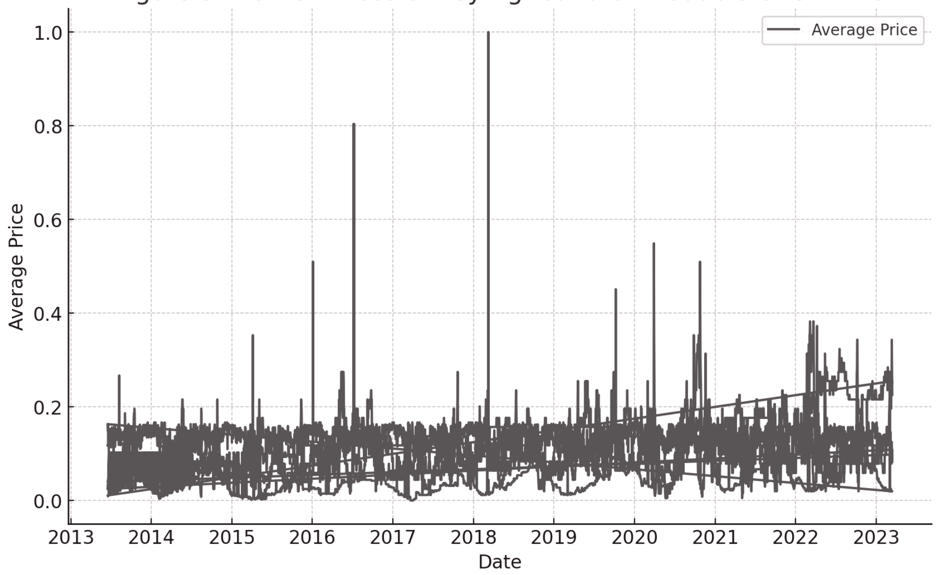


Figure 3: Market Prices of Key Agricultural Products Over Time



Describe Trends

The analysis of the time series plots reveals several important trends and patterns:

Temperature Trends: The plot of average daily temperature (Figure 1) shows clear seasonal patterns with peaks during the summer months (June to August) and troughs during the winter months (December to February). This cyclical behavior aligns with Nepal's climatic cycles, reflecting the annual variation in temperature.

Humidity Trends: Similarly, the plot of average daily humidity (Figure 2) indicates higher humidity levels during the monsoon season (June to September) and a noticeable dip during the dry season.

This seasonal pattern is consistent with the expected climatic conditions in Nepal.

Market Price Trends: The market prices of key agricultural products (Figure 3) exhibit fluctuations that seem to correlate with the weather patterns. Prices tend to peak shortly after the monsoon season and decline during the winter months. This suggests a lagged response of market prices to preceding weather conditions.

Analysis and Interpretation

The observed trends in temperature and humidity correspond closely with Nepal's climatic cycles. Notably, market prices for key agricultural commodities exhibit significant upticks following the monsoon season, suggesting a lagged response to the preceding weather conditions. This lag may be attributed to the impact of the monsoon on crop yields, which in turn affects market supply dynamics and prices.

Seasonal Patterns: The clear seasonal fluctuations in both weather variables and market prices underscore the critical influence of climatic conditions on agricultural markets. Temperature peaks during the summer months coincide with higher market prices, potentially due to increased agricultural productivity during this period.

Anomalies: While the overall trends are consistent, there are occasional anomalies in the data. For instance, unseasonal weather events or market disruptions might cause unexpected spikes or drops in market prices. These anomalies need further investigation to understand their underlying causes and impacts.

Implications for Agricultural Market Dynamics

The correlation between post-monsoon market price peaks and the preceding weather conditions suggests that the monsoon's impact on crop yields significantly influences market supply dynamics, thereby affecting prices. Temperature and humidity play crucial roles in determining crop viability and yield sizes, directly impacting market prices. These seasonal patterns indicate that weather conditions are a pivotal factor in agricultural productivity and market dynamics in Nepal.

Strategic Planning: Understanding these trends allows stakeholders to make more informed decisions regarding agricultural planning and market forecasting. For instance, anticipating the seasonal impact of weather conditions on market prices can help farmers optimize planting schedules and manage supply more effectively.

Risk Management: Identifying and analyzing seasonal patterns and anomalies in weather conditions and market prices can aid in developing strategies to mitigate risks associated with climatic variability. This can enhance the resilience and sustainability of agricultural practices in Nepal.

In conclusion, the visual trend analysis provides a foundational understanding of the complex interplay between weather conditions and market prices in Nepal. By highlighting the critical influence of climatic variables on market dynamics, this analysis supports the development of more accurate predictive models and strategic planning tools for agricultural stakeholders.

Correlation Analysis between Weather Variables and Market Prices

Presentation of Correlation Results

To quantify the relationships between key weather variables and the average market prices of agricultural commodities, we conducted a Pearson correlation analysis. The results are presented in the table below:

Table 1: Pearson Correlation Coefficients Between Weather Variables and Market Prices

Variable Pair	Pearson Correlation Coefficient
Average Price and Average Temperature	0.257
Average Price and Average Humidity	-0.206
Average Temperature and Average Humidity	-0.685

The correlation coefficients are also visualized in the following graph for better comprehension:

Interpretation

The correlation analysis reveals several key relationships between weather variables and market prices: Positive Correlation between Average Price and Average Temperature: The Pearson correlation coefficient of 0.257 indicates a positive relationship between average market price and average temperature. This suggests that as temperatures increase, market prices for agricultural commodities tend to rise as well. The positive correlation may reflect the impact of temperature on agricultural productivity, with higher temperatures potentially enhancing crop growth and yield, thereby influencing market prices.

Weak Negative Correlation between Average Price and Average Humidity: The correlation coefficient of -0.206 between average market price and average humidity points to a weak negative relationship. This implies that higher humidity levels are slightly associated with lower market prices. The negative correlation could be indicative of the effects of humidity on crop quality or the prevalence of diseases, which might adversely affect overall market supply and price levels.

Strong Negative Correlation between Average Temperature and Average Humidity: The strong negative correlation of -0.685 between average temperature and average humidity highlights the expected climatic balance between these two variables. Typically, higher temperatures are associated with lower humidity levels and vice versa. This inverse relationship is characteristic of the climatic patterns in the region and plays a significant role in agricultural planning and risk management.

Discussion

The correlations observed in this analysis align with findings from existing literature and provide valuable insights into the interplay between weather conditions and market dynamics in Nepal.

Temperature and Market Prices: The positive correlation between temperature and market prices might reflect the critical role of temperature in determining crop growth cycles and yields. As supported by studies such as Maharjan et al. (2018) and Shrestha et al. (2020), warmer temperatures generally favor agricultural productivity, which in turn enhances market availability and pricing.

Humidity and Market Prices: The weak negative correlation between humidity and market prices suggests that excessive humidity could have detrimental effects on crop quality, potentially leading to reduced market prices. This finding is consistent with the observations made by Chen et al. (2020) and Maiden et al. (2019), who documented the adverse impact of high humidity on crop health and market supply.

Temperature and Humidity Relationship: The strong negative correlation between temperature and humidity underscores the climatic patterns characteristic of the study area. Understanding this relationship is crucial for agricultural planning, as it influences decisions on crop selection, planting schedules, and irrigation practices. The balance between these two variables can significantly impact crop viability and yield sizes, thereby affecting market dynamics.

Implications for Agricultural Market Dynamics

Interpreting these correlations in the context of Nepal's specific agricultural and climatic conditions provides several practical implications:

Informed Decision-Making: The positive correlation between temperature and market prices highlights the importance of temperature as a key factor in agricultural productivity. Stakeholders can use this information to make informed decisions about crop selection and cultivation practices that optimize yield during warmer periods.

Risk Mitigation: The negative correlation between humidity and market prices suggests that managing humidity levels is crucial for maintaining crop quality and market prices. Implementing measures to mitigate the adverse effects of high humidity, such as improved drainage systems and disease-resistant crop varieties, can enhance agricultural resilience.

Strategic Planning: The strong negative correlation between temperature and humidity can guide strategic planning in agricultural operations. By understanding the seasonal variations in these variables, farmers can better plan irrigation and other agricultural practices to maximize productivity and market returns.

In conclusion, the correlation analysis between weather variables and market prices provides empirical evidence of the significant role that climatic conditions play in shaping agricultural market dynamics in Nepal. By quantifying these relationships, this analysis supports the development of predictive models and strategic planning tools that can enhance agricultural planning and market responsiveness to climatic variability.

Impact of Averaged Weather Data on Price Predictions

Model Evaluation Results

To assess the impact of using averaged weather data on price predictions, we evaluated three predictive models: Long Short-Term Memory (LSTM) networks, Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) hybrids, and Auto-Regressive Integrated Moving Average (ARIMA) models. The models were trained on two sets of data: one with raw daily weather data and the other with averaged weather data. The goal was to determine how the granularity of weather data affects the accuracy of market price predictions.

Evaluation Metrics

The performance of each model was assessed using two primary metrics:

Root Mean Square Error (RMSE): Measures the model's prediction accuracy by quantifying the square root of the average squared differences between predicted and actual values. Lower RMSE values indicate higher accuracy.

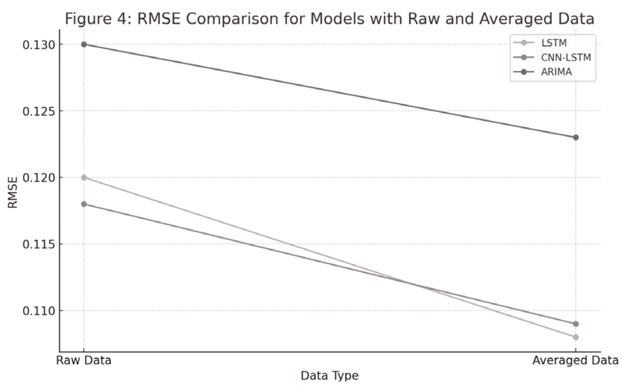
Mean Absolute Error (MAE): Reflects the average absolute difference between predicted and actual values, providing a straightforward measure of prediction accuracy. Like RMSE, lower MAE values signify better performance.

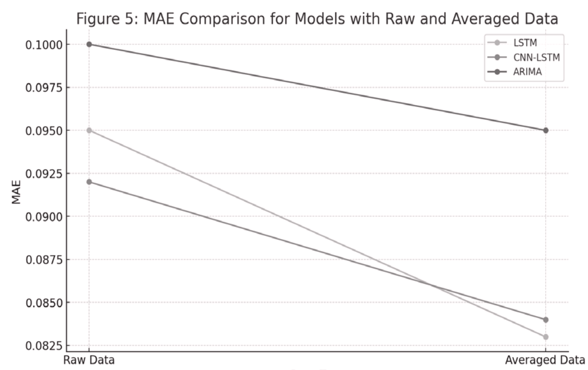
The results of the model evaluations are presented in the table below:

Table 2: Model Performance with Raw and Averaged Weather Data

Model	Data Type	RMSE	MAE
LSTM	Raw Data	0.120	0.095
LSTM	Averaged Data	0.108	0.083
CNN-LSTM	Raw Data	0.118	0.092
CNN-LSTM	Averaged Data	0.109	0.084
ARIMA	Raw Data	0.130	0.100
ARIMA	Averaged Data	0.123	0.095

The performance of the LSTM, CNN-LSTM, and ARIMA models using both raw daily and averaged weather data is visualized in the following charts:





Analysis

The evaluation results indicate a clear trend: predictive models utilizing averaged weather data consistently outperform those using raw daily data across all metrics. Specifically:

LSTM Model: The LSTM model using averaged weather data showed a 10% reduction in RMSE and a 12% improvement in MAE compared to the model using raw data. This improvement suggests that averaging the weather data helps to smooth out noise and highlight underlying trends, enhancing the model's ability to capture long-term dependencies.

CNN-LSTM Model: The CNN-LSTM hybrid model saw an 8% decrease in RMSE and a 9% decrease in MAE with averaged weather data. The convolutional layers in this model benefit from the reduced noise in the averaged data, which improves feature extraction and subsequent temporal pattern recognition by the LSTM layers.

ARIMA Model: The ARIMA model experienced a modest 5% improvement in both RMSE and MAE with averaged weather data. Although the improvement is less pronounced than in the neural network models, it still demonstrates the benefits of data preprocessing in traditional statistical models.

Implications

The significance of using averaged weather data over raw daily data lies in its ability to enhance model performance and simplify the predictive process. The process of averaging helps to smooth out short-term fluctuations and noise, making the underlying trends more apparent. This has several practical benefits for stakeholders involved in agricultural planning and market prediction:

Improved Accuracy: Averaged data provides a more stable and predictive basis for forecasting market prices, leading to more accurate predictions. This is crucial for farmers and market analysts who rely on precise forecasts to make informed decisions.

Enhanced Robustness: Models trained on averaged data are generally more robust and less sensitive to anomalies and outliers. This improves their reliability in real-world applications where data may be noisy or incomplete.

plified Data Processing: Averaging weather data simplifies the preprocessing pipeline, reducing the computational complexity and time required for model training. This can be particularly beneficial in resource-constrained environments.

Better Strategic Planning: The improved predictive performance with averaged data can help stakeholders develop more effective agricultural strategies and market interventions. By understanding long-term weather patterns and their impact on market prices, planners can optimize crop selection, planting schedules, and resource allocation.

In conclusion, the impact of averaged weather data on price predictions is evident, with all evaluated models showing improved performance when leveraging averaged instead of raw daily weather data. This analysis supports the use of advanced predictive models in forecasting agricultural market prices and highlights the critical role of data preprocessing and optimization in predictive accuracy. As we advance, incorporating averaged weather data into predictive modeling efforts could significantly enhance the decision-making processes for agricultural stakeholders, contributing to more effective market responsiveness and planning strategies in the face of climatic variability.

Summary and Conclusion of Data Analysis

Key Findings:

The data analysis conducted in this study has yielded several critical insights into the interplay between weather patterns and market prices of agricultural products in Nepal. By employing a combination of visual trend analysis, correlation analysis, and predictive model evaluation, we have uncovered significant relationships and trends that have direct implications for agricultural stakeholders. The key findings from our analysis are as follows:

Seasonal and Long-Term Trends: Visual trend analysis revealed clear seasonal fluctuations in both weather conditions and market prices. Temperature and humidity exhibited pronounced seasonal patterns, with temperature peaking during the summer months and humidity increasing during the monsoon season. These weather variations were found to correlate with fluctuations in market prices, underscoring the significant impact of climatic conditions on agricultural markets.

Correlation Between Weather Variables and Market Prices: Our correlation analysis indicated a positive relationship between average temperature and market prices, suggesting that warmer temperatures generally favor agricultural productivity and market prices. Conversely, a weak negative relationship was observed between average humidity and market prices, implying that higher humidity levels might adversely affect market prices. A strong negative correlation between average temperature and average humidity was also identified, highlighting the expected climatic balance between these variables.

Predictive Modeling Insights: The evaluation of predictive models demonstrated that models utilizing averaged weather data—specifically LSTM and CNN-LSTM hybrids—achieved superior accuracy in forecasting market prices compared to those using raw daily data. This improvement highlights the value of data preprocessing and the potential benefits of leveraging averaged data for predictive modeling in agricultural economics.

Implications:

The findings from this analysis have direct implications for agricultural economics, market prediction, and climate impact assessment:

Agricultural Economics: Understanding the relationship between weather patterns and market prices provides valuable insights for agricultural economists. It underscores the importance of considering climatic variables in economic models and forecasts, which can enhance the accuracy and reliability of market predictions.

Market Prediction: The improved predictive performance of models using averaged weather data suggests that stakeholders can rely on these models for more accurate market forecasts. This can help farmers, traders, and policymakers make informed decisions, optimizing agricultural practices and market strategies.

Climate Impact Assessment: The significant correlations between weather variables and market prices highlight the critical role of climatic conditions in agricultural productivity. This emphasizes the need for ongoing climate impact assessments to better understand and mitigate the effects of climatic variability on agriculture.

Future Research and Practical Implications:

Based on the findings of this study, several potential directions for future research and practical applications are suggested:

Exploring Additional Weather Variables: Future research could incorporate additional weather variables, such as wind speed, solar radiation, and soil moisture, to provide a more comprehensive analysis of the factors influencing agricultural markets. This could further enhance the accuracy of predictive models.

Incorporating More Sophisticated Models: Advancements in machine learning and artificial intelligence offer opportunities to develop more sophisticated models for market prediction. Techniques such as ensemble learning, deep learning, and hybrid models could be explored to improve forecasting accuracy and robustness.

Expanding the Dataset: Expanding the dataset to include longer historical records and data from additional regions could provide a more robust basis for analysis. This would help to generalize the findings and improve the applicability of the models across different climatic and agricultural contexts.

Policy and Strategic Applications: The findings from this study can inform policy development and strategic planning in agriculture. Policymakers can use these insights to design interventions that mitigate the risks associated with climatic variability and enhance the resilience of agricultural systems.

Farmers and market stakeholders can leverage the predictive models to optimize planting schedules, manage resources more efficiently, and make better-informed market decisions.

In conclusion, this comprehensive data analysis has significantly advanced our understanding of the dynamic relationship between weather conditions and the agricultural market in Nepal. The study's findings not only validate the hypothesis that weather variables have a measurable impact on market prices but also illustrate the potential of predictive models in harnessing this relationship for improved market forecasting. The improvements observed in model performance with averaged weather data suggest a promising direction for future research and application in agricultural economics.

Moreover, the insights gained from this analysis contribute valuable knowledge to the field, offering a foundation upon which stakeholders can base strategic decisions to mitigate risks and capitalize on favorable conditions. As we move forward, it is clear that the integration of advanced analytical techniques and thoughtful data preprocessing can significantly enhance our ability to predict agricultural market trends, ultimately supporting the resilience and sustainability of agricultural practices in the face of climatic variability.

Model Development and Results

In this section, we describe the development of predictive models for price prediction and present the results obtained from their evaluation. We outline the machine learning models employed, including LSTM, CNN-LSTM, and ARIMA, evaluate their efficacy and accuracy in forecasting market prices, and conduct a comparative analysis to identify the most effective approach.

Description of Predictive Models Used

We begin by providing an overview of the machine learning models employed for price prediction. Each model is briefly described along with its underlying principles and suitability for forecasting market prices.

- Long Short-Term Memory (LSTM): A specialized recurrent neural network architecture capable of capturing long-term dependencies in time series data.
- Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) Hybrid: Combines CNN's feature extraction capabilities with LSTM's sequential analysis, suitable for capturing spatial and temporal patterns in weather and market data.
- Auto-Regressive Integrated Moving Average (ARIMA): A traditional statistical model for time series analysis, often used as a benchmark for comparison with more advanced models.

Model Performance and Accuracy

We then proceed to evaluate the efficacy and accuracy of each predictive model in forecasting market prices. The performance of each model is assessed using relevant evaluation metrics such as Mean Absolute Error (MAE), Root Mean Square Error (RMSE), and others.

- LSTM: Discuss the performance of LSTM models in capturing the complex relationships between weather variables and market prices.
- CNN-LSTM: Evaluate the effectiveness of CNN-LSTM hybrids in leveraging spatial and temporal patterns for accurate price predictions.
- ARIMA: Assess the predictive capabilities of ARIMA models and their suitability as a baseline for comparison.

Comparative Analysis of Predictive Models

Finally, we conduct a comparative analysis of the predictive models to identify the most effective approach for forecasting market prices. The performance metrics obtained from each model are compared, and the strengths and weaknesses of each approach are discussed.

- Comparative Performance Metrics: Present a comparative analysis of MAE, RMSE, and other relevant metrics across different models.
- Identifying the Most Effective Approach: Based on the evaluation results, identify the model or combination of models that offer the highest accuracy and reliability in predicting market prices.

By conducting a comprehensive evaluation and comparative analysis of the predictive models, we aim to provide valuable insights into their effectiveness and suitability for price prediction tasks in the agricultural market context.

Discussion

In this section, we delve into the interpretation of long-term trends identified in weather and price data, discuss the implications of our findings for policy formulation and strategic planning in agriculture, and acknowledge the limitations and challenges encountered during the study.

Interpretation of Long-term Trends

We begin by examining the broader implications of the identified weather and price trends observed over extended periods. Through in-depth analysis and interpretation, we seek to uncover underlying patterns, seasonal variations, and potential long-term shifts in market dynamics influenced by climatic factors.

- Analysis of Weather Trends: Discuss the observed trends in temperature, rainfall, and humidity over extended time frames, considering their impact on agricultural productivity and market prices.
- Market Price Trends: Explore the long-term trends in market prices of key agricultural commodities and their correlation with weather patterns, identifying patterns indicative of market behavior and consumer demand.

Implications for Policy Formulation and Strategic Planning

Next, we consider how the findings derived from our analysis can inform policy-making and strategic decisions in agriculture. By translating research insights into actionable recommendations, we aim to contribute to the development of effective policies and strategies aimed at enhancing agricultural resilience and sustainability.

- Policy Recommendations: Propose actionable policy interventions informed by the analysis of weather and market trends, aimed at mitigating the impact of climate variability on agricultural productivity and market stability.
- Strategic Planning Considerations: Discuss strategic planning considerations for stakeholders in the agricultural sector, including farmers, policymakers, and market regulators, based on the identified trends and correlations.

Limitations and Challenges of the Study

Finally, we acknowledge the limitations and challenges encountered during the course of our research. By transparently addressing these constraints, we aim to provide context for interpreting the study's findings and offer insights into avenues for future research and improvement.

- Data Limitations: Discuss limitations related to data availability, quality, and granularity that may have influenced the analysis and interpretation of results.
- Methodological Challenges: Reflect on methodological challenges encountered during the study, including model assumptions, parameter selection, and data preprocessing techniques.
- Future Research Directions: Highlight opportunities for future research aimed at addressing the identified limitations and advancing our understanding of the complex interactions between weather, market dynamics, and agricultural outcomes.

Through critical reflection and analysis, this discussion chapter aims to contextualize the study's findings within broader theoretical, practical, and methodological frameworks, thereby enriching our understanding of the complex dynamics shaping the agricultural sector.

Conclusions and recommendations

In this final section, we present a summary of the key findings derived from our analysis and model evaluations, offer targeted recommendations for policymakers and stakeholders, and suggest directions for future research to build upon the current study's findings.

Summary of Findings

We begin by providing a concise summary of the critical insights gained from the analysis and model evaluations conducted throughout the study. By distilling complex findings into clear and actionable points, we aim to highlight the most significant contributions of our research.

- Weather and Market Trends: Summarize the observed trends in weather patterns and market prices, emphasizing key correlations and seasonal variations identified during the analysis.
- Predictive Model Performance: Provide an overview of the performance and accuracy of the predictive models employed, highlighting strengths and areas for improvement.

Policy Recommendations and Strategic Advice

Next, we offer targeted recommendations for policymakers and stakeholders based on the research findings. By translating research insights into practical guidance, we aim to support informed decision-making and strategic planning in the agricultural sector.

- Policy Recommendations: Propose actionable policy interventions informed by the analysis of weather and market trends, aimed at enhancing agricultural resilience, sustainability, and market stability.
- Strategic Advice: Offer strategic advice for stakeholders, including farmers, policymakers, market regulators, and agricultural organizations, on adapting to changing climate conditions and market dynamics.

Directions for Future Research

Finally, we suggest areas for further investigation to build upon the current study's findings and expand the knowledge base in agricultural economics and predictive modeling.

- Research Opportunities: Identify potential avenues for future research, including exploring additional variables, refining modeling techniques, and investigating emerging trends in agricultural markets and climate dynamics.
- Methodological Advances: Highlight opportunities for advancing methodological approaches, data collection methodologies, and analytical techniques to enhance the accuracy and robustness of predictive models.
- Interdisciplinary Perspectives: Encourage interdisciplinary collaboration and research initiatives to address complex challenges at the intersection of agriculture, climate science, and economic policy.

By offering comprehensive conclusions and actionable recommendations, this chapter aims to contribute to evidence-based decision-making and stimulate further inquiry into the complex dynamics shaping the agricultural sector in a changing climate landscape.

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Applied Education in Tribhuvan University

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Abstract

This paper analyses the concept of applied education and its significance in enhancing employability, fostering holistic learning experiences, promoting industry collaboration, and improving student engagement and motivation. The benefits of applied education include developing industry-relevant skills, integrating theory with practice, and fostering innovation through industry partnerships. However, challenges such as resource intensiveness and curriculum integration require careful consideration. The role of universities in curriculum development, industry partnerships, faculty training, and student support is pivotal. Case studies illustrate successful implementations of applied education in science and engineering design competitions, healthcare practicums, and entrepreneurship incubators. The paper concludes with insights into future directions for advancing applied education and the valuable suggestions are forwarded.

Keywords: Applied Education, Employability, Holistic Learning, Industry Collaboration, Student Engagement

Introduction

In the rapidly evolving landscape of higher education, the spotlight on applied learning within universities is expected to gain considerable attention, particularly at Tribhuvan University (TU), Nepal's premier academic institution established after the establishment of Tri-Chandra College (Parajuli, 2021a,b). The details about Tribhuvan University starting from its establishment are well mentioned in its history in two parts (Pangeni, 2019, 2023). This article seeks to delve deep into applied education and its profound relevance within the unique context of TU (EQAAC, 2021). By exploring the definition, benefits, challenges, and pivotal role of universities like TU in fostering practical learning experiences, it is aimed to highlight the transformative potential of applied education in preparing students not just for careers but for a lifetime of meaningful contributions to society (Prasad Upadhyay, 2018).

With its rich heritage and commitment to academic excellence, Tribhuvan University stands at the forefront of embracing applied education as a catalyst for student success and societal impact. Applied education, within the realm of TU, emphasizes the practical application of knowledge and skills acquired through academic study, distinguishing it from traditional theoretical learning. This approach empowers TU students to engage directly with real-world challenges, honing critical

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thinking, problem-solving abilities, and hands-on expertise in diverse fields (Paudyal, 2016).

At TU, applied education takes various tangible forms, including internships, practicums, collaborative projects with industry partners, and immersive experiential learning opportunities. These initiatives supplement classroom learning and provide TU students with invaluable insights into professional environments, refining their technical competencies and fostering essential soft skills such as communication, teamwork, and adaptability (Cabaleiro-Cerviño & Vera, 2020).

This article will unpack the myriad benefits of applied education within TU, ranging from enhanced employability to holistic learning experiences and impactful industry collaborations (Raj & Pathak, 2023). Furthermore, it will navigate the inherent challenges of implementing applied education programs at TU, including resource intensiveness, curriculum integration complexities, and innovative assessment methodologies.

By illuminating the pivotal role of Tribhuvan University in advancing applied education through curriculum development, industry partnerships, faculty support, and comprehensive student services, this article underscores how TU should redefine the future of higher learning in Nepal (Thapa, 2018). Through compelling case studies and insights gleaned from academic research, tangible examples of applied education initiatives will be showcased at TU, illustrating their transformative impact on student learning outcomes and societal engagement.

In conclusion, applied education represents a paradigm shift in higher education at Tribhuvan University, emphasizing the practical application of knowledge to address real-world complexities. By embracing applied education within its academic framework, TU should not only prepare students for successful careers but also nurture a generation of adaptable problem-solvers poised to tackle local and global challenges with ingenuity and resilience. As TU continuously trying to champion applied education, it should stand to shape the future of learning and professional development in Nepal, empowering students to thrive in an ever-changing world.

Understanding Applied Education

Applied education emphasizes the practical application of knowledge and skills acquired through academic study. Unlike traditional theoretical learning, which predominantly focuses on conceptual understanding, applied education encourages students to engage directly with real-world challenges. This approach bridges the gap between theory and practice, enabling students to develop critical thinking, problem-solving abilities, and hands-on expertise in their chosen fields.

In universities, applied education manifests through various forms, including internships, practicums, collaborative projects with industry partners, and experiential learning opportunities. These initiatives empower students to gain valuable insights into professional environments, refine their technical competencies, and cultivate essential soft skills such as communication, teamwork, and adaptability.

Benefits of Applied Education

The adoption of applied education within universities offers numerous benefits to students, educational institutions, and society at large:

Enhanced Employability

Applied education equips students with industry-relevant skills and experiences, increasing their employability upon graduation. Employers value candidates who can seamlessly transition from academia to the workplace (Khanal, 2024).

Enhanced Employability through Applied Education

Applied education at Tribhuvan University plays a pivotal role in enhancing students' employability by equipping them with industry-relevant skills and experiences that directly translate into workplace success. In today's competitive job market, employers increasingly seek candidates who possess not only academic knowledge but also practical competencies and a readiness to contribute from day one (Ehiyazaryan, 2009).

Industry-Relevant Skills Development

Applied education initiatives at Tribhuvan University can be designed to bridge the gap between academic learning and industry expectations. Through internships, practicums, and collaborative projects with industry partners, TU students gain hands-on experience and develop practical skills that are directly applicable to their chosen fields. This exposure allows students to understand industry workflows, technologies, and best practices, making them valuable assets to prospective employers (ADB, 2000).

Professional Experience

One of the key aspects of applied education is the opportunity for TU students to gain real-world experience before graduation. Internships and practicums provide valuable exposure to professional environments, allowing students to navigate workplace dynamics, interact with colleagues and clients, and apply theoretical knowledge in practical settings. This professional experience not only enhances their resume but also instills confidence and adaptability, making them more attractive to employers (University of Western Sydney, 2015).

Skill Transferability and Adaptability

Employers value candidates who demonstrate the ability to seamlessly transition from academia to the workplace. Through applied education, TU students should develop transferable skills such as critical thinking, problem-solving, teamwork, and communication, which are essential for success in any professional setting. These skills enable students to quickly adapt to new roles and challenges, demonstrating their readiness to contribute effectively in diverse work environments (Gautam, 2012).

Alignment with Industry Demands

Tribhuvan University must actively collaborate with industries to ensure that applied education programs are aligned with current industry demands and emerging trends. By incorporating industry feedback into curriculum development, TU can prepare students with the specific skills and competencies that employers are seeking, enhancing their employability upon graduation (Mathiesen et al., 2013)

Professional Networks and Opportunities

Applied education initiatives often provide TU students with opportunities to network with industry professionals, attend workshops, and participate in industry events. These networking opportunities not only broaden students' professional connections but also open doors to potential job opportunities and career pathways (Poortman et al., 2022).

So, applied education at Tribhuvan University significantly enhances students' employability by equipping them with industry-relevant skills, practical experience, and transferable competencies that are highly valued by employers. By fostering a seamless transition from academia to the workplace, TU empowers students to embark on successful careers and make meaningful contributions to the workforce. Employers recognize and appreciate the readiness and capabilities of TU graduates, making them sought-after candidates in today's competitive job market. Applied education is truly transformative, empowering students to thrive professionally and contribute meaningfully to the economic and social fabric of Nepal.

Holistic Learning Experience

By engaging in practical applications of their knowledge, students develop a deeper understanding of theoretical concepts and their real-world implications (Mahmoudi et al., 2012).

Holistic Learning Experience through Applied Education

Applied education at Tribhuvan University (TU) must offer students a holistic learning experience that goes beyond theoretical understanding by actively engaging them in practical applications of their knowledge. This immersive approach not only enhances students' comprehension of academic concepts but also allows them to grasp the real-world implications and significance of what they learn within their chosen fields of study.

Integration of Theory and Practice

Applied education initiatives at TU must emphasize the integration of theoretical knowledge with practical applications. Students are encouraged to apply classroom learning to real-world scenarios through hands-on projects, simulations, internships, and industry collaborations. This integration bridges the gap between theory and practice, enabling students to see firsthand how their academic knowledge translates into practical solutions and outcomes.

Deeper Understanding of Concepts

By engaging in practical applications, TU students can develop a deeper understanding of theoretical concepts. They gain insights into how abstract theories and principles are applied in specific contexts, leading to a more nuanced and comprehensive understanding of their disciplines. This experiential learning approach enriches students' academic experiences and encourages critical thinking by challenging them to analyze and solve complex problems in real time.

Real-World Implications

Applied education at TU should emphasize the real-world implications of academic knowledge. Through experiential learning opportunities, students witness the impact of their actions and decisions on individuals, communities, and industries. This awareness fosters a sense of responsibility and ethical decision-making, preparing students to navigate ethical dilemmas and societal challenges in their future careers.

Practical Skills Development

Engaging in practical applications not only deepens students' understanding of theoretical concepts but also enhances their practical skills. TU students acquire hands-on experience in using tools, technologies, and methodologies relevant to their fields of study, preparing them to be competent and proficient professionals upon graduation.

Interdisciplinary Learning

Applied education often encourages interdisciplinary learning by exposing students to diverse perspectives and approaches. TU students collaborate across disciplines to solve complex problems, gaining a holistic understanding of multifaceted issues and developing the ability to think creatively and innovatively.

Experiential Growth and Personal Development

Beyond academic achievements, applied education fosters experiential growth and personal development. TU students can develop resilience, adaptability, and confidence as they navigate real-world challenges and experiences. This holistic approach to learning prepares students not only for successful careers but also for lifelong learning and personal fulfillment.

So, the holistic learning experience facilitated by applied education at Tribhuvan University empowers students to develop a deeper understanding of theoretical concepts and their real-world implications. By integrating theory with practice, TU equips students with the knowledge, skills, and perspectives needed to excel in their chosen fields and make meaningful contributions to society. This comprehensive approach to education ensures that TU graduates are not only academically competent but also socially aware, ethically responsible, and well-prepared for the complexities of the professional world. Applied education at TU truly transforms students into informed, capable, and engaged global citizens

Industry Collaboration

Universities collaborating with industries through applied education programs foster innovation, research, and development, leading to mutually beneficial partnerships (Šereš et al., 2019). Industry collaboration in the context of applied education at Tribhuvan University (TU) plays a crucial role in driving innovation, research, and development while establishing mutually beneficial partnerships between academia and industry. By actively engaging with industries through applied education programs, TU cultivates an environment of innovation and practical problem-solving, benefiting students, faculty, industry partners, and society at large.

Driving Innovation and Practical Solutions

Collaborations between TU and industries through applied education programs can facilitate the exchange of knowledge, expertise, and resources. Industry partners bring real-world challenges, projects, and opportunities to the table, allowing TU students and faculty to apply academic theories and research to develop innovative solutions. This collaborative approach fosters creativity, entrepreneurship, and a culture of innovation within the university ecosystem.

Enhancing Research and Development

Industry collaboration enhances research and development initiatives at TU by providing access to industry-specific data, technologies, and expertise. Through joint projects and partnerships, TU researchers can address practical problems, conduct applied research, and contribute to the advancement of knowledge in collaboration with industry stakeholders. This synergy between academia and industry accelerates the translation of research findings into actionable outcomes with real-world impact.

Skill Enhancement and Professional Development

Industry collaboration exposes TU students to industry-relevant skills, technologies, and best practices. Students engage in internships, collaborative projects, and experiential learning opportunities that simulate real-world work environments, preparing them for future careers. This hands-on experience not only enhances students' employability but also nurtures a culture of lifelong learning and professional development.

Mutually Beneficial Partnerships

Collaborations between TU and industries are mutually beneficial, creating symbiotic relationships that drive economic growth and societal development. Industry partners benefit from access to TU's talent pool, cutting-edge research, and innovative solutions, while TU gains valuable insights, resources, and opportunities for curriculum enrichment. These partnerships foster long-term relationships that extend beyond academic programs, paving the way for future collaborations and knowledge exchange.

Addressing Societal Challenges

Industry collaboration through applied education programs enables TU to address complex societal challenges through interdisciplinary approaches. By leveraging industry expertise and resources, TU can develop solutions that have practical applications and positive social impact, ranging from sustainable development to healthcare innovations and technological advancements.

In conclusion, industry collaboration within the framework of applied education at Tribhuvan University is instrumental in fostering innovation, research, and development while establishing enduring partnerships between academia and industry. By embracing collaborative initiatives, TU not only enriches the educational experience for students and faculty but also contributes to economic growth, technological advancement, and societal well-being. Applied education programs that prioritize industry collaboration empower TU to be at the forefront of innovation and problem-solving, shaping a brighter future for Nepal's academic and industrial landscape.

Student Engagement and Motivation: Hands-on learning

Hands-on learning experiences often result in higher student engagement and motivation compared to passive classroom instruction (Kubischta & Tiikkaja, 2014). Applied education at Tribhuvan University (TU) can emphasize hands-on learning experiences that significantly enhance student engagement and motivation compared to traditional passive classroom instruction. By actively involving students in practical activities, projects, and real-world scenarios, TU can foster a dynamic learning environment that inspires curiosity, creativity, and a deeper sense of ownership over their educational journey. Some other hands-on activities includes:

Active Participation and Experiential Learning

Hands-on learning experiences can encourage active participation and engagement among TU students. Instead of passively receiving information through lectures and textbooks, students become active participants in their learning process. Engaging in practical activities such as experiments, simulations, fieldwork, and collaborative projects allows students to apply theoretical concepts in meaningful contexts, making learning more relevant, tangible, and memorable.

Real-World Relevance and Application

Applied education initiatives at TU can emphasize the real-world relevance and application of academic knowledge. When students see how their learning directly translates into practical skills and solutions, they become more motivated to master concepts and develop competencies that are valuable in professional settings. This intrinsic motivation drives students to invest time and effort in their studies, leading to deeper learning outcomes and academic success.

Skill Development and Confidence Building

Hands-on learning experiences at TU not only enhance academic knowledge but also contribute to the development of essential skills such as problem-solving, critical thinking, teamwork, and communication. As students navigate practical challenges and collaborate with peers, they build confidence in their abilities and develop a growth mindset that prepares them for future academic and professional endeavors.

Enhanced Retention and Application of Knowledge

Actively engaging in hands-on activities promotes better retention and application of knowledge. When students have the opportunity to practice what they learn in real-world contexts, they gain a deeper understanding of concepts and their practical implications. This experiential learning approach strengthens their ability to transfer knowledge to new situations, preparing them to tackle complex challenges beyond the classroom.

Increased Motivation and Sense of Purpose

Hands-on learning experiences often ignite students' passion for learning by providing a sense of purpose and relevance to their studies. When students see the impact of their work and contributions firsthand, they are motivated to pursue academic excellence and pursue career paths aligned with their interests and strengths. This intrinsic motivation sustains their engagement throughout their academic journey at TU.

Promotion of Lifelong Learning

Engaging in hands-on learning experiences cultivates a culture of lifelong learning among TU students. By experiencing the value of continuous exploration, experimentation, and innovation, students develop a thirst for knowledge that extends beyond formal education. This mindset of curiosity and self-directed learning equips students to adapt to evolving challenges and opportunities in their professional lives.

So, hands-on learning experiences within applied education at Tribhuvan University play a transformative role in enhancing student engagement, motivation, and academic success. By shifting from passive instruction to active participation, TU empowers students to become proactive learners, critical thinkers, and problem-solvers prepared to thrive in dynamic and competitive environments. Applied education initiatives that prioritize hands-on experiences create meaningful learning opportunities that inspire and motivate TU students to reach their fullest potential and make impactful contributions to society.

Challenges and Considerations

When exploring the challenges and considerations of applied education, particularly within the context of TU, it's essential to address various aspects that may impact the effective implementation and sustainability of applied education initiatives. While the merits of applied education are substantial, its implementation is not without challenges:

Resource Intensiveness

Developing and maintaining applied education programs requires significant investments in infrastructure, faculty training, and industry partnerships. Implementing applied education programs at TU brings significant benefits but also presents various challenges that need to be addressed to ensure the success and sustainability of such initiatives. These challenges often revolve around resource intensiveness, curriculum integration complexities, assessment methodologies, and overall institutional support. Below, it is focused on the challenge of resource intensiveness, particularly in terms of investments required in infrastructure, faculty training, and industry partnerships.

Resource Intensiveness Overview

Applied education programs demand substantial resources to design, implement, and sustain effectively. This resource intensiveness encompasses several key areas that are critical to the success of applied education initiatives at TU.

Investments in Infrastructure

Developing and maintaining applied education programs necessitates investments in physical infrastructure and facilities that support hands-on learning experiences. This may include specialized laboratories, workshops, simulation centers, and technology-enhanced learning spaces tailored to different disciplines. Upgrading existing facilities and ensuring adequate resources for equipment, materials, and tools are essential to provide TU students with authentic learning environments that mirror professional settings.

Faculty Training and Professional Development

A cornerstone of successful applied education is a faculty equipped with the pedagogical skills and industry expertise necessary to facilitate experiential learning. TU must invest in comprehensive faculty training and professional development programs focused on experiential teaching methodologies, industry practices, and interdisciplinary collaboration. This investment ensures that faculty members are prepared to deliver high-quality applied education and mentor students effectively in real-world contexts.

Industry Partnerships and Collaborations

Building and maintaining meaningful partnerships with industries require dedicated efforts and resources. TU must allocate resources to establish and nurture collaborations with industry stakeholders, including identifying potential partners, negotiating agreements, and coordinating joint projects. Industry partnerships provide TU students with valuable experiential learning opportunities, access to industry mentors, and exposure to real-world challenges. However, sustaining these partnerships over the long term requires ongoing investments in relationship management and program alignment with industry needs.

Financial Sustainability and Institutional Support

Implementing applied education programs at TU requires sustainable financial support and institutional commitment. Securing adequate funding for program development, operational costs, and student support services is essential to ensure the continuity and scalability of applied education initiatives. Additionally, institutional leadership and administrative support are crucial in advocating for applied education within TU's strategic priorities, allocating resources effectively, and fostering a culture that values innovation and experiential learning.

Addressing Resource Constraints Creatively

While resource intensiveness is a significant challenge, TU can address these constraints creatively by exploring alternative funding sources, leveraging external grants and partnerships, and prioritizing investments based on strategic goals and impact. Collaborative efforts involving government agencies, industry associations, and philanthropic organizations can also provide additional support and resources for implementing and expanding applied education programs at TU.

In conclusion, while the implementation of applied education at Tribhuvan University presents resource intensiveness as a formidable challenge, addressing these challenges strategically and collaboratively can unlock the transformative potential of experiential learning for TU students and faculty. By investing in infrastructure, faculty development, and industry partnerships, TU can establish a robust framework for applied education that prepares students for successful careers and fosters innovation, research, and development in Nepal's academic and industrial landscape.

Curriculum Integration

Integrating practical components into existing academic curricula is a fundamental aspect of applied education at TU, ensuring that students gain hands-on experience and real-world skills alongside theoretical knowledge. However, this process requires careful planning, coordination, and ongoing evaluation to maintain coherence, relevance, and effectiveness in achieving educational goals. We should delve deeper into the challenges and considerations associated with curriculum integration within TU's applied education framework.

Alignment with Academic Objectives

One of the primary challenges in curriculum integration is ensuring that practical components align seamlessly with TU's academic objectives and learning outcomes. Applied education initiatives should complement and enhance the existing curriculum, reinforcing core concepts and competencies while providing practical applications. This requires interdisciplinary collaboration among faculty members, program coordinators, and industry partners to design integrated learning experiences that meet educational standards and accreditation requirements.

Mapping Learning Outcomes

Effective curriculum integration involves mapping specific learning outcomes to practical activities and experiences. TU must identify key competencies, skills, and knowledge areas that students are expected to acquire through applied education programs. By aligning learning outcomes with practical components, TU ensures that students develop the necessary proficiencies to succeed in their chosen fields and meet industry expectations upon graduation.

Coherence and Continuity

Integrating practical components into existing curricula requires maintaining coherence and continuity across different courses and academic levels. TU must establish clear pathways for students to progress from foundational theoretical concepts to advanced practical applications within their disciplines. This sequential integration ensures a holistic and progressive learning experience that builds upon students' prior knowledge and skills.

Faculty Collaboration and Training

Curriculum integration demands collaboration among faculty members from various departments and disciplines. TU must invest in faculty training and professional development to equip educators with the pedagogical strategies and expertise needed to facilitate applied learning effectively. Faculty members play a critical role in designing, implementing, and evaluating integrated curricula that balance theoretical foundations with practical experiences.

Flexible and Adaptive Approach

Curriculum integration requires flexibility and adaptability to accommodate evolving industry trends, technological advancements, and societal needs. TU should regularly review and update integrated curricula based on feedback from industry partners, student performance data, and emerging research findings. This iterative approach ensures that applied education programs remain relevant, responsive, and aligned with current practices, market demands.

In summary, curriculum integration within applied education at Tribhuvan University requires careful planning, coordination, and continuous evaluation to ensure coherence, relevance, and effectiveness. By aligning practical components with academic objectives, mapping learning outcomes, fostering faculty collaboration, and maintaining flexibility in curriculum design, TU can create a robust framework for applied education that prepares students for successful careers and lifelong learning in a rapidly changing world. Applied education initiatives at TU aim to bridge the gap between theory and practice, empowering students to become innovative problem-solvers and active contributors to Nepal's economic and social development.

Assessment and Evaluation

Assessing student performance in applied settings within the context of Tribhuvan University (TU) presents unique complexities that require innovative and contextually relevant assessment methods. Unlike traditional examinations that primarily test theoretical knowledge, assessing students' proficiency in real-world applications demands a comprehensive approach that evaluates practical skills, problem-solving abilities, critical thinking, and professional competencies. The challenges and considerations associated with assessment and evaluation in applied education on TU are:

Authentic Assessment of Practical Skills

Traditional examinations may not adequately capture the depth and complexity of student's practical skills and abilities acquired through applied education programs. Assessing practical skills requires designing authentic assessment tasks that mirror real-world challenges and scenarios. TU must develop assessment methods such as performance-based assessments, simulations, case studies, and project portfolios that allow students to demonstrate their applied knowledge and competencies effectively.

Interdisciplinary and Holistic Evaluation

Applied education initiatives often involve interdisciplinary collaboration and integration of multiple knowledge domains. As such, TU must adopt holistic evaluation approaches that assess students' ability to apply cross-disciplinary concepts, theories, and methodologies to solve complex problems. Holistic evaluation considers the integration of theoretical understanding with practical application, emphasizing the interconnectedness of knowledge across diverse fields of study.

Industry-Validated Assessment Criteria

Collaborating with industry partners is essential for developing industry-validated assessment criteria that reflect current industry standards and expectations. TU should engage industry stakeholders in defining performance benchmarks, competency frameworks, and evaluation rubrics to ensure that assessment methods align with industry needs and prepare students for successful careers.

Feedback and Reflection

Providing timely and constructive feedback is crucial for supporting student learning and development in applied education programs. TU should incorporate opportunities for self-assessment, peer evaluation, and reflective practices that encourage students to critically evaluate their own performance, identify areas for improvement, and set personalized learning goals. Feedback mechanisms should be integrated into ongoing assessments to facilitate continuous improvement and growth.

Adaptive Assessment Strategies

Applied education programs require adaptive assessment strategies that accommodate diverse learning styles, preferences, and individual strengths. TU should leverage technology-enabled assessment tools, adaptive learning platforms, and data analytics to gather real-time insights into student progress and tailor assessments to individual needs. Adaptive assessments promote personalized learning experiences and enhance the validity and reliability of evaluation outcomes.

Ethical and Inclusive Assessment Practices

TU must uphold ethical standards and ensure inclusivity in assessment practices, respecting students' diverse backgrounds, experiences, and learning trajectories. Assessment methods should be fair, transparent, and culturally sensitive, minimizing biases and promoting equity in evaluating student performance.

In summary, assessing student performance in applied education programs at Tribhuvan University requires a strategic approach that addresses the complexities of practical skill development, interdisciplinary integration, industry relevance, and ethical considerations. By adopting innovative assessment methods, engaging industry partners in assessment design, promoting feedback and reflection, and embracing adaptive strategies, TU can create a robust evaluation framework that accurately measures students' preparedness for the professional world. Applied education assessments should empower students to demonstrate their full potential, cultivate lifelong learning habits, and contribute meaningfully to Nepal's economic and social development.

The role of the University

Tribhuvan University can play a pivotal role in advancing applied education by spearheading curriculum development, fostering industry partnerships, supporting faculty training, and providing comprehensive student support services. These efforts are essential for preparing students to thrive in dynamic professional environments and contribute meaningfully to society. Let's delve deeper into the specific roles and contributions of universities in advancing applied education. Universities play a pivotal role in advancing applied education:

Curriculum Development

Universities design curricula that blend theoretical foundations with practical experiences, catering to evolving industry demands.

- Designing Comprehensive Curricula: TU can design curricula that seamlessly blend theoretical foundations with practical experiences. This involves identifying industry-relevant skills, competencies, and knowledge domains that students need to succeed in their chosen fields. It should also focus on the priorities areas forwarded by University Grants Commissions including local and traditional technologies.
- Catering to Evolving Industry Demands: TU continuously updates curricula to reflect evolving industry demands, emerging technologies, and global trends. By integrating applied components into academic programs, TU ensures that graduates are well-prepared to meet the demands of the job market and contribute to economic development.

Industry Partnerships

Establishing and nurturing relationships with industry partners facilitates the development of applied education initiatives and research collaborations.

- Establishing Collaborative Relationships: TU actively can establish and nurture partnerships with industry stakeholders, including corporations, businesses, government agencies, and non-profit organizations.

- Facilitating Applied Education Initiatives: Industry partnerships facilitate the development of applied education initiatives, internships, practicums, and collaborative research projects. These initiatives provide TU students with invaluable hands-on experiences and exposure to real-world challenges, fostering professional growth and industry readiness.

Faculty Training and Support

Supporting faculty members in adopting experiential teaching methods enhances the quality of applied education delivery.

- Professional Development Programs: TU must invest in faculty training and support to enhance the quality of applied education delivery. Faculty members are equipped with pedagogical strategies, experiential teaching methods, and industry insights to effectively mentor and guide students in practical learning environments.
- Promoting Interdisciplinary Collaboration: Faculty training encourages interdisciplinary collaboration and innovative teaching practices that bridge theory and practice, enriching students' learning experiences and academic outcomes.

Student Support Services

Universities provide resources such as career counseling, mentorship programs, and networking opportunities to facilitate student transitions into the workforce.

- Career Counseling and Guidance: TU provides comprehensive career counseling services to help students explore career pathways, develop professional skills, and navigate job opportunities.
- Mentorship Programs: TU offers mentorship programs that connect students with industry professionals and alumni, providing valuable guidance, advice, and networking opportunities.
- Networking Opportunities: TU organizes networking events, industry fairs, and alumni gatherings to facilitate connections between students, employers, and industry experts, fostering professional relationships and enhancing students' employability.

Conclusively, universities like Tribhuvan University play a critical role in advancing applied education by designing relevant curricula, fostering industry partnerships, supporting faculty development, and providing holistic student support services. These collaborative efforts empower TU students to acquire practical skills, industry insights, and professional competencies that prepare them for successful careers and lifelong learning. By embracing applied education initiatives, universities contribute to economic growth, innovation, and social development while cultivating a new generation of skilled professionals poised to address complex challenges and drive positive change in Nepal and beyond. Applied education is not just about imparting knowledge; it's about empowering students to make meaningful contributions to the world around them.

Applied Education Activities

Applied education initiatives at Tribhuvan University (TU) encompass a diverse range of experiential learning opportunities designed to prepare students for real-world challenges and professional success. Some examples of TU's commitment to applied education across different disciplines can be:

Science & Engineering Design Competitions

Universities organize competitions where students apply science & engineering principles to solve real-world problems, fostering innovation and teamwork.

- Objective: TU can organize science & engineering design competitions where students apply theoretical science & engineering principles to solve practical, real-world problems.
- Methodology: Students can form interdisciplinary teams and collaborate to design innovative solutions, prototypes, or systems within specified constraints and requirements.
- Benefits: These competitions foster creativity, critical thinking, and teamwork among students. Participants gain hands-on experience in applying science & engineering concepts to address societal needs or industry challenges. They also develop presentation skills as they pitch their ideas to judges and industry professionals.
- Past activities: TU's Science & Engineering are hosting similar competitions where students design and build projects such as renewable energy systems, sustainable infrastructure solutions, or assistive technologies for individuals with disabilities. These competitions not only showcase students' technical skills but also promote innovation and entrepreneurship in science & engineering education.

Healthcare Practicums

Medical schools offer clinical rotations, enabling students to gain firsthand experience in patient care under the guidance of seasoned professionals (Choulagai, 2019).

- Objective: TU's teaching hospitals can offer healthcare practicums, including clinical rotations, where students gain practical experience in patient care settings.
- Methodology: Under the supervision of experienced healthcare professionals, students participate in clinical rounds, assist in patient examinations, and engage in treatment planning and implementation.
- Benefits: Healthcare practicums provide TU medical students with firsthand exposure to real patient scenarios, medical procedures, and interdisciplinary teamwork. They develop clinical skills, empathy, and professionalism crucial for their future careers as healthcare professionals.
- Past activities: TU's Institute of Medicine are conducting clinical rotations for medical

students at affiliated hospitals and healthcare facilities. Students rotate through different departments (e.g., internal medicine, surgery, pediatrics) to gain comprehensive clinical experience and apply theoretical knowledge in a practical healthcare setting.

Entrepreneurship Incubators

Business departments in attachment with science and technology establish incubators that support student-led startups, providing mentorship, funding, and access to industry networks.

- Objective: TU's business schools establish entrepreneurship incubators to support student-led startups and promote entrepreneurial ventures.
- Methodology: The incubators provide mentorship, funding, networking opportunities, and access to resources for aspiring student entrepreneurs to develop and launch innovative business ideas.
- Benefits: Entrepreneurship incubators empower TU students to translate theoretical knowledge into practical business solutions. They learn to navigate challenges, take calculated risks, and build sustainable enterprises with guidance from experienced mentors and industry experts.
- Past activities: TU's is operating entrepreneurship incubator that supports student startups in various sectors, including technology, social impact, and sustainable development. Through incubation programs, workshops, and networking events, student entrepreneurs receive mentorship, funding, and support to transform their ideas into viable businesses.

Discussion

Studies show how Tribhuvan University can integrates applied education into diverse disciplines through hands-on experiences, industry collaborations, and experiential learning opportunities. By embracing applied education initiatives like engineering design competitions, healthcare practicums, and entrepreneurship incubators, TU empowers students to develop practical skills, critical thinking abilities, and entrepreneurial mindsets essential for success in today's dynamic and competitive professional landscape. These initiatives not only enrich students' academic experiences but also foster innovation, creativity, and social impact, positioning TU as a leading institution in advancing applied education and preparing future leaders and changemakers. Applied education is more than a concept—it's a transformative educational approach that equips students with the knowledge, skills, and confidence to make a difference in their communities and beyond. Some topic-wise discussions are made as following:

Discussion 1: Resource Intensiveness in Applied Education Programs

This study explores the resource-intensive nature of implementing applied education programs within Tribhuvan University (TU). Through a qualitative analysis of institutional investments in infrastructure, faculty training, and industry partnerships, the research highlights the financial and logistical challenges associated with sustaining effective applied education initiatives. Recommendations for optimizing resource allocation and enhancing program scalability were discussed to support the long-term viability of applied education at TU.

Discussion 2: Curriculum Integration Challenges in Applied Education

Examining the complexities of curriculum integration in applied education, this article investigates how TU navigates the alignment of theoretical foundations with practical experiences. Drawing on faculty perspectives and curriculum development strategies, the study identifies barriers to coherence and relevance in applied education curricula. Insights into innovative approaches for interdisciplinary collaboration and pedagogical adaptation were provided to optimize curriculum integration efforts at TU.

Discussion 3: Faculty Training and Support for Experiential Teaching Methods

Focused on enhancing faculty capacity in applied education delivery, this research paper explores TU's efforts to support educators in adopting experiential teaching methods. Through a mixed-methods approach, faculty training programs and professional development initiatives are evaluated to assess their impact on improving pedagogical practices and promoting interdisciplinary learning. Recommendations for enhancing faculty support systems and fostering a culture of innovation in teaching were presented.

Discussion 4: Industry Collaboration Challenges in Applied Education

This study investigates the challenges and opportunities of industry collaboration within applied education programs at TU. Drawing on stakeholder perspectives and case studies of industry-academic partnerships, the research explores factors influencing the effectiveness of collaborative initiatives in fostering innovation, research, and skill development. Implications for enhancing industry engagement and aligning academic curricula with industry demands were discussed to optimize the impact of applied education.

Discussion 5: Assessment and Evaluation Strategies in Applied Education

Examining innovative assessment methods in applied education, this article has analyzed TU's approaches to assessing student performance in practical settings. Through a comparative analysis of assessment criteria and pedagogical frameworks, the study evaluates the authenticity and effectiveness of evaluation strategies in measuring applied skills and competencies. Insights into enhancing assessment validity, reliability, and fairness are provided to optimize learning outcomes in applied education programs at TU. The intime results are most recommended.

Conclusion and Outlooks

The future of applied education within universities is promising but requires ongoing adaptation and innovation. As industries evolve and new technologies emerge, universities must continuously refine their educational approaches to remain relevant and impactful. Embracing applied education not only prepares students for successful careers but also cultivates a generation of adaptable problem-solvers poised to tackle global challenges. So, applied education represents a paradigm shift in higher education, emphasizing the practical application of knowledge to address real-world complexities. By integrating experiential learning into university curricula, institutions can empower students to become proactive contributors to society. As universities continue to champion applied education, they are poised to redefine the future of learning and professional development. In this comprehensive article, the concept of applied education is analysed in the university setting, emphasizing its transformative potential and the critical role of universities in nurturing practical learning experiences. By embracing applied education, universities can bridge the gap between academia and industry, fostering a generation of skilled professionals ready to thrive in an ever-changing world.

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Search and Destroy Resting Places of Dengue Mosquito Aedes Aegypti Around the Domestic premises

*Ganga GC**

Abstract

Aedes aegypti is the main dengue vector in Nepal, it prefers to live indoors, multiply in domestic containers, does not fly far, and feeds on human blood in daylight, these behaviors protect it from the personal protective measures used by people and thus play a major role in circulating virus. This research paper provides the key message for identifying the vectors, their resting places in the house, and destroying them to prevent dengue disease. Identification of Aedes was done by observing the white strips in the legs of the mosquitoes. To distinguish between the male, female, and species was performed by observing the major keys through the mobile camera. For destruction, the electrical racket was used to reduce the density of the mosquitoes indoors by searching them in the Kitchen, bedroom, living room overhead tank, cemented tank, and bathroom. All the observed indoor areas were positive and the dominant indoor mosquito was Aedes aegypti. Comparatively, the kitchen had a greater number than other places. Aedes albopictus was not found indoors during the study. The search and destruction campaign reduced the mosquito bit for a few days. Searching for a resting place for mosquitoes indoors and destruction reduces the mosquito density and protects from the hazards of chemical insecticides and the infectious bites of a female mosquito.

Keywords: Aedes aegypti, Aedes albopictus, Dengue, Indoor

Introduction

Dengue disease is caused by the dengue virus (DENV) transmitted by the female mosquito *Aedes aegypti* and *Aedes albopictus* while feeding blood from humans as a protein source to lay eggs (Department of Health Services. Epidemiology and Disease Control Division., 2019; World Health Organization, 2011). Dengue fever (DF), dengue hemorrhagic fever (DHF), and dengue shock syndrome (DSS) are caused by four closely related, but antigenically distinct, dengue virus serotypes (DENV-1, DENV-2, DENV-3, DENV-4), of the genus *Flavivirus*, in the family Flaviviridae (World Health Organization, 2011). DENV is a small, spherical positive sense single-stranded RNA virus. All four serotypes of viruses DENV are prevailing and responsible for causing the dengue disease in Nepal. They are categorized into four serotypes based on genetic variation (Maisnam et al., 2023). The scientific hypothesis states that the dengue virus circulates between arboreal *Aedes* mosquito and nonhuman primates in the forests of southeast Asia and West Africa this transmission cycle is called the sylvatic transmission cycle. Therefore, the dengue virus is a sylvatic strain.

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This *sylvatic* strain is circulating between humans in urban and endemic areas (*Vasilakis et* al., 2008). The two vectors are now responsible for the human transmission cycle. *Ae. aegypti* and *Ae. albopictus* were wild species native to Africa and Asia respectively. Travel and globalization of trade distributed them in more than 100 countries (World Health Organization, 2009). In Nepal, *Ae. aegypti* is the principal vector to date transmitting the dengue virus (Department of Health Services. Epidemiology and Disease Control Division., 2019). Earlier Health professionals used to ask "Have you been to Terai region" if a person with a fever or symptoms similar to mosquito-borne diseases visits them for treatment. Mosquito-borne diseases were endemic in Terai region of Nepal but due to the climatic change, these mosquitoes can thrive in the hilly and mountainous regions. Humla, Mugu, Baitadi, Bajura, etc, are now endemic with malaria and dengue cases. Dengue disease was seen in 77 districts of Nepal in 2023 (Epidemiology and Disease Control Division, 2023). *Ae. aegypti* has a different behavior than the other mosquito vectors it prefers to live in human surroundings, breeds in domestic containers like buckets, tubs, flower pots, etc., where rainwater and clean water are stored or collected, and flight range of 100-400meter only, feed on human blood at daylight (day biter), resting habitats indoor, etc., these behavior knowledge gaps among the human or members of the house protect it from the control measures like insecticides coil, liquid vaporizer, insecticidal treated bed nets, etc., which are used by the people during the night time and are meant to be highly reliable impactful control measures for the mosquitoes that bite during the night time or in the evening. Thus, the life cycle of *Ae. aegypti* continues indoors in domestic containers and the dengue virus circulates indoors and in the urban area.

Impactful control measures that are safe, effective, and sustainable targeting the domestic and predomestic *Ae. aegypti* is essential to address the burden of dengue diseases at present and other arboviral diseases in the future. Preventing or reducing dengue virus transmission depends entirely on mosquito vector control or interruption of human-vector contact. Surveillance of resting places indoors or outdoors is mandatory for effective control of *Ae. aegypti.* A study carried out by Phuyal et al. (2022) shows that the knowledge, attitude, and practice of the Nepalese community people of lowland and highlands on dengue fever are not sufficient or adequate to prevent and control future dengue epidemics. A similar study carried out by Paudel et al. (2023) among Police personnel showed the level of knowledge and attitude was low but the prevention practice was moderate. So, it is essential to use multiple control measures indoors and outdoors for effective control of dengue disease (Sirisena & Noordeen, 2016). The effective method of targeting *Ae. aegypti* is indoor residual spraying (IRS) an expensive insecticidal technology that sprays large quantities of insecticides on every indoor wall and ceiling but is found to be less impactful. Later the identification of the resting behavior of *Ae. aegypti* on the wall below 1.5m and in dark places, spraying at this targeted wall and dark recesses rather than the entire house showed an impactful control of *Ae. aegypti* vector indoors and is known as Targeted indoor residual spraying (TIRS) (Facchinelli et al., 2023; Seang et al., 2023). Capturing resting and flying mosquitoes indoors during a defined period is considered a gold standard for indoor adult Ae. aegypti sampling or density or abundance determination to predict the outbreak of dengue disease. Ae. aegypti becomes infected after biting infected humans symptomatic or asymptomatic as humans are the main amplifying host of the virus. The virus infects the mosquito midgut and subsequently spreads to the salivary gland and the virus is transmitted to other humans during subsequent feeding. After that, the mosquito remains infective for the rest of its life. To prevent transmission search and destroy campaigns are effective. For destruction sophisticated equipment or techniques are not required for the indoor dengue vector a simple mobile gadget can be used for the identification of the vector and precious time is required to search and destroy them to prevent the transmission of the virus among the households.

This research paper provides the key message for identifying the resting places in the house and destroying them to prevent dengue disease. Identifying all types of natural and manmade resting places indoors or outdoors and the ability to distinguish the dengue vector will bring awareness among the people to protect themselves further from mosquito-borne diseases in the future.

Materials and methods

Indoor Resting Places of *Aedes aegypti*

The study was performed during the monsoon season June-September 2023 surveillance of the indoors of a single house located in Koteshwor. During the day the kitchen, bedroom washroom, overhead tank, living room, and underground cemented tank were inspected and searched for a period of approximately 30 minutes for resting adult mosquitoes, some were caught with hands and placed in a transparent cup for identification and other flying adults were killed by using the electrical racket as much as possible to destroy all the flying mosquitoes.

Identification of *Aedes* species

The adult mosquitoes, caught alive were identified as *Ae. aegypti* or *Ae. albopictus* with the help of identification keys for genera, and species. Male mosquitoes were identified by observing feathery antennae and palpi longer than the proboscis. Females were identified by observing less hairy antennae and Palpi ¼ to half of the proboscis. To distinguish *Ae. aegypti* and *Ae. Albopictus*, dorsal parts of the thorax with silver scales in the shape of a lyre or appear as the half-moon in both males and females as *Ae. aegypti* and dorsal part of the thorax with a median silver single scale line in both males and females as *Ae. Albopictus* (Department of Health Services. Epidemiology and Disease Control Division., 2019; New Mexico Department of Health, 2004). To observe the keys distinctly mobile camera was used.

Destruction of mosquito

The target of the research was to destroy adult mosquitoes to reduce the density of indoor mosquitoes. So, the charges racket was wiped to burn the flying and resting mosquitoes.

Results and Discussion

Indoor resting places

All the observed places Kitchen, bedroom, washroom, overhead tank, living room, and underground cemented tank were positive for adult *Ae. aegypti* were mostly present in the kitchen under the dining table, below the wash basin, and at the back of the cupboards. In the washroom back of the door, and near the water source, overhead tank inside the black Hilltake tank, in the bedroom and the living room in curtains, back of the door, under the table, back of the cupboard, in the underground cemented tank on the wall, when the lid of the tank is open they try to fly away. Comparatively, the kitchen had a greater number than other places. A similar type of study was conducted in houses to determine the indoor resting places of *Ae. aegypti* in Trinidad, West Indices, Panama City, Panama, and the Dire Dawa City of Ethiopia the major resting was found to be the bedroom followed by the living room and Kitchen (Chadee, 2013; Perich et al., 2000; Waldetensai et al., 2021). The indoor resting places are the same only the density of the mosquito varies. The variation may be due to the sanitation maintenance, and the hiding places formed indoors due to the arrangement or placement of things like furniture, curtains, etc., inside the room. To control dengue, it is necessary to know the resting place of the *Ae. aegypti*. In this study, all the observed places inside the house were positive for *Ae. aegypti,* the result is inconsistent with Seang et al. (2023). According to Seang et al. (2023), an abundance of *Aedes* was found in decreasing order in bedrooms, bathrooms, living rooms, and then in the Kitchen in a study carried out in northeastern Thailand but in this study, abundance was observed in the kitchen.

The abundance of *Ae. aegypti* may be due to darkness, the activity of humans, availability of water, temperature, relative humidity, etc., and crowdedness created by cupboards, tables, and racks, providing a large number of hiding places for the adult mosquitoes, as well as insecticide coils or vaporizers were not used in the kitchen. According to Facchinelli et al. (2023) the resting place of *Ae. aegypti* was found to be below 1.5m on the wall surface that's the reason for the ineffectiveness of the vaporizers or coils, the volatile insecticides that move upwards along with the hot air in the room that reduce the exposure to the adult mosquito. Similarly, mosquitoes identified were *Ae. aegypti*, *Ae. albopictus* and *Culex* spp. by Seang et al. (2023), *Ae. aegypti* and *Culex* spp. were present indoors but *Ae. albopictus* was absent during the study period. Various studies have shown the abundance of *Ae. albopictus* in vegetation (Camargo et al., 2021; Champion Samantha and Vitek, 2014; World Health Organization, 2011). The study area's lack of vegetation may be the reason for the absence of *Ae. albopictus* and it prefers outdoor environments to indoor (Rozilawati et al., 2015; World Health Organization, 2011).

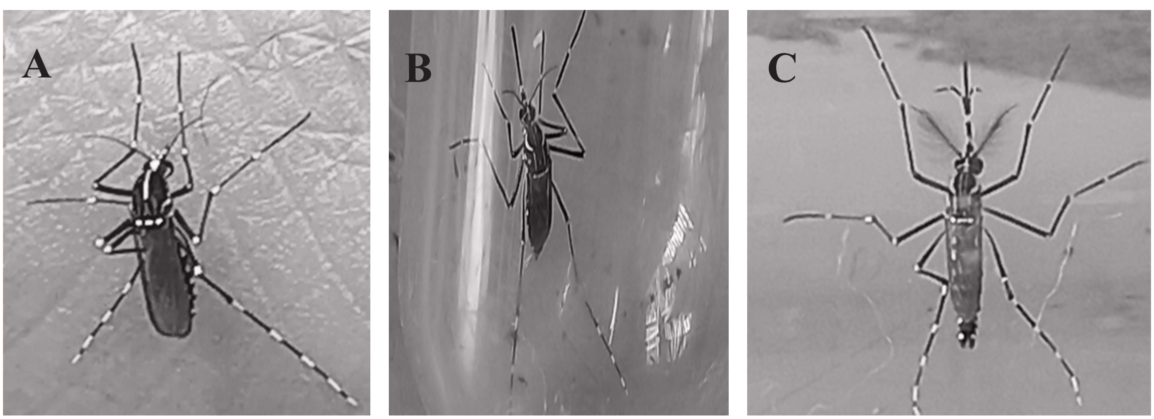
The increasing dengue disease in Nepal is a threat to new infectious diseases like Zika, chikungunya, west Nile fever, yellow fever, etc. (Poudel, 2022). The four major severe arboviral diseases i.e. dengue, Zika, chikungunya, and yellow fever in Asia and African continents, are transmitted by the only mosquito vector *Ae. aegypti* out of 3500 mosquitoes identified to date (Powell, 2018). Similarly, *Ae. albopictus* is one of the major vectors of at least 22 arboviruses (World Health Organization, 2011). There are no specific drugs for dengue treatment mainly focused on treating the pain by using pain killer paracetamol. Dengue vaccine, Dengvaxia (CYD-TDV) discovered in 1997 and Qdenga (TAK-003) discovered in 2022 are commercially available but the dengue vaccine Dengvaxia is given to the person who had dengue once and it is available where the disease is more prevalent (World Health Organization., 2023). Developing countries like Nepal have to depend upon other developed countries for vaccines, drugs, and insecticides for treatment and control of vectors that may not be available in the country in an emergency, which may lead to the loss of life of loved ones of their family, friends, and relatives. Therefore, it is necessary for every citizen not to rely entirely on the government or the policy maker to provide the control measures at their doorstep. It is also the responsibility of every citizen to adopt or learn the techniques to prevent the transmission chain of dengue or other arboviral diseases by searching potential indoor sites where the mosquitoes rest and breed and destroy the mosquito from domestic premises. For *Ae. aegypti* indoors is the better environment and rest at various places of houses, offices, schools, etc. In these places, human activity provides the source of blood for multiplication (Saifur et al., 2012). More female *Ae. aegypti* were present indoors during the study because the blood source as well as the clean water source was available indoors for laying eggs, as only female mosquitoes feed on the blood, males survive by feeding on plant juice, for female mosquitoes the nutrition of blood of human help it for longer life (Vector Disease Control International (VDCI), 2024) so, the female are more compared to male in the indoor. Similarly, 78.5% female and 75.5% male were collected from the positive houses in the city of Merida, Yucatan state, Mexico (Cardeña et al., 2019). Searching for a resting place indoors in a house provides a clue or idea to adopt a feasible type of control measure to prevent dengue disease. For instance, during the study period, the cemented tank and overhead Hilltake black 1000-liter tank were positive for *Ae. aegypti* even though they were covered with their lid a small hole and the loose lid cover permitted the entry for multiplication of the mosquito. In such cases sealing the leakage and providing a tight lid is the solution to prevent the resting place for the mosquito.

Search and destroy campaigns are not yet strongly established and the knowledge among community members on preventive measures is still inadequate. As the dengue disease is seen even in the winter season, the search and destroy campaign should be carried out for the whole year for instance in the year 2023 the dengue cases from January to December were 132, 130, 204, 154, 158, 1026, 6459, 14532, 13547, 12488, 2122, and 291 respectively throughout the country (Epidemiology and disease control division, 2023), but the search and destroy campaign started only after the declaration of dengue outbreak on 27 April 2023. The campaign was started in 2022 but it seems it is not effective as day by day the dengue diseases in increasing which means the campaign should include other effective strategies to control dengue diseases in urban areas.

Search and destruction of adult *Ae. aegypti* female mosquitoes regularly indoors reduce larva and pupa production as they lay 300 eggs in their lifetimes. So, the destruction of adult females indoors hinders the life cycle of an infectious mosquito. Female *Ae. aegypti* bites and transmits the diseases, destruction of females prevents the circulation of viruses. Undifferentiated fever, 80% of asymptomatic patients, and symptomatic patients during the dengue outbreak present indoors or outdoors are the source of dengue virus to the female *Ae. aegypti* and the mosquito circulate the virus around the community. It is also necessary to know the types of symptoms caused by the dengue virus. Most people develop mild or no symptoms, if symptoms occur they may have high fever (40^0C), severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands, rash, etc., sometimes the symptoms vary from one person to another. Presence of any of the following symptoms during the outbreak or in the monsoon season or the endemic areas the symptomatic patients should be isolated from the others and rest indoors inside an insecticidal treated bed net to prevent further mosquito bites thus breaking the transmission chain of the virus as the human are the dead-end host for the virus. Dengue fever for the first time is not serious, but getting it a second time with different serotypes poses a significantly higher risk of the disease progressing to hemorrhagic fever, where blood thins out and can start leaking from veins, causing potentially fatal internal bleeding (World Health Organization, 2011).

Identification

Only *Ae. aegypti* were present in the indoor figure 1, silver scales in the shape of a lyre or as the half-moon in both males and females were identified as *Ae. aegypti.* Female was more frequently observed than males during the study period. *Ae. albopictus* was not found indoors during the study.



Aedes albopictus *Aedes aegypti* *Aedes aegypti*

Figure 1. A. *Ae. albopictus* a. silver straight line on the dorsal part of the thorax identified it as female *Ae. albopictus* b. the white strips on the legs of A, B, and C were identified to be *Aedes* spp. c. the silver curved half-moon shape on the dorsal part of the thorax identified it as female *Ae. aegypti*. d. is the feathery antennae identified as male *Ae. aegypti*, A and B the antennae are less feathers.

Destruction

Search and destruction performed on the day reduce the bites of the mosquitoes among the family members. Regular efforts should be made to destroy the mosquitoes indoors to prevent the circulation of the virus. Search and destruction of adults twice a week reduced the density of the indoors. There is no antiviral drug to kill the virus present in the human blood in the asymptomatic and at symptomatic stages. Typically, four to five days after being bit by an infected *Ae. aegypti* mosquito, a person will develop viremia, which means a high level of dengue virus in the blood. At this stage if a female *Ae. aegypti* mosquito bits for blood meal it will carry the virus along with the blood and transmit the virus to a new individual. There are no rapid test kits available to detect the presence of viruses in the blood. The tests for the diagnosis of dengue diseases are costly, Rs-800-Rs1500 and the cost differs from one laboratory to another. The cost and unawareness of the presence of the virus in the blood of symptomatic and asymptomatic patients increases the transmission chain of the virus indoors, community, and in society. So, people should be made aware of the dengue symptoms and the necessary precautions that must be followed to break the transmission chain indoors, in society.

Conclusion

The research provides the possible places indoors where the mosquitoes rest. It is necessary to survey the potential resting places of mosquito vectors for the destruction of the mosquito to reduce the mosquito density indoors or outdoors. Regular search and destruction of adult female or male dengue vectors indoors or on domestic premises are the stronger control measures to prevent the circulation of the dengue virus in urban areas. In addition to the destruction of adults, larval source reduction, biological control measures, chemical control measures, etc. should be included to reduce the vector density. The "search and destroy campaign" should be able to make aware of the resting places and other breeding habitats of the dengue vector and the possible control measures at the individual level by demonstration. This is a qualitative study done to provide the possible places in the house where the adult mosquito hides and rests to minimize transmission. Destroying adult mosquitoes not only prevents dengue disease but other vector control strategies should be followed to prevent dengue disease.

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Role of College of Education in Shaping Educational System of Nepal

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Abstract

This paper attempts to provide with a diachronic development of education system of Nepal. The main purpose of this paper is to present and analyze the role of College of Education in the expansion of the teacher education program in Nepal. Moreover, different books, historical anecdotes, government records and research papers were consulted and reviewed to prepare this paper. At first, the paper begins with the historical background and initial attempts of establishing College of Education in Nepal along with the role and contributions made by the team of University of Oregon, USA. Then, it delineates the contribution of Dr. Hugh B. Wood in making the foundation of teacher training in Nepal.

Introduction

After the advent of democracy in 1950, Nepal emphasized the critical need for education, driving efforts to enhance literacy and broaden educational opportunities across the country. Prior to this, education was limited and accessible mainly to a privileged few, with only about two percent of the population literate (NNEPC, 1956). The desire for education was emerged due to different influences, breaking the isolation of the Rana regime, British and Indian attempts to extend influence, the achievement of Indian independence and the establishment of democracy in 1947, impacts of World War I and II, and technological advancements like telegraph and radio (NNEPC, 1956).

In 1951, Nepal adopted the right to education for every citizen (Sebaly,1988). Before the establishment of this constitution, only the members of Royal Family and the ruling classes had access to education (Skar & Cederroth, 1997). The rulers feared that, if poor and lower caste people would get free education, they would be critical and dissatisfied with their state mechanism. The people should therefore be kept ignorant, which was for the better (Estvad, 1998c). After 1951 "the dissemination of modern education concepts was slow" (Skar & Cederroth, 1997, p. 77).

The need for teachers became more obvious with the increament of educational efforts, t**he Basic Teacher Training Program** was initiated in 1947 as the first effort of formal training program for teachers in Nepal. There was the feeling that the world had advanced so far and we are so backward. Due to the lack of popular interest and financial support, the program was closed after 100 teachers enrolled during that period in 1954 (Wood, 1965).

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Financial resources of Nepal were limited and were heavily dependent upon foreign aid. Nepal encountered financial hurdles in developing its education system, and heavily depended on foreign aid. This support led to a significant expansion of schools, student enrollment, and teacher training.

U.S. aid to Nepal's education sector began in 1951, aiming to modernize and establish a national school system. Through various projects, it provided significant financial resources, training, and technical assistance for expanding primary, secondary, and vocational education.

Aid was crucial in enabling the Government of Nepal to carry out a massive and rapid quantitative expansion of the number of schools constructed and equipped, students enrolled, and teachers trained. U.S. aid to education in Nepal started in Nepal from the beginning in 1951 to modernize the country and establish a national school system. Its contribution is in education and contributed, through a series of projects, a significant portion of the financial resources as well as the training and technical assistance that went into creating and expanding Nepal's primary, secondary, and vocational education system.

There were a series of projects (1954-1975) of United States aid to educational activities in Nepal, dealing with primary education, teacher training/Higher education, technical and vocational education, secondary education, curriculum and materials development, Adult Education, Library Development, Multipurpose Education, Science Education Center and, Science Teaching Enrichment Program (STEP) and the institutional development of the entire education system.

William Nance, USAID Program Officer and former Peace Corps Volunteer in Nepal said "No matter who you talk to in Nepal, everyone agrees that the most important thing USAID has ever done here is its, work in the education sector." (Sellar, 1981).

There is Diplomatic Relations (from 1947) between the United States of America and the Federal Democratic Republic of Nepal. The diplomatic relationship between the United States and Nepal started with an assistance agreement signed on January 23, 1951. Working together with the Government of Nepal, USAID contributed to some of Nepal’s development successes for the past seven decades. The University library at the College of Education, the first degree-granting institution in Nepal, opened its doors in 1956 in Kathmandu with the support of USAID. Its earliest programs trained 96 teachers and 100 school administrators and the college continues to function today as part of Tribhuvan University. Many initiatives to develop and improve the education sector began as early as the 1950s. The United States Information Service began awarding scholarships to Nepali students in 1951 for advanced study in the United States. This program was later expanded and became the Commission for Educational Exchange between the United States and Nepal also known as the Fulbright commission or USEF/ Nepal, established in 1961. USEF Educational Advising Center provides information about American higher education opportunities to the Nepali public, student counseling, test preparation and test administration services. Peace Corps work in education sector. Peace Corps volunteers are serving in Nepal since the inception of the program in 1962. USAID and Nepal operated a joint Cooperative Services for Education Development Program from 1954-1958, which provided leadership and guidance for the implementation of education programs throughout the country. In addition, the public Affairs section administers academic and cultural exchange programs for approximately 80 Nepali participants every year that build mutual understanding between the United States and Nepal through carefully designed visits that reflect the participants' professional interests and support US foreign policy goals. The US Department of State's Bureau of Educational and Cultural Affairs funds administer the international visitor Leadership Program (IVLP), Study of the US Institutes for Scholars, Secondary Teachers and Students (SUSI) and Teaching Excellence and Achievement (TEA) program. Every year approximately 30-40 leaders from Nepal of different professional back grounds travel to the United States under this program.

The National teachers' training center operated under a joint project of the Government of Nepal and the United States Operations Mission (USOM) on the initiation of foreign-aid programs. A small percentage of the high school teachers hold the B.A. degree, but most of them were high school matriculates or intermediate (two-year college) failures. The middle and primary school teachers were ranges from mere literacy to high school matriculation (very few believed to be matriculates). Most of them had completed five to eight grades. Some primary school teachers had no formal schooling but teach by virtue of being able to read and write. Some of these teachers were retired army men who could bring to the children some first -hand knowledge of the world outside their region (NNEPC 2056). There was not professional training for the teachers of the primary, middle and high school teachers. With the recognition of education as the keystone of democracy, the Government of Nepal established an Education Board in 1952 to supervise and expand the existing educational facilities. The meeting of this board in November, 1953, recommended the Government to appoint a National Commission for planning education to survey existing educational facilities and to prepare a scheme for national universal education in Nepal. It also pointed out that a uniform system of education for the whole country in place of divergent methods is essential; there must be trained teachers in a large quantity, and Nepal must have her own university. Dr. Hugh B. Wood of the University of Oregon (who was in India on a Fulbright teaching assignment) was invited (by USOM) in Nepal to conduct a conference in November 1953 with the Ministry of Education officials in Nepal and the United States Operations Mission (USOM)on this matter. A cooperative agreement was signed in February 1954, providing technical and financial aid for education development. On March 22, 1954, Government of Nepal formed the Nepal National Education Planning Commission (NNEPC) of 46 members including Dr. Hugh B. Wood, American professor of education as a special educational advisor. It began its work with American advisory and financial aid. In particular, Wood (1909–1995) played a key role in the working of the NNEPC and the subsequent production of its report (Rappleye, 2019). The Commission surveyed the existing conditions in education and made a plan for the development of a national programme of schools.

Dr. Hugh B. Wood was sent to Nepal by the United States State Department, initially under the Technical Cooperation Administration (TCA) and later the Foreign Operations Administration (FOA), International Cooperation Agency (ICA), and eventually USAID. Dr. Hugh Wood and The University of Oregon played a pivotal role in Nepal's educational development. Wood was given the autonomy to establish an education system as part of the US State Department's efforts to uplift "Third World" countries.

A second education project agreement was signed between GON and USOM, involving Dollars 220000 and Rs.732, 100. On July 18, 1954, a contract was signed between USOM and the University of Oregon to implement the second education project agreement in Nepal, involving full-time Educational Advisers, staff training, and specialist support.

The commission submitted its report on March 1, 1955 with 14 recommendations. The recommendation No. 7 emphasized prioritizing teacher training (a teacher training center), aiming for short-term training of 1000 primary teachers annually, establishing a degree-granting **College of Education by 1957**, and providing extension courses for all areas of Nepal by 1958. The report highlighted the crucial role of trained teachers for imparting effective education, greatly influencing Nepal's modern education system.

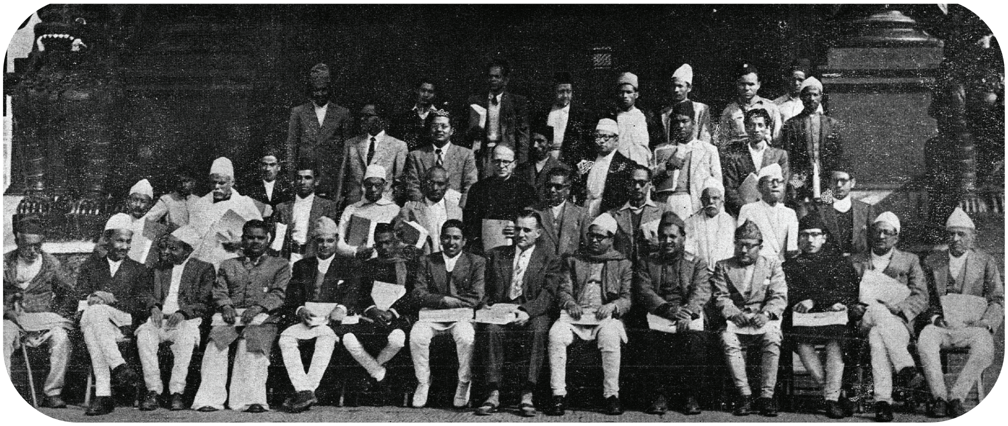

Image 1: The Nepal National Education Planning Commission
(Source: Reproduced from NEPC 1956).

The commission noted that there was only one person in Nepal holding an M.Ed. Degree; perhaps half a dozen persons had a B.T. or B.Ed. Degree; about a dozen had special training in Basic Education in 1954. All of the trainings were secured from Indian institutions. In Nepal, primary (lower primary 1-2, and upper primary 3-5) and middle schools (grades 6-8) were staffed by teachers with varied training, ranging from mere literacy to high school matriculation. Some had completed five to eight grades, others, had no formal schooling but could read and write. Some teachers were retired army men with firsthand knowledge of the world. Government pay scales for matriculates was Rs. 60 for primary schools, Rs. 80 for middle school teachers, and Rs. 120 for high school teachers but less than one-fourth of the teachers were government-employed. Nepal was facing a shortage of trained teachers and lack of training facilities.

Suggestions for the development of a national program of schools

University Education: To achieve coordination in higher education, Nepal urgently needs its own university (a national University).

Training of Teachers: Nepal faces a shortage of trained teachers and lacks training facilities. Establishing teacher training facilities is crucial. It needs to provide Training 1000 primary teachers annually, increasing to 2500 when feasible.

For financing education

To rapidly expand education, the government should increase its funding allocation for education. It proposed allocating 20% of government revenue to education, providing free hostels for poor villagers, and offering government scholarships for rural students, with a return-to-village teaching obligation. (NNEPC Report, 2056)

A Nepal-US agreement established a College of Education, with support from the United States Overseas Mission (USOM) and the University of Oregon. (Wood, 1965). For the Training of a Nucleus Staff for the College of Education in the US, Wood chose seven potential staff members for Nepal's future College of Education, sending them to the University of Oregon for an intensive one-year Master's program starting in June 1955. Dr. Waldemar Olson of the University of Oregon Education staff arrived to serve as educational adviser in their absence. The Nepalese team visited and studied teacher training institutions in Europe and throughout their trip across the United States. At Oregon they studied school systems at the village, country, city and state levels in addition to pursuing their academic studies for the Master's degree in Eugene, Oregon, to prepare for their roles in the upcoming College. For example, Krishna Raj Aryal's electives curriculum and dissertation focused heavily on textbooks and learning materials, (to become Director of the Bureau of Publications). American scholars' writings (University of Oregon, 1957).

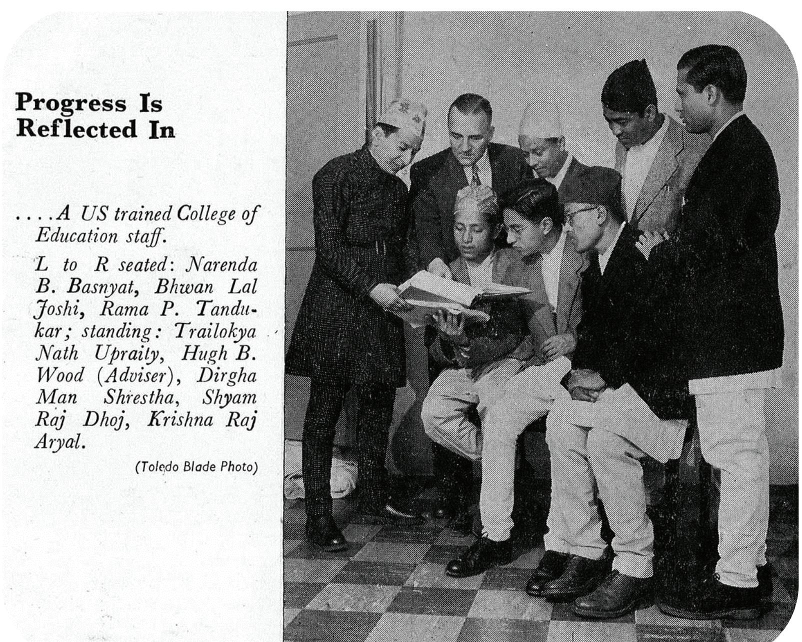

Image 2: Hugh Wood points the way to progress (Source: Reproduced from NEPC, 1956).

On June 30, 1955 the Gon/ USOM Education agreement were extended to provide for an additional educational adviser to assist a University Planning commission and for study grants for three University administrators to be trained in the United States for six months. On December 4, 1955, Dr.

Charles D. Byrne, retired Chancellor of the Oregon State System of Higher Education, arrived to serve as Senior Educational Adviser and to assist in the development of a national university.

In July, 1956, Nepali team of the seven members accompanied by Dr. Wood and a third adviser, Professor Thomas O. Ballinger (still another adviser, Dr. Edward W. Brice, arrived about a month later) returned home with Master of Education degrees after training to operate the College of Education. The College was then established on September 9, 1956 (2013, Bhadra 24) following the recommendation of Nepal National Educational Planning Commission (NNEPC) 1954-56 in Kathmandu (Wood, 1958 as cited in Pande, 1978). Before their final report, the Government of Nepal had set up a National Teacher Training center in 1954. Between 1956 and 1959, 40 more educators were trained from the University of Oregon. Over the next four years, annually, a group of eight to ten prominent Nepali educators underwent a training program in Oregon.

The University of Oregon played a pivotal role in Nepal's educational development, with Wood given the autonomy to establish an education system as part of the US State Department's efforts to uplift "Third World" countries. Following the Report, the US State Department and Nepal government released funds for building the modern education system. Wood focused on three main areas: training core staff in the U.S., establishing the College of Education, and creating and printing textbooks and instructional materials.

During that period, the College offered a 2-year I. Ed. Certificate and an additional 2 years for a B.Ed. degree, 1-year professional B.Ed. degree for those with a baccalaureate degree. There were plans to introduce a 2-year advanced professional M.Ed. degree for those holding a B.Ed. degree. There were subsistence stipends for all students. The College awarded its degrees under the authority of the Nepal Education Ministry. In 1962 (2018 BS), a Master's Level Course in Education was introduced, featuring the subject of 'Educational Administration. 'In addition, a ten-week practice teaching program was required of all candidates (Pande 1978). Upon obtaining their Bachelor of Education degrees, graduates were assigned to teach grades nine and ten, while those completing the two-year intermediate of Education were expected to teach grades six, seven, and eight. The College of Education provided seven distinct programs, including secondary school teacher training, primary school teacher training, in-service, extension, science upgrading, primary teacher upgrading, and supervisor upgrading programs.

Diverging from traditional instruction, the College of Education's program followed an American-style model. Contemporary student evaluation methods with frequent assessments, counseling, supervision, and ongoing staff development. There was the provision of the management of director positions in various academic divisions of the College as: the Division of Instruction (handled academic components: college of Education degree courses), the Normal School (ran primary school teacher training,) the Division of Laboratory Schools served as a demonstration school (with a bus for students' transport) and practice teaching center for student training, for practical learning, observation, and experimentation with innovative teaching methods and materials. Division of Student Personnel managed sub-divisions overseeing teacher placement, extracurricular activities, admissions, counseling, health clinics, and hostels, student union for general welfare. The Bureau of Publications handled the publication of research and instructional materials for the teacher training program., the Bureau of Research, Bureau of Adult Education, Business Management and the College's Principal. TU later followed the provisions of College of Education. There are students' unions for general welfare, hostel facilities, health clinic, different research centers, principal office, stipends for students in some extension practice even today. There were 16 male students in the college's degree program. (personal interview with Rajendra Kumar Rongong one of the first students of the college of education as cited in Pande, 1978). The College of Education held its inaugural convocation in 1958, offering opportunities for further studies in the United States along with monthly stipends for trainees. A significant portion of the College's staff pursued postsecondary education and short-term training programs in the United States. The faculty also included a few educators from the United States who concentrated in the teaching of English and some vocational sub-jects. A total of thirty-one faculty members and fifty-seven non -teaching staff comprised in 1964 (ministry of Education, 1970a as cited in Pande, 1978). Nineteen of the thirty-one faculty members were trained in the United States.

In July 1956, Wood returned from a one-year stay in Oregon, where he trained nucleus staff for the College. Three additional advisors from Oregon followed him: Thomas Ballinger, a professor of art and education; Francis Dart, a physics professor; and Edward Brice, a professor of instruction.

At Wood's request, the US State Department hired two more advisors, Jeannette Hosbach and architect James Tuley, to assist in staffing the College and implementing the Report. Each advisor brought their wives, who taught English courses at the College. The initial Oregon team of one in early 1954 grew significantly to ten by late 1956, with Wood considering these additional American advisors crucial for the College's full operation. Wood aimed to establish an institutional arrangement for modern education.

At the initial stage the United States Agency for international Development bore the entire cost of running the college of Education (Rongong, 1977, as cited in Pande, 1978).

In 1960, it became affiliated with Tribhuvan University. The College became the core of the Institute of Education under the NESP influencing procedural practices across various campuses. In 1971, National Educational System Plan was introduced in the country which renamed the COE the Institute of Education (IOE). A decade later, in 1982, following the recommendation of the Royal Commission of Higher Education, it was given the status of the present Faculty of Education (FOE) under Tribhuvan University. By 1976, the Institute had 11 campuses, six on-spot training centers, and one Remote Area Teacher Training center, with a total of 3,806 students. Kedar Nath Shrestha served as the Dean.

The major functions perform of the college were: training and placing teachers (Normal School), designing and publishing textbooks (Bureau of Publications), and researching and developing policy

(Bureau of Research) among others. Eight to ten promising young Nepali were sent each year to Oregon (United States) for study-tours to build the College staff.

The article covers key indicators, including the initiation of teacher training programs, the role of foreign aid, and the establishment of the College of Education, highlighting the crucial role played by Dr. Hugh B. Wood and the University of Oregon in support from the United States Overseas Mission (USOM) and the University of Oregon (Wood, 1965).

Methods and procedures

The paper has been prepared using the secondary sources of data. The main method employed in collecting, analyzing and interpreting the data was document analysis. For this, various historical documents, government reports and academic articles were also minutely reviewed for the enrichment of the study. Informal discussion with the professors of university also used to validate the data.

Results and Discussions

The study found that the education system of Nepal was nugatory before the establishment of college of education. In order to systematize and lead to right directions to the education system of Nepal, the Oregan University played crucial role. Some of the key achievements of the university collaboration are: the establishment of teacher training programs was crucial for addressing the shortage of qualified educators. It means that the establishment of college of education played pivotal role to supply school teachers in Nepal. Foreign aid, particularly from the United States, played a vital role in financing educational expansion. Financial is a significant part for running academic institutions. For that United States played great role on it. Establishment of the College of Education, with support from the United States Overseas Mission and the University of Oregon, was a significant milestone. Dr. Wood and the University of Oregon played pivotal roles in Nepal's educational development, providing expertise and financial support.

The development of Nepal's education system was marked by challenges including limited resources, resistance to education among ruling classes, and a shortage of qualified teachers. Foreign aid, particularly from the United States, played a crucial role in financing educational expansion. The establishment of the College of Education, under the guidance of Dr. Wood and the University of Oregon, marked a significant step towards modernizing Nepal's education system. Despite challenges, initiatives like the College of Education and increased government funding laid the foundation for Nepal's educational progress.

Conclusion

Since the advent of democracy in 1950, Nepal's educational development has undergone a profound transformation, emphasizing the democratization of education and the improvement of literacy rates. Before 1950, education was largely inaccessible, limited to a privileged minority. However, the onset of democracy recognized the vital importance of education, spurred by events like the end of the Rana regime and global democratic movements.

Despite challenges such as financial constraints and a lack of trained teachers, Nepal initiated educational reforms. The Basic Teacher Training Program, started in 1947, aimed to tackle these issues but faced financial difficulties. Nevertheless, with the support from the United States, notably through USAID, Nepal made significant progress in expanding educational initiatives, including establishing the College of Education in 1956.

Dr. Hugh B. Wood and the University of Oregon played pivotal roles in shaping Nepal's education, focusing on staff training, college establishment, and educational material development. The College's establishment marked a milestone, laying the groundwork for further advancements.

In conclusion, Nepal's educational development indicates the importance of foreign aid, key institutional establishments like the College of Education, and the dedicated efforts of individuals like Dr. Wood and the University of Oregon in shaping modern education.

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Anthropology Learning and Transformation of Self: Postgraduate Research Students' Reflection on their Academic Journey

*Kapil Babu Dahal**

Abstract

Learning through an academic institution is generally and broadly considered to be acquiring knowledge and skills imparted through the teachings of an instructor to aspirant learners, students, or disciples. Whether learning depends upon individual efforts or is done through the interactive process can be a matter of stern academic debate. However, often, the notion of learning itself is taken for granted. This article deals with what anthropology students consider learning. It also sheds light on what they think is the appropriate way to use effective learning procedures to acquire knowledge and skills. What makes the students come up with such ideas has also been dealt with in this paper.

The ethnographic data acquired through my engagements with the research scholars pursuing MPhil/PhD and MA in anthropology at Tribhuvan University, this article critically engages with the notion and process of learning (anthropology). On top of and in light of such autoethnographic data, this article also makes use of ethnographic data acquired as a participant observer of two events held at the Central Department of Anthropology, Tribhuvan University. They are; Anthropology Day program held on February 15, 2024, and the Qualitative Data Analysis Training held during April 27-29, 2024. Likewise, occasional social media posts of the students about the learning at the department have also enriched this paper.

Keywords: Anthropology, Interactive Learning, Peer Learning, Reflexivity, Transformation of Self

Introduction

The university syllabus, textbooks, research papers, and reports can represent what students and researchers are expected to learn while pursuing their academic degrees. Pedagogies and syllabi can simply provide guidelines towards the direction in which students'[1] learning from a particular program may move forward. Since learning is a social process, to exactly know what the students

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[1] *Officially, within Tribhuvan University, students denote to the Masters' students and the candidates pursuing MPhil-PhD are termed as research scholars. However, in this paper, for the convenience of communication, I would like to use students to refer to both collectively and specify while referring to one of them particularly.*

learn, it is imperative to analyze the science and art of learning. As part of the broader field of anthropology of teaching and learning (Pelissier, 1991), this paper aims to contribute to the field of learning anthropology in the typical Nepali higher educational context.

In common parlance, learning is considered the resultant effect of individual efforts. Probably with some exceptions, learning is enacted through the interactive process between the learner, and not only with their counterpart teachers but also with the context. However, often, the notion of learning itself is taken for granted. In this article, I would also like to problematize and question the taken-for-granted notion of learning on the basis of students' perspectives. Along with dealing with their experience of effective learning, this paper also sheds light on what makes students come up with such ideas and realizations. As an approach that can be largely labelled within the umbrella of anthropology of education (Aldender, 2020) this paper also highlights whether and how insights of Nepali anthropology students can be linked with the local cultural realm as well as any typical features of anthropology.

Along with what students have learnt from an academic program, I believe that what is more crucial is whether and how they have been transformed by and through the process of the graduate research program. Kitchin et al. (2023) show that student research fellows at three US universities namely, Illinois State University, St. Mary's College of Maryland, and Wheaton College carried out ethnographic research among their peers in anthropology programs to know more about the experience of fellow students regarding their major and career goals. As part of their study, they explored more about the personal and intellectual growth of the study participant students. It is important to know that these current major students were more concerned with how anthropology transformed them rather than the particular skills in anthropology that might be useful in their future careers.

To understand undergraduate students' transition to anthropology, Bennett (2010) minutely examined it as a socializing process. He argues that socialization begins with the choice of the discipline, goes on as a process of learning and thereby makes them competent to learn the culture of the discipline. He is of the idea that chance as well as economic and cultural capital can have a role in adopting an anthropology major. Also, the study showed that the acquired socialization and disciplinary culture were diverse and varied greatly among the students. Respecting the learning of Bennett's findings, I would like to develop this paper in a way to captures diverse epistemological and disciplinary enculturation as reflected in these two programs. I agree with Pedelty (2001) that in an ideal situation, through long-term ethnographic engagements, it would be effective to comprehend students' learning in anthropology through their performance. Taking these factors into consideration, this paper portrays the students' narrative account of their learning while pursuing postgraduate anthropology.

Anthropologists consider learning as a socially constructed phenomenon and are interested in knowing multiple dimensions of learning. The scope of anthropology of learning (Blum, 2019) is wider and it embraces distinct aspects of socialization, education, enculturation, and schooling.

Not only formal learning but also informal and nonformal learning are encompassed within its broader arms. I agree with Blum that learning is inherent in every human experience. Moreover, only some learning takes place in the schools and part of that equals with what is planned to impart. So, for Blume, teaching is not the sole criterion of learning. In light of the postgraduate anthropology students' reflections, this paper highlights their understanding and realization of learning vis-à-vis the role of teaching in inculcating such learning.

Anthropologists have realized that understanding and interrogating students' learning in their academic discipline eventually boosts the robust learning culture within it, which will eventually increase the visibility of anthropology among the students (Bennett, 2010). Kitchni and colleagues (2023) have briefed what anthropology students consider and how their anthropological journey contributes to their learning- their personal growth containing compassion and expanded worldviews, academic progress beyond bounded cultural boundaries, and critical thinking capacity.

Nepali anthropologists have also written about anthropological learning at Tribhuvan University and Nepal in general. They have mainly focused on the history of the discipline, in the areas of teaching and research (Dahal, 2016; Chhetri & Gurung, 1999; Lama et al., 2016). Dahal (2016) has also pointed out that despite increasing interest in anthropology and anthropological research, still major substantial output still has yet to come in Nepali anthropology. Limited Nepali scholars such as Uprety and Pokharel (2016) have critically gazed into the contents of the pedagogy and syllabus. Nevertheless, the voices and reflections of anthropology students had rarely been the topic of academic explorations and discussions in these scholarly representations. Realizing this gap, this paper focuses on the graduate-level anthropology student and research scholars' voices and reflections about their expectations, aspirations and felt need of going to anthropological learning.

Linking this piece of writing with the notion of anthropology of learning and education, the introductory part of this paper onsets the engagement in this relatively new domain of anthropological engagements in Nepali anthropology. The subsequent part of the article deals with the objectives and specific research questions that are aimed to highlight in the paper, which is followed by the discussions developed on the basis of reflective accounts of the students about their learning journey while pursuing an anthropology research degree. Finally, the concluding part of the paper highlights whether and how these students' learning journey is shaped by their exposure to anthropological knowledge and enculturation.

Research Questions and Objectives

The general quest that motivated me to develop this paper is to engage in and portray the typicality of learning anthropology at the CDA. In doing so, this article aims to expand our understanding of the science of knowing based on empirical knowledge from the perspectives of the knowing enthusiast, the students. Do these students approach anthropology for typical knowledge or whether their anthropological journey cultivate such ideas and feelings with them? Have they felt any departure and shift in their academic journey through anthropology? These are some of the queries which guide the analytical approach of this paper.

The following are the specific objectives of this paper:

1. To expand knowledge on how anthropology students reflect upon their learning journey through postgraduate anthropology programs,
2. To examine whether and how their learning has evolved as a social entity, and
3. To analyze how the comprehension of their learning journey can inform the future course of knowledge production in anthropology in Nepal.

This paper primarily focuses on students' reflection on their learning i.e. how they have learnt what they learnt and what they think as such learning has transformed within themselves- to look at themselves as individuals, as members of society and in their workspace and any other arena they consider as worthy to mention. I think, this aspect is more participatory and innovative but still in shadow in academic discourses in Nepal.

Research Methods

This article is developed based on the ethnographic data generated from a study carried out mainly from January to May 2024 at the CDA. Data from different primary sources have enriched this paper. The typicality of this paper lies in reflecting and representing the views of one of the key stakeholders of the academic institutions, the students.

Students' voices expressed regarding their anthropology learning through two events organized by and at the CDA, occasional reflections of learning of the students through social media, and my autoethnographic reflections from the involvement in anthropology teaching for more than two decades at the research level are the main sources of data that have been used in formulating this paper. Therefore, observations, interactions and participation of both the students and myself were the strategies devised to acquire primary information.

The Anthropology Day Program was held on February 15, 2024, at the CDA. The program was deliberately combined with the orientation of newly recruited MA first-semester students. The participants in the program were newly enrolled MA students, as well as MA and MPhil-PhD students who are ready to go move for their dissertation writing. As part of the program, some of the outgoing MA and MPhil-PhD students reflected on their anthropological journey and learning in the program. Likewise, Qualitative Data Analysis Training organized for these students ready to take forward their dissertation research/writing held during April 27-29, 2024 is another crucial source of data for this paper. In both programs, as a permanent faculty member of the CDA, I was also present and participated actively. Nevertheless, I have to confess that I could not manage to participate and observe in certain portions of both programs, which made me unable to acquire information from each of the participants who expressed their views and reflections. Yet, I believe that the information I have accumulated is good enough to develop a few research papers like this one. Likewise, my aim in this paper is not to see the differential learning experience of MA and MPhil-PhD students but rather to comprehend the pattern in totality.

Thematic analysis was adopted to grasp the students' reflections and learning experiences from the data acquired from these different sources. Delving into the linkages into these themes I was able to see certain configurations in the data which is reflected in this paper as well. I have paid adequate attention to upholding the ethical values expected in carrying out anthropological research like this and making a publication. I have taken utmost care to respect the privacy and anonymity of the research participants while referring or quoting any students in the text. Along with this, as both the events were public, held at the CDA, among various stakeholders from inside and outside of the department, so, the views expressed in the programs, which later on informed to develop this paper, were not sought in privy rather public in nature.

Academic Background and Expectations

We have observed that students with various academic backgrounds come to pursue postgraduate in anthropology. Students with prior degrees of bachelor's and masters such as sociology, anthropology, business management, political science, nursing, pharmacy, development studies, social work, physics, engineering, biology, botany, English and so on go for anthropology. Likewise, students with diverse professional backgrounds including academia, government services, non-governmental organizations, research organizations, politics, business management, and security agencies have shown interest in pursuing further studies in anthropology.

The flow of non-anthropology background students in MA and MPhil-PhD is almost the same. We have observed that the background in anthropology is not the decisive factor in shaping the outcome of student performance at these different levels. A diverse professional and academic background, in fact, makes the classroom lively, full of diversity and a rich source of knowledge and information about different walks of life. Their professional and academic career in different from academia and anthropology makes them initially tougher and challenging to meet the demands of the anthropology program.

Another crucial pattern that we have observed in our programs is that a significant number of students come through the recommendations of ex-anthropology graduates, people in different professional contexts who have encountered anthropologists and/or anthropological input, and families, relatives, and friends of anthropology alumnae. In the same way, some of the aspiring students even visit the department, meet the faculty/staff, and consult other knowledgeable people in their social networks about the discipline or the Department. As a faculty, I have also met different prospective students long before the academic sessions. This clearly denotes their inquisitiveness, commitment and planning to go on the anthropological journey. A natural science postgraduate student states the trajectory of his journey to anthropology:

I already did a Master's in a science program. While working on a research project related to natural resource management, I met a colleague from anthropology. I got to realize the importance of the kind of knowledge he was equipped with and then decided to go for a master's in anthropology.

Students' commitment, efforts and perseverance for their anthropological journey are reflected in the articulation of their academic journey at the CDA. One of them, who recently completed the second semester of the MPhil-PhD program, beautifully presented his efforts and academic journey in social media:

> For my studies, every week, I went to the Department early morning for four days. I studied numerous books and journal articles, participated and presented in almost 80 seminars and interactions, wrote more than 50 precises, wrote various term papers, and developed a proposal. All these endeavours made me competent enough to critically view my horizon of thinking and limitations of knowledge.

He had also met some of the faculties long before joining the program and inquired about the syllabus and pedagogies. His main thirst was to expand anthropological perspectives in general and particularly in the area of medical anthropology. In fact, he was recommended by a colleague while working for a bilateral development organization specializing in health policy and intervention. His reflections show not only his efforts to acquire knowledge but also what he regards as the key learning that he attained from such toil. We can assume that it is not an easy process to be able to question one's knowledge horizon and limitations.

Anthropology has a distinct place among the social sciences as an empirical science based on field-based research (Roldán, 2013). The importance of fieldwork and field sites is strongly stated by the participants of a comparative study (Macía, 2012) between the Universidad de los Andes in Colombia with those at the University of Pittsburgh in the USA.

Columbian students are more interested in conducting fieldwork in their vicinity whereas American students are familiar with and inclined towards distant field research, preferably abroad. Our students have also shown strong concerns about learning more about fieldwork, especially, learning by doing. It is interesting to note that some of the students have pointed out their interest in knowing more about their own community as the driving factor to anthropology.

Anthropological Journey: Learning and Reflections

I found that students are quite open to sharing the experience of upheavals in an anthropological journey through CDA. They have not portrayed the rosy road that the new anthropology postgraduate students have to pass through. One recent MPhil student stated his balanced idea that the students of new batch may have to pass through, "Initially, you might get frustrated but on completion, you might be happy".

A thorny road of anthropology's MPhil-PhD journey was shared by another research scholar who could not accomplish his degree some ten years ago. He was neither hesitant nor upset to share with the participants publicly that he again began to attempt to accomplish it after a decade. He sounded very confident that he would soon successfully complete the very journey. He clearly and honestly put forth that his realization of knowledge, experience and skills being challenged made to set for the very journey again. He was quite confident and happy that he made such an appropriate choice. Moreover, he liked the way facilitating faculties incorporated their empirically grounded and performance-based presentations in the training. He also found that the training organized for qualitative data analysis was held at the right time, immediately before the commencement of their research and writing.

The confidence of the researchers to successfully accomplish their dissertation on time is embedded in the coming out of demanding requirements of the semester-based program (Dahal, 2021). The participants also explicitly referred to the learning of time management not only throughout the two-year-long program but also from the three-day-long training as well. Another participant who had taken the dissertation writing as a giant task shared how she had learnt to conquer it- “I will be able to finish my thesis on time. I learnt the principle of divide and rule; I will divide the tasks into several pieces and handle the dissertation writing”.

Currently, CDA has its own library containing some rare collections of the latest books and access to international journals. It has its own meeting hall at the clock tower in Kirtipur, where regular symposiums, colloquiums, and seminars take place with the contribution of in-house, other national and international researchers and scholars. Each class in CDA has a safe drinking water facility, and students also get light snacks and tea during break time. Some of the students pointed out the ambience in the Department as a critical conducive factor for learning anthropology. A research scholar coming from a political career state “the conducive learning environment inside the class, especially, encouraging students to move ahead regardless of wherever they are at present”. Another research scholar wraps up at the end of the semester, in his social media post, about what he found as the favorable environment:

> Teaching-learning environment, techniques of teaching, and energetic faculties have always facilitated learning within a short span of time. I doubt whether I would have been able to acquire parallel knowledge and experience from another university in any part of the world. It was a wonderful experience for me as a learner trying to move towards (medical) anthropology with the academic and professional background of epidemiology and public health.

Students also pointed out the role of a friendly environment in the department as another motivating element for their academic and personal growth. A student stated-

I feel at home in the department, with a heart-to-heart connection. Moreover, I do not feel ashamed of not being fluent in conversation in the Nepali language. All these made me always be present in the class. I was joyful in pursuing an anthropology degree, and I have realized that I have been transformed now.

As reflected in the articulation of this student, anthropology students have realized the criticality of conducive environmental factors for their learning. They are not counting only the degree, and formal academic programs but also the transformation taking place within them. Echoing with their voice, a senior professor summed up the essence of academic culture at the CDA "We want you to see how far have you been transformed through the academic training at the CDA. But, we do not compare yourself with the others. We become satisfied when we see better you".

Transformation in self has been pointed out by several students and scholars in different ways. Another student noted the transition, transformation and experience of dual-self within himself. Working as a senior employee at a for-profit company, his anthropological journey and learning about the shortcomings of neoliberalism made him more generous and kinder towards his sub-ordinate employees:

> I have become more employ friendly than the earlier. I have become generous enough to sanction leave to them for their social and family functions. Often other senior colleagues point out this. Sometimes, I feel two different personas growing within me, and the anthropologist being the second one".

Some senior staff at the government/civil service and other developmental organizations have another interesting dimension of learning to share with the participants. Less habituated to being questioned at their job, initially, they found it quite strange while pursuing an anthropology degree, which they think did not last for a long time-

> I was not much accustomed to being questioned. I was also more familiar with asking someone else to get things done. In the beginning, I used to think that no questions would be raised about my writing. Now, I realize that the more questions I get, the more I can improvise. The culture of writing précis and getting feedback in the department has challenged and altered my thinking.

Discussions and Conclusions

The above discussions further solidify the idea that learning is not a solitary effort, rather, it is an interactive process. The postgraduate anthropology research students clearly pointed out that learning is not merely an accumulation of ideas and knowledge. Rather, it comprises reflexivity in light of the transformation of self. Anthropological knowledge has encouraged them to explore the self and surroundings, question the taken-for-granted ideas, practices, beliefs and so on in every domain, and move beyond the monolithic approach. Such realization has become liberating for them as well. For instance, one female student stated that overcoming the feeling of guilt and shame for not being able to have proficiency in a language other than one's mother tongue has increased the confidence to get out of that and participate fully in social interactions.

These enthusiasts' articulation of learning at the CDA also shows that it is not easier to separate the academic side of learning from the social and cultural aspects. The participatory approach, inclined to be grounded to the field, not only being observant but also reflective are some of the qualities that we cannot demarcate only into one side.

In this paper, I have not focused on the differential learning experience of MA and MPhil-PhD students, and thus, such scholarship can substantially contribute to anthropological knowledge production. Along with that, understanding undergraduate anthropology students' views about why they went for the anthropology major is another potential area for further studies. The information about learning expectations from the program and reflections on the learning presented in this paper are not from the same cohort of students. Therefore, a systematic study of a cohort of students for a certain period, such as for five years, comparing their expectations during or before admission and their learning at the end of the program would really come up with a comparable form of data. This paper highlights students' thoughts, hopes, and contemplative learning experiences at CDA only. However, it will be interesting to carry out similar studies in colleges other than the CDA but within TU. At the broader level, a comparative study can be conducted between anthropology students and of students pursuing postgraduate degrees in other disciplines.

The constructive and creative approaches that CDA has adopted and the kind of conducive environment it has created among its students have shown some rays of hope among the students in Nepali academia. In fact, Tribhuvan University in general and its various academic departments can learn from this experience and customize such learning as per the need of their own discipline and students. Likewise, based on the experience of CDA, the university can initiate to the development of the inter-departmental institutionalized learning approach. Eventually, we all have to pay attention to adopting progressive pedagogies (Kissel & Blum, 2022) making us inclined to make classrooms a space to welcome all learners and also pushing educators toward creating a more diverse, inclusive, and equitable classroom.

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Why Tribhuvan University Needs to Start Academic Program in Cognitive Science?

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Abstract

This perspective article argues and proposes for the starting of Cognitive Science as an academic program in Tribhuvan University. The article gives an overview of the cognitive science program across the world and in our neighborhoods. It explores the viability and possibility of introducing cognitive science as an academic discipline in Nepal – citing the researches done and published by Cognitive Science and Psycholinguistics Lab in Tribhuvan University. It outlines and opens up the possible research areas and what it can contribute to the society. Finally, the article emphasizes on the need to start the academic program and reasons why Tribhuvan University is best suited for this task.

Keywords: Cognitive Science, neural and cognitive, academic program in cognitive science, cognitive science in Nepal, Tribhuvan University

Introduction

What is Cognitive Science?

Neuroscience is the science of brain and cognitive science is the science of mind. When they are viewed as one, we also have cognitive neuroscience. Reductionist school of philosophy views mind as the product of the brain and claims that everything that is mental can be reduced to everything that is neural. Whereas, Cartesian school of thought places mind above the brain as epitomized in Rene Descartes' famous statement "I think, therefore I exist". So, basically cognitive science is the science of cognition, science of thinking, the science of information processing mechanism in our brain. The world outside and inside us keeps sending information to our brain through various stimuli, the cognitive mechanism in us processing all these incoming information which creates cognition about what action to be taken based on the perception created by the input given by the stimuli. So, viewed from this perspective, the domain of cognitive science is to be viewed from "agent" and "task" perspective (Mekik & Galang, 2022). The agent may be human or non-human like animals or machines, where we talk of animal cognition and machine cognition (or machine learning, to be precise). Since the information for input comes from many stimuli in the external world, the cognitive processing is also seen from various perspectives that address the issues from as many angles as there are possibilities for stimuli to drive our cognition. Quite rightly,

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therefore, cognitive science is established as interdisciplinary study, traditionally comprised of linguistics, psychology, anthropology, philosophy, artificial intelligence and neuroscience (Núñez et al, 2019). Cognitive science has its own set of problems to address using its own set of tools, which are distinct from other unitary disciplines (Collins, 1977). The major problem areas that this field tackles are – learning, representation of knowledge, question answering, planning, problem solving, decision making, memory, attention, choice, image understanding, language learning, inferencing – the areas that our mind and brain constantly engage in.

When we argue for the introduction of an academic program in a university, it is also important to analyze its viability, the gap that it fills in the existing academic context, the contribution it will make to the society and humanity in general and to its own field in particular. Cognitive science is for everyone and it is about everyone – the entire humanity (Prather et al., 2022). Why should it matter for Nepal? It should matter for Nepal because so far, it is left out from the world scenario of making its presence when the leading universities of the world are offering this course, but there is no academic degree program for this course in Nepal in any university. Tribhuvan University being at the helm of Higher Education Institutes (HEI) in Nepal is rightly placed for initiating this program.

Cognitive Science Programs in the Western World

Cognitive science was conceived in 1950s, gestated in the 1960s, was born in the 1970s and 1980s through the research and publications devoted to this field - America dominating the scene. Its journal Cognitive Science was started in 1977 and the *Cognitive Science Society* was founded in 1979, first PhD granting department of cognitive science was created in 1986 in University of California (UC) San Diego. As of now more than 100 US universities run various programs in cognitive science – from undergraduate programs to PhDs and Postdocs, with the best universities like MIT, Harvard, Yale and so on taking the lead in cutting edge research. The top universities of UK like Oxford and Cambridge are setting examples in the cognitive science academic programs. In the mainland Europe, stand alone and independent Centers, Departments, Institutions and Schools of cognitive sciences and technologies are growing up and shaping the way we understand humanity and advancing the field by explicating the solutions to many unresolved problems of the past. Leading Australian universities are also running academic programs in cognitive science.

Cognitive Science in Asia

In the Asian context, the universities in economically developed countries like Japan and South Korea have advanced and extended the field. Universities in East Asian countries like Singapore, Thailand, Indonesia have also started conducting research in cognitive science and are publishing in reputed journals. In the west Asian countries, American universities like New York University have started their campuses and started academic programs in this field. Gradually, they are also picking up in the research. Universities in Israel like Hebrew University and Jerusalem University are pioneering the research in this field.

Closer to home, China is progressing not just economically but also in the areas of science and technology with leaps and bounds. In the recent days, the maximum number of scientific researches published in high impact journals have been from Chinese universities, thus showing a correlation between economic progress and scientific research output. Chinese Academy of Sciences and other leading universities of Beijing and Shanghai and across China are producing remarkable works in brain and cognitive sciences.

South Asia has remained relatively behind compared to the rest of the world, but it is catching up now with India taking a lead in this region. There is not much work in this field from Bangladesh, Maldives or Sri Lanka, except from their diasporas abroad, even though they are comparatively better off economically. Afghanistan, Bhutan and Nepal are yet to catch up, with almost no presence.

This is pertinent for us to take an overview of how India has taken up cognitive science. Department of Science and Technology (DST) under the Ministry of Science and Technology has streamlined four areas of science and technology as the pillar of 21st century – Cognitive Science, Nano Science and Technology, Biotechnology and Information Technology. The UGC India under its University with Potential for Excellence (UPE) program launched Cognitive Science in Allahabad University in 2004 creating Center for Behavioral and Cognitive Sciences (CBCS) starting with Master's and PhD program. following this, Center for Neural and Cognitive Sciences (CNCS) was created in Hyderabad Central University. These two centers have pioneered the academic programs and researches in the central universities of India. Looking at the success of cognitive science programs and realizing the need to promote it further and establish a strong foundation in the field, DST started Cognitive Science Research Initiative (CSRI) in 2008 under 11th Five Year Plan as a platform "to scientific community to work for better solution of challenges related with cognitive disorders and social issues through various psychological tools & batteries, early diagnosis & better therapies, intervention technologies and rehabilitation programs". Since the government of India is serious about promoting cognitive science and is doing everything to create the environment in which it can flourish by setting up funds and grants for the research, more and more higher educational institutions are offering cognitive science programs. Graduates of the Indian Institute of Technology (IIT) are known worldwide for their acumen in science and technology. Now, almost all the IITs all over India are offering Master's and PhD programs in cognitive science, with some IITs like IIT Gandhinagar specializing mainly in Cognitive Science. National Brain Research Center (NBRC) in Haryana is producing some cutting-edge research in brain and cognitive science. The researchers from these higher educational institutes in India are published in high impact international scientific journals – thus bringing laurels and name not only to their institutes but also to their country earning respect and reputation in the world stage of cognitive science.

Cognitive Science in Nepal

Cognitive Science is offered as one among six elective papers in BSc CSIT (in 6th Semester), Tribhuvan University Curriculum. Since this is offered as one of the six electives, students are not taught this course citing unavailability of teacher to teach this course. Anyway, this is an initiation at some point even though it is not taught and students have no idea what it is all about. Cognitive Science is offered as a compulsory paper in BE in Artificial Intelligence (2nd Semester) in Kathmandu University Curriculum. These two are the examples of introduction of cognitive science as academic program at the university level in Nepal. Actual research and training in cognitive science in Nepal is being carried out at the Cognitive Science and Psycholinguistics Lab, Central Department of Linguistics, Tribhuvan University, Nepal (first and so far, the only such lab in the country) started by this author in 2021 upon obtaining a PhD in Cognitive Science from the Center for Neural and Cognitive Sciences, School of Medical Sciences, University of Hyderabad, India.

Research in Cognitive Science and Psycholinguistics Lab: Initiation and Institutionalization of the Field

Academic research and training activity in Cognitive Science along with Psycholinguistics in Nepal formally started with the establishment of Cognitive Science and Psycholinguistics Lab in Tribhuvan University that initiated and institutionalized the field of cognitive science and psycholinguistics in the country (Pathak, 2022a). In a short span of time, after its establishment, this lab has produced some significant research in the field. A debate that is raging in Nepal is about the choice of language as a medium of instruction and mother-tongue activists advocate for the use of students' mother tongue as a medium of instruction. The team of researchers from this lab asked the question whether instructed in second language was detrimental to the first language. They used linguistic and cognitive tasks to test the students receiving instruction in their first language (Nepali) and second language (English) and found that use of second language as a medium of instruction did not have any negative consequences to their first language, rather it enhanced linguistic and cognitive abilities among the children receiving instruction their second language (Pathak et al., 2021). This lab tested the performance of language production in bilingual children (Pathak & Rijal, 2022), Stroop effect on high and low proficient Nepali-English bilinguals (Pathak & Pathak, 2022). This lab for the first time provided the evidence for the trilingual parallel language activation (Pathak, 2022b; Pathak et al., 2024) and how three languages interact simultaneously in the mental lexicon. It showed that the dominant languages are processed faster in the presence of weak third language. This lab collaborated in a multilab research project which investigated spatial cognition in 29 languages across 34 labs involving 45 researchers and scientists (Coventry et al., 2023). The Nepali data in this study was contributed from this lab.

Methodology used in Cognitive Science Research

Cognitive Science is all about "peering into" the human brain. One needs to measure the temporal and spatial representation and processing inside the brain. For this, one needs MRI, fMRI (now fNIRS) or MEG to locate brain regions activated during a particular task, that needs to capture the space of the brain in millimeters. And it also needs to record the time duration of activation in the brain as a function of a particular task or stimuli which needs to be recorded in milliseconds, for which electroencephalogram (EEG) and MEG are being used. Besides these, eye-tracking paradigm allows to measure cognition through oculomotor control by measuring the pupillometry as modulated by cognitive load, or saccades and fixations modulated by attention allocation (Huettig et al., 201). Cognitive Science and Psycholinguistics Lab uses MouseTracker (Freeman & Ambady, 2010) as its main tool measuring kinematic action control as one makes responses with the mouse-click which is mediated by experimental manipulation, linguistic as well as cognitive (Pathak et al., 2021; Pathak et al., 2024), which measures the responses generated by the brain in milliseconds.

Future Plans of Cognitive Science and Psycholinguistics Lab

In future, when resources become available and more people (read *students*) are trained to carried out the researches using the tools and techniques of cognitive science, the lab plans to carry out studies, but not limited to, the following research areas:

Language Acquisition and Attrition: Language acquisition and attrition are two ends of the same spectrum. There are not enough studies on first and second language acquisition that could help us inform the production of educational materials and also inform the educational policy. Under what circumstances does an individual lose one's own native language and shift towards the second language? These are the questions that the lab will seek to find answers in future.

Language Pathology – Aphasia, hearing and speech disorders: Speech and Hearing Unit, under ENT Department at Tribhuvan University Teaching Hospital caters to the need of speech and hearing disorders from clinical perspective. But we need more basic research in language pathology, aphasia and, speech and hearing disorders. This lab intends to extend this research in future.

Autism: Autism Spectrum Disorder (ASD) is a disruption in information processing mechanism in the neural system of a growing child which impairs normal functioning of the child in adulthood. Currently, Nepal is witnessing an alarming growth of ASD cases and many Autism Care Centers have sprung up across the country. But they are all impaired by the lack of right research tools and mechanisms to understand the real nature of autism. Since there is no cure for autism, we need to diagnose the child on cognitive measures for rehabilitation. The research tools and methodology from cognitive science is aptly suited to study autism cases which the lab plans to undertake in future.

Dementia: Dementia is ageing related neurodegenerative disorder that afflicts many older populations creating discomfort to the sufferer and also the family members. No new memories are formed and older memories slowly give away rendering the individual helpless and requiring others to take care of them. There is no medical cure for dementia. Researches in bilingualism and multilingualism have shown lifelong practice of bi/multilingualism can protect one against the early onset of dementia (Alladi et al., 2013; Bialystok et al., 2007). Cognitive Science and Psycholinguistics Lab is aptly suited lab to conduct such researches in future.

Sign Language Processing among hard-of-hearing: There is a large number of populations in Nepal which is deaf or hard of hearing, roughly estimated as nearly one million. They use sign language to communicate with each other. So far, no cognitive study of Nepali signers has been done to test how they process the linguistic sign, how audible phonetic symbols used in everyday speech is converted to visual signs for communication. Does this negotiation create any cognitive restructuring in the brain needs to be explored through the cognitive science tools that lab has in its future research agenda.

Dyslexia: Dyslexia is another neural disorder that impairs a child from learning to read and write written words as the child is not able to make grapheme to phoneme relationship which impairs the child from acquiring literacy skills and the child gets disadvantaged in life by not being able to get higher education and make it to the higher stations of life. Nepal needs researches in this very neglected area of research which needs immediate attention (Pathak & Dahal, 2010) which can be carried out through this lab.

Bilingual and multilingual processing: Nepal is aptly situated to conduct research in bilingual and multilingual processing. This is also the mandate of the constitution of Nepal which recognizes Nepal as a multilingual state. So, it is also important to conduct the effect created by bilingual and multilingual situation. This lab has already started conducting research in this field (Pathak et al., 2021; Pathak, 2022b; Pathak et al., 2024). More researches are required to be conducted to understand the linguistic and cognitive implications of bi/multilingual situations in the country.

Language-cognition interface: There is a debate whether language and cognition are independent of each other or they are dependent and intricately connected with each other. What elements of language creates cognition or what elements of cognition creates language are interesting areas that the field of cognitive science can best answer.

Artificial Intelligence/Machine Learning/Computational Modelling/LLM: Large language model (LLM) based technologies like ChatGPT have blurred the distinction between human intelligence and artificial intelligence. The question of whether we can make non-human agents like machine use language the way humans do have becoming pressing and pertinent (Mahowald et al., 2024). At the same time artificial intelligence as a tool for doing cognitive science is emerging equally strong in the present time (van Rooij et al., 2023). In future, the lab intends to explore these areas when the expertise and the competence of the lab members develop through exposure, practice, training and education.

Forensic Cognitive Science – Lie Detection: Cognitive Science can serve as best field of study for the professionals like police departments in enhancing the skills of crime investigations by learning how lie dection can be studied using the tools, techniques and methods of cognitive science (Frank et al., 2003; Vrij et al., 2011; Maleck & Gross, 2023). Future research in the lab will explore this area as well.

Business and Entrepreneurial Cognition: What makes an efficient entrepreneur? What should be or is the mental make up and mindset of an entrepreneur? How can the field of cognitive science inform business and entrepreneurship? Are some of the questions that cognitive science seeks to answer (Zichella, 2017; Mitchell et al., 2002; Mitchell et al., 2007; Dew et al., 2015). Some business and management undergraduate students are expressing their interest in doing research internship in the lab. Training and mentoring them is already underway.

Why the need for academic program in Cognitive Science?

The research areas outlined above is not possible to be accomplished with the limited resources of a lab and limited human resources. It needs a fully developed academic program starting from undergraduate to Master's to PhD programs with well equipped research infrastructure, and trained faculty members in teaching and conducting research in cognitive science and who can train and mentor students as well. Since this is a fast-growing field worldwide and in our own neighboring countries also it is high time that we catch up with the world and not left behind. Cognitive Science as an academic discipline has not taken ground in Nepal yet. So, with whatever limited resources we have we need to start and try to build up our resources and expertise.

The field of cognitive Science has been largely dominated by the western world. So, the findings of the western world may not be all applicable in our context. So, it is important we test the existing theories and models of cognitive science in our context. This way we will also be able to contribute to the field of cognitive science from our part of the world as well, which will help the field grow and give us an opportunity to make our mark in this sciencescape. There is a demand that the theory and data must represent entire humanity (Prather et al., 2022; Bryan 2021) and we also need to be able to run the global laboratory of the future (Dutra 2021).

Why Tribhuvan University?

Tribhuvan University is the mother-of-all-the-universities-in-Nepal. The physical infrastructure and human resource of the university is unmatched and unparalleled with any other university in the country. This is also the largest and the first public university which produces over 80% of the graduate human resources for the country. The first seed of cognitive science has been sown in this university with the establishment of the first such lab of the country and high impact researches are already being published in the international scientific journals of the field. So, the time is ripe for Tribhuvan University to run research based academic program.

Conclusion and Future Direction

For a leading university like Tribhuvan University, it is important that it takes the lead in the introduction of cognitive science, the fast-emerging discipline of the 21st century and for which there is a market demand and has the possibility for opening up many interrelated areas of research in the future. Not just theoretical research there will be market for the application of the services based on cognitive science in diagnosing cognitive disorders and to conduct basic researches in the applied field. Applications of cognitive science should benefit people.

Immediate steps should be taken to initiate the process of launching the program by creating infrastructure and designing the course that can cater to the needs and demands of the society and the market. But it should be kept in mind that it should not be like any other traditional type of course. It should be designed to produce capable scientists of the field who can answer the problems of the future.

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Cultural Connection of Border Literature in Harka Gurung's *Vignettes* of Nepal

*Mani Bhadra Gautam**

Abstract

Culture is a part of social practices interlinked to the cultural activities that connects people and literature of a society or a cultural community under the umbrella of social/socio-cultural activities. There might be different kinds of cultural groups within a same geographical border. Here, border refers to both the cultural community's line as well as geographical territory. Many people respect to each-other's culture but some of them disrespect borderland culture and literature that creates social disharmony in the name of cultural identity. Culture is a part of literary activities that helps to generate the literature and every literature is based on the culture. Harka Gurung's Vignettes of Nepal incorporates twenty essays based on different geographical borderlands, cultural practices and literature. He begins his essays from west of Kathmandu and concludes them coming to the east. In this study, this researcher selects particularly a few essays based on cultural borderland. Border, culture and the literature are inseparable and so this study is on cultural cum ethno-geographical methodology as it studies to the behavioral things of the people of the different cultural communities. Objective of this paper is to show the connectivity of literature in the cultural borderland. To achieve the research goal, this study centers on historical places and observes cultural practices in Nepal. Researcher has applied Mary Anderson and Dor Bahadur Bista's ideas as supporting tools to the research. Finding of this paper is that the cultures of the borders are key subjects to generate the literature.

Keywords: Historical places, cultural community, border, culture and literature.

Introduction

Harka Gurung's *Vignettes of Nepal* zooms in an entire picture of Nepal. He visited to the different geographical territories of Nepal between 1960s to the 80s. It is an account of his life and works based on his travelling throughout the country, observations of the cultural performances in different geographical borderlands and writing about them. It looks like a travelogue of a renowned geographer who accompanied with artworks in the hills, mountains and the plains of Nepal. He takes the geographical and cultural connection between people and places in the border lands of Nepal as an inseparable part of border-cultural relationships. Major cultural groups in Nepal are Gurung, Magar, Thakuri, Thakali, Tamang, Tharu, Chepang, Khasa-Aryan and the religious communities are Hindus and Buddhists. Dr. Gurung rightly studies about them and writes about

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their cultural practices. He predicts on the overpopulation problem of Tarai that affects to the growth of culture and literature. The problem occurs in the management of residential, agricultural and an industrial area for them. Socio-cultural adjustments, cultural connections and transformation are other problems of the new geographical location. Management of food, shelter and other facilities to them becomes hard to manage because of the mass migration of people from mountainous and hilly areas of Nepal to the Tarai. People migrate there for easily available services of the daily need accessories and the modern facilities. Gurung's essays leave the message to the concerned authority to solve the problems of cultural practices, shelter for them and the food crisis. All the issues are mentioned and some of them are addressed in the *Vignettes of Nepal.*

Cultural History, War Literature and Geographical Boundaries in the *Vignettes of Nepal*

Harka Bahadur Gurung, scholar and geographer of Nepal loves travelling, observing the cultural activities and writing about them. In his travelling to the different geographical borders and cultural places, he collects information about people, places and things. On the basis of field-based observation and information collection, he writes about culture, border and literature. Himalchuli, Sagarmatha, Mustang, Dolpa and Manaslu are major geographical locations that Gurung writes about in his essays. He writes in the *Vignettes of Nepal*:

> The snow peaks of Manaslu and Himalchuli loom large just twenty-four kilometers north of the village. Thula was born in Taranche where his father has established himself well through his earnings as a Gurkha soldier. The old man has been to France and Palestine during the first world war and had been mentioned in dispatches during the Waziristan campaign of 1919. Thula's two elder brothers had seen battles action in the jungles of Burma and Borneo during the Second World War. Two generations of soldiers in the family had quite a collection of war medals and Thula would listen enraptured to their material exploits. He was equally fascinated by their description of strange places and peoples in far off lands. ("The Initiation", 1)

Cultural representations, games, sports and related performances are in environmental connection to the people. Gurung's essays include the geographical locations and the subjects of wooden hills with snow ranges. Cultural events are interconnected even with animal's activities and the men-animal based performances in relation to the people as they are culturally performed. Gurung brings his Thula Baba, uncle Thula's stories frequently to describe about then cultural practices. Thula (socially respected word addressed to the big and honored one of the family or a community) and the boys play games, "supposed to be a thief crow and other boys small nesting birds" ("The Initiation") (2). Egg stealing and climbing the tree games are really interesting as they are known as a part of culture in the community. It also includes the stories of war literature through the narratives of Thula who had seen battles action in the jungles of Burma and Borneo that helped to create the war literature based on life love and the wars. Geographical locations and weather changes are other interesting things included in the narratives that create an impact on cultural activities. People practice sitting in the different geographical parts and continuing their activities according to the seasons that are clearly shown in Grung's *Vignettes of Nepal*.

Farmers come down from upper parts of the mountains and Himalayas to the lower parts of the geographical location with their cattle, sheep and horses to graze in the village field in the winter season. They celebrate the socio-cultural festivals in home and temples frequently with butter, cheese and ghee of the cows and sheep. Friends and family reunion of the carnivorous people are really enjoyable with meat in the festivals like Dashain and Tihar. Some of the bad practices in the society are hunting/killing birds and animals as written in Gurung's essay, ". . . it was customary for the elders to go hunting for deer, bear and wild boar in the autumn" (Gurung 2). In addition to the cultural practices of killing birds and animal they collect antlers and horns to intact home decoration.

Longer tail monkey and deer dances are the parts of mountain culture in literature. Bears, leopards and *Ban Jhakri's* connections with people make the cultural literature more interesting in the border. They are as mentioned, "Thula made a lot of smoke in the hut to frighten away wild animals and the *Ban Jhakri*. He was really scared when he heard whistling sound in the evening, for he had been told that the *Ban Jhakri* usually whistles" (Gurung 2). *Ban Jhakri,* Thula and the shepherd's relationships are here turned to be a frightening matters as cultural practices to observe and follow to the children. They practice to escape away from not only the wild animals but also from the wild beasts and evil spirits. Colorful dresses and the skins of animals worn among the people of the cultural communities can be historical documents as they are not much practiced in the present. Senior citizens try to train the young age people in cultural practices that is practiced from earlier generation that helps to generate the cultural literature as included in the *Vignettes of Nepal*.

Gurung in the Critic's Eyes

Critics remark him as a geographer and a development planner. He has studied broadly about geography, artworks, culture and literature within different geographical territories of Nepal and abroad. He writes to historicize the geographical boundaries, national heritages and cultural activities. He is a path finder of cultural identity movement. His academic height helped him to create a reputation in the wider space of geography as an advocator of the geographical and cultural issues. He writes about Indo-Nepal open border and exposes the issues of ignored fate from the side of Nepal. He invites people for public discourses to make on the problems seen between the 1980s and 1990s. In this regard, Devendra Raj Panday in *Nepal's Failed Development: Reflections on the Mission and the Maladies,* published in 1999 writes, ". . . the engaged-intellectual of the 1990s" (Panday 3). Devendra Raj has rightly observed him as an intellectual who engaged in academic endeavors, socio-cultural activities and geographical issues. As an honest secretariat and leader of the Civil Right movement of Nepal, Panday rightly takes Gurung as a development practitioner. He claims that Gurung ". . . strongly speaks for nation but many other intellectuals are just engaged in minor issues" (Panday 4). Pandey's claim proves Gurung as a national hero and an advocator who speaks for the geographical territory, arts, culture, literature and the National identity.

Panday tries to connect Gurung's activities with Dor Bahadur Bista and writes, "Bista's *Description of Fatalism and Development: Nepal's Struggle for Modernization* was first published in 1991, but it began to fire the imagination of critical thinkers only in the late 1990s" (Panday 4). Panday claims that Gurung's works trace out the road maps like Dor Bahadur Bista's visionary works for Nepal's Development. Professor Chaitanya Mishra, like Panday, has rightly appreciated his works and he followed his way of writing for national identities, culture and the border. He rejected immature decisions of the authorities as he has a vision for powerful state mechanism. Gurung is also a politician but his politics is for prosperity of Nepal and Nepali citizens. Mahesh Chandra Regmi writes, "Unlike dissemination, production of knowledge is a thankless task away from the limelight of public adulation" (Regmi 6). Regmi acclaims that his works are the sources for knowledge production among the people. In a public forum they speak for equality. Panday, Mishra, Bista and Regmi claim that Gurung's *Vignettes of Nepal* rightly helps to escape away from intellectual wasteland. Cultural issues are explored through the narratives of pundits and well-trained Hindu scholars who advocate for religious campaigns.

Theoretical Underpinning

Intellectuals have numbers of judgements upon Gurung's planning and his works. Sardar Bhim Bahadur Pandey and Yadunath Khanal take him as an "entering of moral hero" (Pandey & Khanal 4). They evaluate him on the basis of his works. In his book, he points out on the weaknesses of road extension in the Himalchuli, Sagarmatha, Mustang, Dolpa and Manaslu areas. He advocates against inequality in distribution of the national property. He argues that there must be equal distribution of the resources and the infrastructure development that is must in every geographical location and the national territory. His excessive concentration on the issues of development projects helps to interlinks between the Kathmandu valley and the mountainous areas of Nepal. Hilly and the mountainous areas are in the bulk of population growth where the food scarcity is grave problem. There is a lack of food supply as there is not easy access of transportation and the communication. The food and nutrition problems are to be solved from food-surplus of *Tarai*. *Tarai* belt is the production potential area of Nepal that suffered of mass moving of the people from hills and mountains in search of food and modern facilities. Gurung advocates from the side of national developers who bring out the planning for solution of the problem with the way-out road extension in the hilly and mountainous areas.

Cultural connectivity and hybridity help for socio-cultural inclusion. Developers start the works for road extension that helps for travelling and transportation that is mentioned in Gurung's essays however they are insufficient up to now. Travelling for the behavioral observations and cultural studies of the people's performances help for multi-cultural connection of the geographical and the cultural borderlands. He argues ". . . regional inequality is one of the major development challenges in Nepal" (Pandey & Khanal 37). Gurung is an intellectually fueled geographer incapsulated with widely visionary thinking among the intellectuals. He argues for the changes in policy level to bring that is important in Nepal.

Harka Bahadur Gurung points out to the activities of the national planners whose biased road maps create a problem to interlink between Kathmandu valley and the other parts of Nepal. He questions on the weak linkage of the roads and connection problems between the food-deficit hills and the food basket *Tarai* where the bulk of the people are living. Gurung speaks also for the problem of Karnali sector and advocates to interlink the road from Nepalganj-Surkhet to Dailekh. Surkhet-Jumla road construction is another way to link the far-west zone. Dhangadhi-Dandeldhura link also is an additional north-south link to make easy access in food supply. Gurung in his article, "Nepal, Regional Strategy for Development" writes:

> . . . the space-economy and cultural connection of Nepal is more articulated now than during the 1970s but the growth dynamics in peripheral areas as envisaged in the regional development strategy remains far from realized notion. Location specific potentialities remain unexplored and the "development package" that should have accompanied the laying out of roads is conspicuous by its absence. (Gurung 7).

Gurung's focus is on space-economy and cultural connection of Nepal. He articulates the things in our history with an objective of road extension. Subsequent plans in the road extension and physical development helps for cultural connection that finally produces the border literature. Gurung identifies basic ideas in national developments and border-culture activities. Thus, laying the foundations in clearing the way out for development of the borderlands, this paper outlays basic foundation through Gurung's *Vignettes of Nepal*.

Power exercises of the rulers also created some problems among the people of the different geographical locations. Unequal distribution of the national resources in the hilly and mountainous area of Nepal brings a great loop hole national development and so the people from these locations try to migrate to the safety areas where they can manage the food and shelter safely. Another problem to dislocate the location or to shift the people from place to place is the weather condition of the different geographical places. Internal wars, geographical condition and the problems in food supply are the issues mentioned in the border and culture literature of this geographical boundaries. Gurung writes:

> The hill fort is now in ruins but during the medieval times following the decline of Khasa empire of Jumla, Doti was one of the powerful kingdoms in the far west. Ajmerkot of Dadeldhura is credited to Ajayapal who ruled Doti during the 14th century and had his summer capital at Ajmerkot and winter capital at Dipail. Doti rule extended north-west as far as Johar and Darma and Kumaon until 1581 A.D. when Kumaon rulers of Chand dynasty re-established their authority. There were constant wars between Doti and Kumaon through the next two centuries and it was to the last two decades of the 18th century, that a Gorkhali force under Ranbir Khatri defeated the then ruler Dip Shahi and finally annexed Doti to the expanding Gorkhali empire. ("West of Kathmandu" 12-13)

Gurung highlights to the wars between Khasa empire of Jumla and Doti. He takes the empire as a powerful kingdom of the west. Gurung also talks about Ajmerkot of Dadeldhura that extends up to north-west in Johar. Gurung highlights to the long live enmities of the geographical territories as the war of borderlands. He writes a travelogue about his personal experiences and the group sights. Collected experiences about other beautiful places are, "We had brief halts at Dhangarhi and Bhairawa and white peaks of Dhaulagiri, Annapurna, Ganesh and Langtang floated above blue ridges and brown hills as we flew east wafted by the strong westerly afternoon wind" ("West of Kathmandu" 17). Gurung's glimpses and memories about the beautiful places are written documents to historicize about the people, places and things. They are historically and culturally important documents that describe about the borderlands. Professor Kamal Prasad Malla also praises on the tours and travels, works and write up of the national geographer Harka Bahadur Gurung.

Professor KP Malla, 1936-2018, is an intellectual of Nepal who writes actively between 1970 and 1990. In the essay, *The Road to Nowhere*, he writes, "Harka Bahadur Gurung, 1939–2006, was a geographer, a development planner, an anthropologist and a gifted author" (Malla 93). Malla's writing supports to the discourses made on *Vignettes of Nepal* throughout the 1980s. Like as Professor KP Malla, Devendra Raj Panday writes, "Restoration of parliamentary democracy in 1990 turned out to be what Faiz Ahmad Faiz had lamented as the 'night-bitten dawn' at the time of Indian independence." (Panday 4). Panday takes Gurung not only as a geographer and a development planner. He takes him as a politician who is aware in the international politics, too. Like Panday's remarks, Dor Bahadur Bista's *Description of Fatalism and Development: Nepal's Struggle for Modernization* also supports the claim. In addition to the above-mentioned reviews, a prominent scholar, an accomplished translator, socio political critic and a respected teacher Khagendra Sangraula turns out to be a reflective on humanistic characteristic of Gurung. He writes, "Having been a learner in the 1960s, a reader in 1970s, an observer in 1980s and a chronicler since 1990s, I find the absence of a woman, a Dalit or even a Madhesi" (Sangraula 42). Sangraula appreciates on Gurung's historical studies who historicizes the buried memory of unburied history but he criticizes on the loop hole seen in his research and writing regarding gender, culture and location.

Result and Discussion

It is difficult to pinpoint on the socio-cultural, economic and environmental dimensions that Gurung indicates in the *Vignettes of Nepal*. This article tries to make a coverage firstly on Gurung's travelogue, secondly to the cultural heritages and thirdly to the geographical boundaries. The study is purely based on qualitative research technique for critical analysis. It focuses to the loop holes left on the linkage of cultural activities of the different geographical boundaries. Tourism development can help to bridge between the geographical knowledge and the cultural practices. Tourism activities, feasibility studies and development planning are the study issues investigated in this research paper. This paper questions on the weaknesses of government mechanism, planner's biasness and other problems that people living in the hilly and the mountainous area are facing regularly. This study highlights also to the unequal distribution of the national resources and questions to the unequal treatment of the concerned authority.

This paper raises the issues of very poor infrastructure built on the way and the home stay places; such as traveling facilities, porter's management for the traveler's baggage's supply and food services. Major problem is occurred because of the lack of transportation facility. Travelers face the road difficulties and problems in medical facilities for health treatments, too in the mountains and the hilly areas. The government agencies fail in institutional supports to the planners and the travelers. Crucial challenges have to be faced to meet the bridging points of the culture and literature of the border. Home stay practices help in the close observation of the cultural practices and performances for the ethnographical study of the behavioral activities and attitudes of the people. The possibilities in interlinking between culture and border literature are clearly shown in Gurung's essays. Tourism profession also helps in creating an employment among the local people that helps to increase the capital income. There are numbers of tourism areas discussed in Gurung's essays and Ghale Gaun is one of the places this researcher has collected same kind of experience. This researcher grabbed some opportunities to know about their cultural performances. The observation made on the cultural performances and dialectics used in the communication among the locals and the travelers helped to know for the cultural changes. Importance of cultural values practiced in the different socio-cultural communities' influence people to make an observation, study the things, investigate, preserve and apply the positive aspects on tourism.

Travelers love to know about cultural connections of the people living in the different geographical boundaries. They see and observe on the fashion, hymns, songs and dances that are practiced in the local communities help for the cultural connection. Tourists love to pass the time in home stay to research and explore the tings of the different geographical locations. They choose the local residences as, "to study about their traditional cultures and local people's way of life" (Tsundoda & Mendilinger 14). Tsundoda & Mendilinger focus on the interest zones of the tourists. Similarly, Pandey, Chettri, Kunwar & Ghimire make critical reviews analyzing to their cultures and costumes. Cultural differences of the different geographical territories, especially the Ghale Gaun people. Travelers in their journey love to exchange the things as gifts. They love to exchange cameras, chocolates, clothes and the home-made handicrafts. Travelers are eager to carry on the home-made products. The exchanges of the things increase the love and develops a close relationship among them. Foreigners might induce changing their products with the local productions. They seem funny in the traditional dress up. Among all the things, the food habits of the locals along with the new way of living standards are researchable.

Numbers of travelers enjoy sight scenes of the mountains, Himalayas and the home stay area that are recorded as a cause for financial sustainability of the people in the concerned area. It has many positive impacts in the changes of life style of the people there. It has some negative impacts, too, as it increases in drug addictions, growing prostitution and consequently it can divert the society towards the criminal activities. Gurung seems worried in increasing environmental pollution, youngster's interests in taking drug and social disharmony. He quotes, "Construction of hotels and resorts near the heritage sites cause to lose the beauty of historically significant monuments and buildings" (Banskota & Sharma, 95). Modernization has invited the concretization and the modern gadgets invite environmental pollution. The fresh environment of the mountainous and the Himalayan areas also has been polluted. Excessive use of the chemicals and different kinds of pesticides have turned the greenery of the fertile land to the deserted area. Excessive cutting of the trees for firewood and throwing tin and plastics everywhere destroy the fresh environment. A research shows, “Consumption of firewood in Annapurna Conservation Area Project (ACAP) by tourist is twice the consumption of firewood by local people” (ibid ii). The available information show that the haphazard and unplanned development has destroyed the environmental things. We are compelled to face the world environmental challenges in the resent years and that is also a serious issue in Nepal, too. Therefore, we have to turn to the bio-centric path to guaranty the future of all the people, birds, animals, living beings, their culture and their literature, too.

The sharing and caring of the travelers have also indicated increasing social and familial solidarity. Written and translated version document of English translators of Himalayan literature publish books in English work as the sources for travel information to the foreigners. The information resources work for guiding the tourists. Travelogues have helped to inter-link between the border and cultural literature. The travelers, geographers and the explorers have given us various guidelines to know about the cultural heritages, people and the places. Ecological-consciousness of the climbers highlights on the spiritual meaning of our fragile heritage what travelers can feel in the mountains and the Himalayas.

Conclusion

Harka Bahadur Gurung’s *Vignettes of Nepal* clearly portrays the picture of early to mid-21st century Nepal. The travelogues are related with the dialogues made among Nepali travelers, local people, tour guides and the tourists from abroad. Many travelers are in the problems because of the geographical difficulties and the weak access of the road linkages in the mountainous and hilly areas of Nepal. The helpless travelers expect to get a help from the local people. Travelers love to make their journey joyful in everyday traveling. They bring the myth and mystery together as we don’t see and feel in our day to day activities. Travelers observe the things in deeper level as their experiences about the world are highly experimental. Harka Bahadur Gurung makes us aware about cultural and geographical borderlands. He connects artworks, arts, culture and creatures of the different geographical boundaries in his book *Vignettes of Nepal*.

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Internal Quality Assurance (IQA) and External Quality Assurance (EQA) in Higher Education Institutions: Relevance, Challenges and Opportunities of Quality Assurance and Accreditation (QAA) System in Nepal

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*Min Pun***

Abstract

The higher education institutions (HEIs) of Nepal are currently facing multiple challenges, ranging from low enrollment, brain drain, low employability, and student dropout to financing management dilemma, politicization, poor governance, low tech-friendly administration, and infrastructure mismanagement. These issues have posed serious challenges to sustainability, quality, and relevancy of higher education institutions. To address these challenges, quality assurance (QA) system (in Nepal's case, Quality Assurance and Accreditation [QAA] system), more specifically internal quality assurance (IQA) system, has become a global trend among academics that can be considered a measure and control for internal institutional reform to enhance the performance of HEIs. Thus, this paper aims to examine the QA system or QAA system of Nepal with reference to the international practices of maintaining quality in higher education. The paper focuses on the changing policy landscape of the QA system, considering the scope, significance, and functions of the IQA system within HEIs. The findings of the study indicate that the universities in Nepal are lagging behind the times, in initiating the IQA system by the universities themselves although some HEIs under their administration have started participating in the process and many of them are being accredited by the University Grants Commission, Nepal (UGC), Nepal, which is playing the role of external quality assurance mechanism.

Keywords: Higher education institutions, quality assurance, internal quality assurance, external quality assurance

The Context

The University Grants Commission, Nepal (UGC, Nepal)'s Educational Management Information System (EMIS) Report - 2021/2022 (2023) shows that there are a total of 579,488 students enrolled in 18 universities, including central universities, medical academies, and provincial universities. This figure is significantly higher as compared to the same report for the year 2020/2021, in which the student enrollment was 460, 826. Although the increasing figure has

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been reported, the reason behind this increase has not been discussed in the report. At the same time, the media coverage has reported that a number of students in higher education institutions (HEIs) of Nepal are gradually decreasing (Upreti, 2023; Ghimire, 2023; Baral, 2024). Apart from this trend of enrollment crisis, the Nepali HEIs are passing through multiple challenges including brain drain (Mainali, n.d), financing dilemma (Wagle, 2023), mismanagement (Regmi, 2019), politicization (Poudel, 2024), student dropout, poor governance, less availability of technology, poor infrastructure, low employability rate (National Planning Commission, 2020) and many others. The issues mentioned above have serious other challenges such as sustainability, quality, and relevancy of Nepali HEIs.

The quality assurance (QA) system, namely quality assurance and accreditation (QAA) system in Nepal, in higher education is a widely accepted tool by academia as a cornerstone in maintaining the academic programs and the institutional quality of HEIs, though it has also been criticized as an instrument of neo-liberal policies that promotes privatization and marketization of education (Lawton, 2019). The available literatures have more often positively correlated the significance of QA system in improving the curricula, teaching-learning method, institutional performance, good governance, graduate employability, and other educational dimensions. However, there are also arguments that the reform is not at the level of expectation (Moshtari & Safarpour, 2023). In many countries across the world today, educational policies have incorporated the QA system and its performance by academia that has become a determining factor in receiving the government funds, global recognition, and employability of graduates. However, one should not be unaware of the arguments that the system has given space for bureaucratic interference over academia and limiting their autonomy (Travers, 2007; Cardoso et al., 2018). In fact, this is one of the biggest challenges for higher education in Nepal.

The QA or QAA system in Nepal was first introduced in 2007 as part of the World Bank funded Second Higher Education Project (SHEP). The system has been gradually expanding today since there are 92 accredited and 11 re-accredited HEIs for the second cycle (UGC, 2020) to date. Likewise, a number of participating HEIs in the QAA process is over 330, proceeding through different stages such as Letter of Intent (LoI) submission, Self-Study Report (SSR) submission, pre-assessment completion, and final peer review completion (UGC, 2023). Out of a total of 1455 HEIs running in Nepal, above 850 HEIs have less than 200 students, but there are many HEIs which have less than 150 enrolled students, which is a threshold to be eligible to participate in the QAA process in Nepal (UGC, 2023). Despite the fact that the UGC, Nepal has started the quality assurance initiatives in HEIs in Nepal and is recognizing some of them as accredited institutions, there are several problems with the system.

The QA system in many other countries is seen to be composed of two sub-systems: Internal Quality Assurance (IQA) and External Quality Assurance (EQA). The IQA system is an internal mechanism of HEIs that continuously looks after the quality maintenance and control undertaken internally, which existed before the idea of EQA was introduced (Ansah, 2015). The EQA, on the other hand, is a more formalized external system by which the quality of HEIs is recognized periodically. Such system may consist of the government bodies of professional bodies such as the UGC, Nepal. In Nepal, UGC, Nepal is seen to be prioritizing the establishment of IQA mechanism in all kinds of universities and their HEIs, including colleges/campuses, central departments, and medical academies. The UGC, Nepal has issued a suggestive IQAC directives (UGC, 2020) in this regard, highlighting the composition, roles, and responsibilities. While visiting the websites of 18 universities of Nepal, Tribhuvan University (TU) has established the mechanism under the name of 'Quality Assurance and Accreditation Centre (QAAC)' (2024). However, this name does not match with the principle of IQA system since TU cannot accredit itself. This is because "accreditation is a process of external quality review created and used by higher education to scrutinize colleges, universities and programs for quality assurance and quality improvement" (Eaton, 2015). TU's QAAC shall work for internal quality improvement, but cannot accredit itself because accreditation is awarded by an external body to recognize a university for quality assurance. There are also other instances of quality assurance bodies within the universities in Nepal. They include Far-Western University (FWU)'s 'Quality Assurance Committee' (QAC) and Mid-Western University (MWU)'s 'Quality Assurance and Accreditation Division' (QAAD), which are under the QA framework of 'Enhancing Quality Assurance in South Asia' (EQASA) although the EQASA framework does not match with the QAA system of UGC, Nepal. Many other universities have neither established such a mechanism nor they have participated in the QAA system of Nepal. However, in the case of the QAA system participating HEIs, the establishment of 'Internal Quality Assurance Committee (IQAC)' is mandatory since it is the first step towards the participation in the QAA system in Nepal; thus, the formation of IQAC is one of the pre-requisites for the submission of LoI if any HEI wishes to participate in the QAA framework.

The overall discussion above reveals that although many HEIs such as colleges/campuses, central departments, and academic programs have participated in the QAA process of UGC, Nepal, demonstrating that the IQA system is not much familiar with Nepali universities. For instance, in the universities of developed countries, including a few South Asian countries, the IQA system is a highly prioritized mechanism to maintain and control the quality of higher education. Thus, the main objective of this paper is to examine the QAA system in Nepal with reference to the initiatives undertaken by the UGC, Nepal, focusing on the changing policy landscape of the QAA system, and considering the scope, significance, and functions of the IQA system within HEIs.

The Quality Assurance System: International Practices

The QA system is a mechanism that seeks to build confidence of stakeholders of the HEIs by ensuring their credibility gained through continuous execution of activities that contributes to creating a quality culture. Such stakeholders include but not limited to the government, students, faculty members, management, employers, parents, and many others. In this regard, Kayyali (2023) argues that the QA system in higher education encourages continuous improvement by establishing feedback loops and evaluation processes. Therefore, accreditation facilitates in appealing new enrollment, upholding institutional branding, aligning educational objectives and market needs, and safeguarding the interest and confidence of students and stakeholders.

In Nepal, the concept of QAA system carries two different meanings, yet they are interrelated to each other. The term 'quality assurance' is a broader concept, referring to continuous improvement in the institutional academic and administrative management by HEIs internally to satisfy the need of its service receivers while the term 'accreditation' is the recognition of the quality culture that prevails in the HEIs by the external quality regulatory body or approved professional agency. In this case, it can be assumed that 'quality assurance' is more of internal and continuous improvement process while 'accreditation' is external and periodic phenomenon. Since higher education is considered the backbone of nation's economic development and societal progress, the governments around the world have prioritized ensuring quality enhancement of their HEIs through the minute measures undertaken to assure that those are competitive enough in the educational markets (Martin & Stella, 2007; as cited in Alzafari & Ursin, 2019). Accreditation in general is carried out in two levels: academic program accreditation and institutional accreditation. According to UGC, Nepal (2020a), academic program accreditation focuses on the content and coherent of the academic programs offered within the HEIs, its relevancy, intended learning outcomes, participation, and revision mechanism, etc. On the other hand, institutional accreditation focuses on the overall institutional governance, teaching-learning effectiveness, intervention in research and innovation, infrastructural facilities, and student support system offered to students and faculty members, and institutional transparency and sustainability maintained in the HEIs, among others.

The nature of QA system varies across the world; however, the core focus is the same: promoting a quality culture. For example, in the United States of America (USA), the government does not directly involve in accrediting the HEIs, rather recognizes and facilitates the accreditors in an indirect way. In this connection, Eaton (2015) states that "accreditation is carried out by private, nonprofit organizations designed for specific purposes. External quality review of higher education is a non-governmental enterprise" (p. 1). He means to say that the Council for Higher Education Accreditation (CHEA) or United States Department of Education (USDE) provide a recognition to such accreditors. In Europe, QA in higher education is typically overseen by various agencies at both national and supranational level. Such agencies exist both in private and public nature; however, public agencies have a government oversight and operate within an established regulatory framework. In this case, the EQUIP's (2015) 'Standards and Guidelines for Quality Assurance in European Higher Education Area [ESG]' is one such framework. It says that all public accreditation agencies are obliged to follow ESG apart from the country specific regulations. Although private accreditation agencies are independent in nature, they also align their standards with national and international frameworks to ensure consistency and credibility. One of the most notable bodies responsible for accrediting and ensuring QA in European higher education institutions is the European Quality Assurance Register for Higher Education (EQAR). The EQAR is an independent organization that maintains a register of trustworthy QA agencies operating in the European Higher Education Area (EHEA).

The context of QA system in Asian countries is not that far from the international practice; however, the system is diversified among the countries. For example, in China, Higher Education Evaluation Centre (HEEC), and China Academic Degrees & Graduate Education Development Centre (CDGDC) are the major governmental assessment agencies to evaluate the quality of HEIs followed by Shanghai Agency for Education Evaluation and Jiangsu Agency of Education Evaluation, a non-governmental agencies (Shuiyun, 2018). The Vietnamese QA system is similar to the US QA system, where the Ministry of Education and Training (MoET) oversees the accreditation agencies, may it be established under the public or private ownership (Do et al., 2017). In India, the QA issues of HEIs are overseen by National Assessment and Accreditation Council (NAAC), National Board of Accreditation (NBA), and All India Council of Technical Education (AICTE), which are autonomous professional entities under the University Grants Commission (UGC) of India (Manimala et al., 2020). In Nepal, to date, there is no provision for non-governmental or private sector accreditors to regulate the QA matters in HEIs.

The QAA System as External Quality Assurance (EQA) System: Nepali Practice

The establishment of QAA system in Nepal has surpassed 15 years and it is gradually expanding its activities. The system has received a wider attention and acceptance among the internal stakeholders including academics and academicians, students, parents, and employers. At present, the QAA system in Nepal is overseen by the UGC, Nepal through its formation of Educational Quality Assurance and Accreditation Council (EQAAC). On behalf of the EQAAC, its secretariat established within the premises of the UGC, Nepal itself that undertakes the responsibility of day-to-day administrative operations. The EQAAC is the only authorized agency to assess the quality of HEIs in Nepal based on the set standards, criteria, and indicators. There are not yet any private agencies in operation in this regard. However, it is important to note that the participation of HEIs in the QAA process in Nepal is voluntary except the professional councils in Nepal, which are also functioning as external quality monitor and control mechanism under the government rules and regulations (Pun & Bhandari, 2021). In this sense, Nepal has two accrediting government bodies, but the HEIs, especially technical institutions, under the professional councils have also to participate in the QAA system under the UGC, Nepal.

According to UGC, Nepal (2020b), the available data indicate that 12 HEIs were accredited during the Second Higher Education Project (SHEP) between 2007-2014. The number of accredited or peer review stage completed HEIs reached 76 (including 12 accredited and seven reaccredited HEIs during the SHEP) by the closing date of the Higher Education Reform Project (HERP) between 2015-2020 (World Bank, 2021). Currently, the five-year 'Nurturing Excellence in Higher Education Program (NEHEP)' is being implemented by the UGC, Nepal, starting 2022 until 2026. The recent data received from the UGC demonstrate that the cumulative number of accreditation has reached 103, including 11 reaccreditation. This figure indicates the increasing number of HEIs participating in the QAA process.

Nevertheless, the study of the newly adopted and proposed policy documents of the government indicates that the scenario of the existing QAA system is changing soon with added priority. For example, the strategy10.49.2, an education policy of of the National Education Policy (2019) envisions that an autonomous quality assessment mechanism will be formulated under the UGC, Nepal and accreditation will be made mandatory for all HEIs. It further says that the HEIs that fail to accredit by a given timeframe will be barred from operating (p. 65). Similarly, the Nepal National Framework for Sustainable Development Goal 4: Education 2030 (MoEST, 2019) has also highly acknowledged and prioritized the QAA system and has set a strategy of "strengthening of quality assurance and accreditation and credit transfer systems in TVET and higher education" (p. 31), including other levels of education. Likewise, the Fifteenth Plan [2019/20-2023/24] prepared by the National Planning Commission [NPC] (2020) has also set a strategy and working policy in regard to the QAA process. The education strategy 11 explicitly states, "To develop higher education-providing universities and educational institutions as technology-based learning centres for knowledge transfer and development and make the Quality Assurance and Accreditation System strong, powerful, and compulsory" (pp. 238-239) followed by working policy. It includes: 1) There will be an independent quality determination and accreditation authority for determination and accreditation of the quality of higher education and the quality accreditation of higher education providers will be carried out by developing an automatic system based on certain standards and 2) "The grants and additional incentives provided to higher education providers will be aligned with the quality standards (pp. 238-239). In the same way, the proposed Higher Education Act (2024) in its preamble states that with the feel for a need "… to make the quality and internationally competitive [higher education] … federal parliament has made this act" (p. 1).

More recently, the UGC, Nepal has set criteria and indicators for quality assessment and accreditation of universities running in Nepal apart from HEIs of Nepal. This process consists of six criteria and 90 major indicators (see Table 1). However, there are also additional indicators that universities offering specialized academic programs such as science and technology, agriculture, engineering, and others have to fulfill. Previously, accreditation in Nepal was only limited within HEIs like central departments, schools, and constituent, community, and private campuses/colleges.

Table 1 *Criteria, Indicators, and Weightage of University Accreditation*

SN	Criteria	Weight	Number of Indicators	Full Marks
1	Governance and Leadership	25%	24	25
2	Curriculum Management	20%	17	20
3	Research, Knowledge Generation and Extension / Outreach	20%	17	17
4	Physical Resources	15%	15	15
5	Students Support Services and Wellbeing	10%	9	10
6	Human Resource	10%	8	10
	Total	100%	90	100

Source: UGC, Nepal. (2020b). Quality assurance and accreditation of higher education institutions in Nepal: Handbook for self-study and peer review.

As shown in Table 2 below, the UGC, Nepal has also revised the criteria and indicators applicable to the HEIs and brought to their implementation that apply for reaccreditation. This revision has brought down the number of criteria from eight to six and indicators from 120 to 80 (for HEIs offering graduate programs) and 84 (for HEIs offering undergraduate programs).

Table 2

Comparison of Previous and Revised Criteria and Weightage for Accreditation of HEIs

Previous		**Revised**	
Criteria	Weightage	Criteria	Weightage
Policy & Procedures	15	Governance and Leadership	20
Curricular Aspects	10	Curriculum Management	20
Teaching Learning And Evaluation	15	Research and Knowledge Extension	20
Research, Consultancy and Extension	10	Physical Resources	20
Infrastructure and Learning Resources	20	Student Welfare and Well Being	10
Student Support and Guidance	10	Human Resource	10
Information System	10		
Public Information	10		
Total	100	Total	100

Source: Source: UGC, Nepal. (2020b). *Quality assurance and accreditation of higher education institutions in Nepal: Handbook for self-study and peer review.*

As of now, the QAA system is a well-recognized and well-accepted mechanism that reflects and showcases the quality and competitiveness of national HEIs internationally. The above discussion indicates that the QAA system in Nepal is soon passing through a major shift. However, in the face of turbulent scenario (low funding, students' migration to foreign countries, decreasing students' enrollment, limited employability options, etc.), there are full of challenges for sustenance of the QAA system.

The Role of Internal Quality Assurance (IQA) System within HEIs

The debate on the independent existence of EQA system and IQA system as once seen as opposites is over now and both systems have been accepted as complementary mechanisms for assuring quality in higher education (Ansah, 2015). According to Ansah, the purpose of EQA and IQA are distinct in which "external quality assurance is described as promoting accountability, while internal quality assurance is described as promoting improvement" (p.

138). This definition creates a boundary between the EQA and IQA systems, showing the inter-dependency between the two mechanisms because in the absence of a continuous improvement of quality, accountability is hard to be achieved. Today, the IQA system has become a mandatory requirement for all HEIs in Nepal.

According to Martin (2018), the roles and functions of the IQA system can vary based on the given national and institutional contexts. Some HEIs have integrated the system to the employability whereas most others have focused on strengthening the IQA system for receiving feedback and facilitating the academic and administrative process for quality management of higher education as TU's Quality Assurance and Accreditation Centre (QAAC) (2024) monitors and facilitates "its constituent campuses, faculty/institutes, and central departments (p. 3). More specifically, the purpose of IQA system comprises of the "performance assessment, institutional learning, and management improvement, and were intended to improve internal processes and strengthen institutional self-regulation" (p. 41). For instance, Sofyani et al. (2023) conducted a study in Indonesia to identify the potential relation between the IQA system and quality progress. The study positively associated the role of the IQA system that can contribute to the enhanced quality of HEIs in terms of performance, management, governance practices, and service quality. However, a better harmonization between the IQA mechanism and other functional units of the institution is required to maximize its outcomes.

In the University of Minho, Portugal, Santos and Dias (2017) discuss the practice of the IQA system. The IQA system worked well there that consisted of the quality plan which addresses the questions of quality standard of the university by setting mainly the strategic objectives, hierarchic operational strategies, and action plan. To achieve these goals, the quality manual was prepared by outlining the institutional quality policy and its transformation into the IQA system through the performance indicators. There is also another important aspect that develops the QA supporting structures including the QA follow-up committee, QA office, and information system. Comparable to Santos and Dias (2017), Jingura and Kamusoko (2019) have "proposed competency framework for IQA practitioners" and more comprehensively presented the "scope of IQA work" (p. 126) under nine domains. They included the IQA policies, processes and tools, planning, data and information management, EQA relationship, advisory and promotional work, research and innovation, management and leadership, and networking (see Table 3).

Table 3

Functions of IQA in HEIs

Domain	Activities
IQA policies, processes and tools	- Formulating quality assurance policies - Setting quality objectives - Superintending implementation of quality management system - Setting standards - Developing and documenting quality assurance processes, procedures and guidelines
Planning	- Developing quality assurance plans - Monitoring implementation of the plans - Reviewing performance - Developing and implementing quality improvement plans
Quality assurance processes	- Conducting internal reviews, audits, evaluation and benchmarking - Risk analysis - Facilitating accreditation processes
Data and information management	- Collection, analysis, indication and interpretation of data - Report writing
EQA relationship	- Working with public and private EQAs - Working with professional bodies - Promoting and monitoring implementation of EQA requirements - Facilitating accreditation and external review and audit processes
Advisory and promotional work	- Advising all stakeholders on quality assurance matters - Building quality assurance literacy - Conducting capacity building activities
Research and innovation	- Designing and conducting research on quality assurance matters - Developing new approaches to quality assurance - Publishing quality assurance scholarly work
Management and leadership	- Performance measurement - Setting and monitoring performance metrics - Communication with stakeholders - Leading staff on QA work
Networking	- Networking with local and international organizations - Participating in international conferences, workshops and meetings related to quality assurance

Source: Adapted from Jingura and Kamusoko (2019)

Table 3 presents a comprehensive outline on the functions and activities expected under the IQA system, ranging from the policy process to networking. The functions presented not only show the diverse array of the IQA system, but they also highlight the IQA system's significance in HEIs. To bring them together, the table emphasizes on the strategic planning, continuous improvement, capacity-building activities, research, innovation, and stakeholder engagement along with the EQA relationship to underscore the importance of aligning the IQA system's efforts with the EQA system's standards and processes, ensuring accountability and compliance with the benchmarks required by the system. In the context of Nepali HEIs, the IQA systems are not yet stringent, the functions outlined in the table offer valuable insights and guidelines for enhancing the QA practices.

Conclusion

The impact of the QAA system in HEIs in Nepal is yet to be formally studied; however, there are complaints that the expected output and outcomes of accreditation is not satisfactory. One of the major reasons behind this could be the limited implementation of IQA system. As stated earlier, although the HEIs like schools/central departments, campuses/colleges are either accredited or in the process of accreditation, the IQA system (specifically the formation of IQAC within them) have been established as part of its requirements. Except for a few universities many others have to formally establish such mechanism. However, the present scenario indicates the unwillingness of universities in formalizing and regularizing the IQA system and their readiness to self-audit their performance and maintain quality of higher education. One potential cause behind the complaint of the quality deprivation of HEIs in Nepal could be the absence of the IQA system. As indicated by the discussion above, the IQA system can significantly contribute to enhancing internal competency through cyclic monitoring, feedback, and facilitation in governance, teaching-learning, research, curricular enhancement, student support, and stakeholder's engagement. To achieve the objectives of the IQA system, the EQA system can be helpful in taking corrective measures timely, assuring quality in higher education and widening the institutional reputation.

The UGC, Nepal through its QAA system (as EQA mechanism) has certainly engaged Nepali HEIs in establishing and implementing the IQA system. Although some universities have established the IQA system to facilitate their HEIs under their administration, formal studies have not yet been conducted to analyze the performance and impact of the system in the universities where such system has been established for their HEIs. It is recommended that the first and prominent requirement to do so through their IQA system is the responsibility of the universities for their HEIs. To sum up, most universities in Nepal are lagging far behind this process; this study strongly recommends that they are required to address these challenges as the QAA system creates opportunities for HEIs to maintain and ensure quality of higher education in the country.

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Blockchain Technology and Smart Contracts: The Legal Implications and Opportunities

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Abstract

The digital world of the internet has been growing day by day globally. Similarly the change in global internet has advocated the digital age which has lead it to emergence of decentralized technology system. Smart contracts & blockchain technology have generated a lot of interest and discussion across a range of disciplines, including law. As a part of a novel technology, it brings with it a lot of opportunities and difficulties for the established legal system. This article provides a comprehensive exploration of the legal implications and opportunities arising from these decentralized, transparent innovations across domains like contract law, property rights, dispute resolution, and regulatory frameworks. Through a multi-pronged approach involving literature review, case study analysis, and examination of real-world applications, the article delves into the technical foundations, legal challenges, and practical implementations of blockchain and smart contracts. While highlighting benefits such as automation, immutability, and trustless transactions, it also addresses key considerations like jurisdiction conflicts, data privacy, and regulatory compliance. The discussion underscores strategies for legal professionals and policymakers to effectively navigate this evolving landscape, including legal education, adaptive regulatory approaches, cross-border collaboration, and addressing ethical concerns. Opportunities are identified for streamlining legal processes, enhancing intellectual property protection, and fostering transparency and accountability. Ultimately, the article aims to serve as a valuable resource for legal stakeholders, businesses, and policymakers, illuminating the transformative potential of blockchain and smart contracts in creating a more secure, efficient, and trusted legal ecosystem – contingent upon responsible integration, proactive engagement, and continual adaptation to this rapidly advancing technological frontier.

Keywords: Blockchain, Smart Contracts, Legal Implications, Contract Law, Property Rights, Dispute Resolution, Regulatory Frameworks, Decentralization, Transparency, Immutability, Legal Technology, Digital Transformation.

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Introduction

The world is witnessing a technological revolution that has the potential to disrupt and to transform the various industries, including the legal sectors. At the fore-front of this revolution, lies on blockchain technology, a decentralized and transparent digital ledger, which facilitates the secure and immutable record-keeping system. Alongside this ground-breaking innovation, the smart contracts, the self-executing digital agreements built on blockchain infrastructure, have emerged as a game-changing concept in the realm of legal contracts and transactions. The integration of blockchain technology and smart contracts into the legal domain has emerged an intense debate, and has raised critical questions about their implications, challenges, and the opportunities. As these technologies continue to gain grip, it is imperative for the legal professionals, the policymakers, and the stakeholders to understand their fundamental principles, potential impacts, and the strategies required to navigate this rapidly evolving legal land scape.

Blockchain is defined as a ledger of decentralized data that is securely shared. Blockchain technology enables a collective group of select participants to share data. With blockchain cloud services, transactional data from multiple sources can be easily collected, integrated, and shared. Data is broken up into shared blocks that are chained together with unique identifiers in the form of cryptographic hashes. Blockchain provides data integrity with a single source of truth, eliminating data duplication and increasing security. In a blockchain system, fraud and data tampering are prevented because data can't be altered without the permission of a quorum of the parties. A blockchain ledger can be shared, but not altered. If someone tries to alter data, all participants will be alerted and will know who make the attempt[1] . Whereas a smart contract is defined as a digital agreement that is signed and stored on a blockchain network, which executes automatically when the contract's terms and conditions (T&C) are met. The T&C is written in blockchain-specific programming languages such as Solidity[2] . As blockchain and smart contracts continue to gain traction across various sectors, it is imperative for legal professionals, policymakers, and stakeholders to understand their fundamental principles, potential impacts, and the strategies required to navigate this rapidly evolving legal landscape effectively. This article serves as a comprehensive resource, illuminating the transformative potential of these technologies in creating a more secure, efficient, and trusted legal ecosystem while also addressing the potential challenges and strategies to mitigate risks. This article aims to bridge the research gap by offering an extensive and multifaceted exploration of the legal implications and prospects of blockchain technology and smart contracts. Through a systematic review of literature, case study analysis, and examination of real-world applications, the article delves into the technical foundations, legal challenges, and practical implementations of these transformative technologies.

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[1] *Oracle. (n.d.). What is Blockchain? Retrieved from https://www.oracle.com/cz/blockchain/what-is-blockchain/ (Accessed on 29 February 2024).*

[2] *Spiceworks. (n.d.). What are Smart Contracts? Retrieved from https://www.spiceworks.com/tech/innovation/ articles/what-are-smart-contracts/ (Accessed on 29 February 2024).*

Research Questions

a) Do blockchain technology and smart contracts impact various legal areas, such as contract law, property rights, dispute resolution, and regulatory frameworks?

b) Can legal professionals and policymakers strategically navigate this evolving landscape, addressing legal education, regulatory adaptation, cross-border collaboration, and ethical concerns?

Methods/Methodology

This research employs a doctrinal legal research methodology, which involves a comprehensive analysis and synthesis of existing legal literature, case laws, and scholarly works relevant to the topic of blockchain technology and smart contracts. The study relies on a qualitative approach, utilizing various secondary data sources to explore the legal implications, challenges, and opportunities associated with these emerging technologies. The research process involves an extensive review of academic literature, including books, peer-reviewed journals, legal publications, and online resources. Additionally, relevant case studies, industry reports, and legal analyses from reputable sources are examined to gain insights into real-world applications and practical considerations. The research methodology involves a critical analysis of the collected data, identifying emerging themes, patterns, and legal challenges related to blockchain technology and smart contracts. The study employs a comparative approach, contrasting traditional legal frameworks with the unique characteristics and requirements of these decentralized systems.

Understanding Blockchain Technology

Blockchain technology is a, distributed digital ledger that records transactions across multiple computers or nodes in a network. Each block in the chain contains a set of transactions, and once validated and added to the chain, the data becomes immutable and tamper-resistant. This revolutionary technology operates without a central authority or intermediary, relying instead on a consensus mechanism among network participants to validate and record transactions. It is a system that, maintains a secure record of digital transactions without relying on the centralized authority. The data recorded on a blockchain network is immutable which means it cannot be altered or tampered with. This features makes blockchain a disruptive force for industries such as finance, cybersecurity, and healthcare, where data integrity and transparency are fundamental.

A fundamental principle of blockchain technology is **decentralization**[3]. Unlike traditional ledgers maintained by a central authority, no single entity controls a blockchain network. Instead, it is a distributed digital ledger managed by a peer-to-peer network of nodes. These nodes can be any electronic device connected to the network, responsible for maintaining a copy of the

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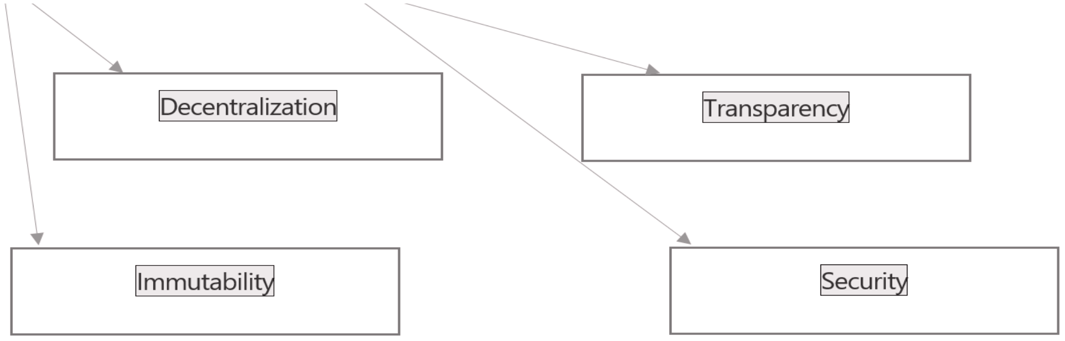
[3] *Refers to the transfer of control and decision-making from a centralized entity (individual, organization, or group thereof) to a distributed network.*

blockchain and ensuring its continued operation. For a new block of transactions to be added to the blockchain, it must be validated & approved by a consensus mechanism involving multiple nodes. This decentralized validation process ensures the integrity & immutability of the data recorded on the blockchain. Since all transactions are transparent & publicly viewable, any attempt to manipulate the data can be easily detected & prevented. Each participant in the blockchain network is assigned a unique alphanumeric identifier that represents their digital identity and records their transactions. This combination of publicly available information and a system of checks & balances through distributed consensus creates an inherent security and trust mechanism within the blockchain ecosystem. In essence, blockchain technology leverages decentralization and cryptographic principles to establish a scalable system of trust without relying on a central authority. By distributing the ledger across a network of nodes and requiring collective validation for updates, blockchain enable secure, transparent, and tamper-resistant record-keeping, making them valuable for applications that require data integrity and trustworthiness.

Core theme Principles of blockchain instrument:



a) **Decentralization:** One of the key principles of blockchain is it is s decentralized in nature. Unlike traditional centralized systems, blockchain networks operate without a single point of control or authority. Instead, they rely on a distributed network of nodes such as computers or devices that collectively validate and maintains the blockchain system. This decentralized approach eliminates the need for intermediaries, enabling direct peer-to-peer transactions & interactions without the involvement of third parties.

b) **Transparency:** Blockchain technology promotes transparency by making all transactions on the network visible to participants. Each node in the network maintains a copy of the entire blockchain, allowing anyone to view the complete history of transactions. This transparency fosters accountability and trust among network participants, as all activities are publicly auditable and verifiable.

c) **Immutability:** Once a block of transactions is added to the blockchain, the data within it becomes virtually immutable, meaning it cannot be altered or tampered with. This immutability is achieved through the use of cryptographic hashing algorithms and consensus mechanisms. Any attempt to modify data in an existing block would result in a mismatch with the subsequent blocks, making the tampering immediately detectable and preventing the altered data from being accepted by the network.

d) **Security:** Blockchain technology employs advanced cryptographic techniques to ensure the security, and integrity of transactions and data. One key security mechanism is the use of cryptographic hashing algorithms, which create unique digital fingerprints for each block of data. Any minor change in the data would result in a completely different hash, making it easy to detect tampering. Additionally, digital signatures based on public-key cryptography are used to authenticate transactions and prevent unauthorized modifications.

These core principles of decentralization, transparency, immutability, and security work together to create a secure, trustless, and tamper-resistant environment for recording and sharing data. By eliminating the need for a central authority and enabling direct peer-to-peer interactions, blockchain technology empowers participants to engage in secure and transparent transactions without relying on intermediaries.

Likewise some of the major features includes:

Blockchain technology exhibits several key characteristics that contribute to its potential for disrupting traditional systems and processes:

a) **Distributed Ledger:** At its core, a blockchain is a distributed digital ledger that is maintained and replicated across a network of interconnected nodes or computers. Instead of relying on a central authority to manage the ledger, the responsibility is shared among the participating nodes. This distributed nature ensures data redundancy, as each node holds a copy of the entire blockchain, eliminating single points of failure. If one node fails or becomes compromised, the remaining nodes can continue to operate and maintain the integrity of the ledger.

b) **Consensus Mechanism:** In a decentralized network, reaching agreement on the state of the ledger is crucial. Blockchain networks employ consensus mechanisms, such as Proof of Work **(PoW)**[4] or **Proof of Stake (PoS)**[5], to ensure that all nodes agree on the validity

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[4] *Proof of Work (PoW) is the original consensus algorithm used by Bitcoin and other older cryptocurrencies. It requires miners to compete in solving complex mathematical puzzles using computational power. The first miner to solve the puzzle gets to add the new block to the blockchain and receives a block reward in the form of cryptocurrency. PoW is a proven and robust consensus mechanism but is less energy-efficient and more costly due to the high energy consumption required for mining. PoW is designed to prevent centralization by making it difficult for any single entity to control the mining process. However, as the value of a cryptocurrency grows, more miners are incentivized to join the network, which can lead to increased centralization.*

[5] *Proof of Stake (PoS) is a more recent consensus algorithm used by newer cryptocurrencies such as Ethereum 2.0, Cardano, and Tezos. It selects validators based on the amount of cryptocurrency they hold and are willing to "stake" as collateral. Validators are chosen rand omly, but those with a larger stake have a higher chance of being selected. PoS is more energy-efficient and cost-effective than PoW since it does not require computational power for mining. PoS is designed to encourage validators to act in the best interests of the network since their staked cryptocurrency can be lost if they validate fraudulent transactions. However, it can lead to centralization since those with more significant stakes have a higher chance of being selected as validators.*

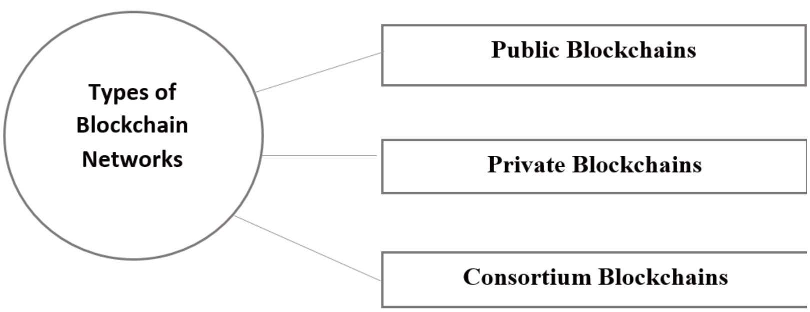
of transactions, and the order in which they are recorded. These mechanisms typically involve computational work or stake-based validation, preventing malicious actors from manipulating the ledger and ensuring the network's continued operation and security.

c) **Cryptographic Security:** Blockchain technology heavily relies on cryptographic techniques to secure transactions & maintain data integrity. Cryptographic hash functions, such as **SHA-256**[6], are used to create unique digital fingerprints for each block of data, ensuring that any modification to the data can be easily detected. Additionally, digital signatures based on public-key cryptography are employed to authenticate transactions and prevent unauthorized alterations, providing a robust security layer.

d) **Pseudonymity:** While transactions on the blockchain are transparent and publicly visible, the identities of participants are represented by pseudonymous addresses, which are strings of alphanumeric characters. This Pseudonymity provides a degree of privacy and anonymity, as the real-world identities of participants are not directly associated with their blockchain addresses. However, it's important to note that advanced analytical techniques and external data sources can potentially be used to link blockchain addresses to real-world identities in some cases.

Types of Blockchain Networks:

Blockchain networks can be categorized into three main types:



a) **Public Blockchains:** Public blockchains are open, decentralized networks where anyone can participate without requiring permission from a central authority. These permissionless networks operate on the principles of transparency and inclusivity, allowing anyone to join, access the ledger, and validate transactions. One of the most well-known examples of a public blockchain is Bitcoin. Bitcoin's blockchain is an open, distributed ledger that records all transactions in the Bitcoin network. Anyone with an internet connection, and

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[6] *SHA-256 is a cryptographic hash function that generates a 256-bit signature for a text, used in Bitcoin proof-of-work (PoW) and other encryption protocols such as SSL, TLS, SSH, and open source operating systems like Unix/Linux.*

the necessary computing power can become a node, participate in the validation process (mining), and contribute to the maintenance and security of the network. Another prominent example is Ethereum, a public blockchain platform that supports the execution of smart contracts and decentralized applications (dApps). Like Bitcoin, Ethereum's blockchain is open and permissionless, allowing anyone to join the network, validate transactions, and participate in the consensus process. Public blockchains rely on consensus mechanisms like Proof of Work (PoW) or Proof of Stake (PoS) to validate transactions and maintain the integrity of the distributed ledger. These mechanisms incentivize participants (miners or validators) to contribute their computational resources or stake, respectively, to secure the network, and earn rewards.

b) **Private Blockchains:** In contrast to public blockchains, private blockchains are permissioned networks controlled by a single organization or entity. Access to these networks is restricted, and participants must be granted explicit permission to join and interact with the blockchain. Private Blockchains are often deployed in enterprise settings or within organizations that require a higher level of control and privacy. For example, a banking consortium might implement a private blockchain to facilitate secure and efficient transactions among its members while maintaining strict access controls. One example of a private blockchain is Hyperledger Fabric, an open-source enterprise-grade permissioned blockchain framework hosted by the Linux Foundation[7]. Hyperledger Fabric allows organizations to build & deploy private blockchain networks tailored to their specific needs, with control over participant identities, data privacy, and governance rules. Unlike public blockchains, private blockchains typically do not rely on energy-intensive consensus mechanisms like PoW or PoS. Instead, they may employ more efficient consensus algorithms, such as Practical Byzantine Fault Tolerance (PBFT) or Raft, which are better suited for smaller, controlled networks.

c) **Consortium Blockchains:** Consortium blockchains represent a hybrid approach, combining elements of both public and private blockchains. These networks are governed by a group of organizations or entities, known as a consortium, that collaboratively control and manage the blockchain. In a consortium blockchain, the participating organizations establish predefined rules and governance structures, determining who can join the network, validate transactions, and contribute to the consensus process. However, unlike private blockchains, consortium blockchains are typically more decentralized, with multiple organizations sharing control and responsibility. One example of a consortium blockchain is the R3 Corda platform, which is designed for financial institutions and businesses to

[7] *Amazon Web Services. (n.d.). What is Hyperledger Fabric? Retrieved from https://aws.amazon.com/blockchain/what-is-hyperledger-fabric/. (Accessed on 29 February 2024).*

build and operate secure and efficient blockchain-based applications[8]. Corda allows the formation of consortiums, where participating organizations can collaborate, share data, and transact with each other within a controlled and regulated environment. Another example is the Energy Web Foundation's Energy Web Chain, a consortium blockchain tailored for the energy sector. It enables energy companies, grid operators, and other stakeholders to collaborate and develop decentralized applications for energy trading, supply chain management, and other use cases within the energy industry. Consortium blockchains strike a balance between the decentralization and transparency of public blockchains and the control and privacy offered by private blockchains. They allow organizations to leverage the benefits of blockchain technology while maintaining a degree of centralized governance and oversight within a trusted network of participants.

Each type of blockchain network has its own strengths, weaknesses, and use cases, making it essential for organizations and legal entities to carefully evaluate their specific requirements before adopting a particular blockchain solution.

Smart Contracts: Automating Agreements

Smart contracts are often used to initiate the execution of the contract so that all participants know the outcome immediately, without the involvement of intermediaries or wasting time. They can also automate tasks by triggering the next action when certain conditions are met. Smart contracts are self-executing digital contracts built on blockchain technology. Smart contracts work by following simple "if/when…then…" statements written in online code. A computer network is activated when certain conditions are met and verified. These actions may include giving money to a designated person, registering a vehicle, sending a notice, or issuing a ticket. Then the block is updated when the action is completed. This means that transactions cannot be modified and only authorized parties can access the results. In a smart contract, many things may be required to convince participants that the task will be completed successfully. To recognize these terms, participants must be aware of how their activities and information are viewed online, agree to the "if/when…then…" rules that apply to these transactions, find out what the problem is, and explain how to resolve disputes. They are essentially computer programs designed to automatically enforce the terms and conditions of an agreement once predefined conditions are met. Smart contracts operate on a decentralized blockchain network, eliminating the need for intermediaries and enabling trustless transactions between parties.

The functioning of smart contracts can be summarized as follows:

a) **Agreement Terms:** The foundation of a smart contract is the agreement or set of rules that govern a particular transaction or interaction. These terms and conditions are encoded

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[8] *BBChain. (n.d.). What is R3 Corda and How it Works. Retrieved from https://www.bbchain.com.br/en/blockchain-blog/what-is-r3-corda-and-how-it-works. (Accessed on 29 February 2024).*

into the smart contract as a series of programmable instructions and conditions. The contract's code defines the specific actions to be taken, the conditions that must be met for those actions to be triggered, and the rules for validating, and executing the terms of the agreement.

b) **Deployment:** Once the smart contract's code is written and thoroughly tested, it is deployed onto a blockchain network. This deployment process involves uploading the contract's code to the blockchain, where it becomes an immutable and transparent part of the distributed ledger. At this point, the smart contract is accessible to all participants in the network, and its execution can be initiated by any party meeting the predefined conditions.

c) Execution: When the conditions specified in the smart contract are met, the contract automatically executes its programmed instructions. This execution process is triggered without the need for human intervention or intermediaries. For example, in a smart contract for a real estate transaction, the transfer of ownership and payment could be automatically executed once the specified conditions, such as verification of funds and document signings, are fulfilled. The execution of smart contracts is facilitated by the decentralized network of nodes that make up the blockchain. These nodes validate the contract's execution, ensuring that the conditions have been met and the actions taken align with the programmed rules. This validation process is governed by the consensus mechanism of the underlying blockchain, ensuring the integrity and consistency of the executed transactions.

d) Immutability: Once a smart contract has been executed, and its actions have been recorded on the blockchain, the resulting transactions and state changes become immutable. This means that the data and events recorded on the blockchain cannot be altered or tampered with, providing a permanent and transparent audit trail. The immutability of smart contract executions is a direct result of the blockchains cryptographic principles and distributed consensus mechanisms. Any attempt to modify the recorded data would be immediately detected and rejected by the network, as it would conflict with the existing records maintained by the majority of nodes

Benefits of Smart Contracts:

Smart contracts offer several potential benefits over traditional legal agreements, enabling automation, transparency, and trust in various transactions and processes. Here are some examples that illustrate these benefits:

a. **Automation and Efficiency**

In the insurance industry, smart contracts can automate claims processing and payouts based on predefined conditions. For instance, if a natural disaster occurs in a specific location, the smart contract can automatically trigger insurance payouts to affected policyholders, eliminating the need for manual claims processing and reducing delays.

b. **Transparency and Trust**

In supply chain management, smart contracts can provide transparency and traceability by recording each step of the supply chain process on the blockchain. This allows parties involved, such as manufacturers, suppliers, and retailers, to verify the authenticity of products, track their movement, and ensure compliance with regulations or quality standards.

c. **Reduced Disputes**

In real estate transactions, smart contracts can encode the terms of the agreement, including ownership transfer, payment schedules, and contingencies. By automating the execution of these terms based on predefined conditions, the risk of disputes arising from misunderstandings or delays is significantly reduced.

d. Immutability and Tamper-Resistance

In the financial sector, smart contracts can be used for securities trading, enabling automatic settlement and ownership transfer once the agreed-upon conditions are met. The immutability and tamper-resistance of blockchain transactions provide a secure and reliable record of these financial transactions, reducing the risk of fraud or manipulation.

e. Interoperability

In the Internet of Things (IoT) domain, smart contracts can facilitate machine-to-machine interactions and automate processes based on data received from connected devices. For example, a smart contract could automatically initiate payment to a service provider once a certain number of sensor readings or usage metrics are recorded on the blockchain. One real-world example of a smart contract implementation is the Ethereum-based platform Etherbox, which enables the creation and execution of smart contracts for various use cases, such as crowdfunding, voting systems, and decentralized applications (dApps). Another example is the Hyperledger Burrow project, which provides a permissioned Ethereum-based blockchain platform for enterprise applications[9]. Companies like IBM and Intel have utilized Hyperledger Burrow to develop and deploy smart contracts for supply chain management, trade finance, and other business-to-business processes. As blockchain technology continues to evolve and gain adoption, the use cases, and applications of smart contracts are expected to grow, offering new opportunities for automation, transparency, and trust across various industries and sectors. Smart contracts have some problems. First, they can have mistaken in their code, like computer programs often do. This means they can be exploited or not work correctly. Second, they need outside data to work sometimes, which can cause issues if that data is wrong or manipulated. Third, once a smart contract

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[9] *Hyperledger. (2019, October 8). Burrow: The Boring Blockchain. Retrieved from https://www.hyperledger.org/blog/2019/10/08/burrow-the-boring-blockchain (Accessed on 29 February 2024).*

is set up, it's hard to change it. This means if you need to update it, you might have to start over. Fourth, it's not clear if smart contracts are legally enforceable in some places, so they might not hold up in court. Lastly, when lots of people use smart contracts at the same time, the system might slow down, making them less efficient.

Legal Implications of Blockchain and Smart Contracts

The integration of blockchain technology and smart contracts into legal processes and frameworks has far-reaching implications across various domains, including contract law, property rights, dispute resolution, and regulatory frameworks.

Contract Law

The immutable and self-executing nature of smart contracts challenges traditional contract law principles and raises questions about their legal validity, interpretation and enforcement.

- **Formation and Validity:** Smart contracts may not conform to traditional contract formation requirements, such as offer, acceptance, and consideration, raising concerns about their legal recognition.
- **Interpretation and Ambiguity:** While smart contracts aim to eliminate ambiguity by encoding the terms into code, interpretation challenges may arise due to the complexity of legal agreements and the potential for coding errors.
- **Enforceability and Remedies:** The decentralized and cross-border nature of blockchain networks raises questions about jurisdiction, applicable laws, and the enforceability of smart contract terms in traditional legal systems.
- **Contractual Amendments and Termination:** The immutability of smart contracts makes it challenging to modify or terminate the agreement once deployed, potentially leading to inflexibility and disputes.

Property Rights and Ownership

Blockchain technology has the potential to change how property rights and ownership are managed. It offers new ways to record, manage, and transfer ownership, which brings both opportunities and challenges for the legal system. For instance, it allows for the representation and transfer of ownership of digital assets like cryptocurrencies and NFTs. However, this raises questions about their legal status, and how they're protected. Moreover, blockchain-based land and the property registries could offer a secure and transparent way to record ownership, potentially reducing fraud, and the disputes in property transactions. Additionally, it could help protect intellectual property rights by creating tamper-proof records of ownership and licensing agreements. Yet, there are regulatory challenges due to the global nature of blockchain networks and digital assets, challenging traditional jurisdictional boundaries and regulatory frameworks, which call for international cooperation and harmonization.

Dispute Resolution

Blockchain technology's transparent & unchangeable nature brings both opportunities and challenges to dispute resolution in the legal realm. For instance, disputes may arise due to coding mistakes, unclear terms in smart contracts, or unforeseen events, necessitating legal involvement and the creation of new dispute resolution methods. The concept of on-chain arbitration is emerging, where disputes are settled via decentralized and transparent processes on the blockchain, offering an alternative to traditional court systems. Additionally, the immutable transaction record on the blockchain can serve as dependable evidence in legal matters, enhancing transparency and reducing disputes over data accuracy. However, the global aspect of blockchain networks presents difficulties in enforcing legal decisions across borders, requiring international collaboration and the alignment of legal frameworks.

Legal Challenges and Considerations

While blockchain technology and smart contracts offer numerous potential benefits, they also present several legal challenges, and considerations that must be addressed to ensure their effective integration and an adoption within the legal framework. One of the most significant legal challenges posed by blockchain technology, and smart contracts is the issue of jurisdiction and enforceability. The decentralized with a cross-border nature of blockchain networks raises questions about which legal jurisdiction applies to transactions, and disputes involving smart contracts.

- **Jurisdiction Conflicts:** With participants potentially located in different countries or jurisdictions, determining the applicable laws and legal frameworks can be complex and subject to conflicts.
- **Enforceability of Smart Contracts:** The legal status and enforceability of smart contracts are still unclear in many jurisdictions, raising questions about their validity and recognition in traditional court systems.
- **Cross-Border Cooperation:** Effective enforcement of smart contracts and blockchain-based transactions may require international cooperation, and harmonization of legal frameworks to ensure consistent treatment across jurisdictions.
- **Choice of Law and Jurisdiction Clauses:** Parties involved in smart contracts may need to explicitly agree on choice of law and jurisdiction clauses to mitigate potential conflicts and ensure enforceability.

Data Privacy and Security

While blockchain technology offers enhanced transparency and immutability, it also raises concerns regarding data privacy and security, particularly in the context of personal and sensitive information.

- **Data Privacy Regulations:** Existing data privacy regulations, such as the General Data Protection Regulation (GDPR) in the European Union, may pose challenges for blockchain-based systems due to their transparent & immutable nature.
- **Pseudonymity and Anonymity:** While blockchain networks provide a degree of Pseudonymity, there are concerns about the potential for de-anonymization, and the ability to link blockchain addresses to real-world identities.
- **Cybersecurity Risks:** Like any digital system, blockchain networks and smart contracts are susceptible to cyber threats, such as hacking attempts, malware, and other security breaches, which could compromise data integrity and user privacy.
- **Data Protection Measures:** Implementing robust data protection measures, such as encryption, access controls, and secure key management, is crucial to safeguard sensitive information on blockchain networks.

Regulatory Compliance

As blockchain technology and smart contracts gain wider adoption, ensuring compliance with existing, and an emerging regulations becomes a critical consideration for legal professionals and organizations.

- **Financial Regulations:** In the financial sector, blockchain-based systems and digital assets may be subject to regulations related to anti-money laundering (AML), counter-terrorism financing (CTF), and know-your-customer (KYC) requirements.
- **Industry-Specific Regulations:** Various industries, such as healthcare, energy, and transportation, may have specific regulations governing the use of blockchain technology and smart contracts in their respective domains.
- **Regulatory Sand boxes:** Many jurisdictions are exploring the use of regulatory sand boxes, which provide a controlled environment for testing and experimenting with blockchain-based solutions while ensuring compliance with relevant regulations.
- **Proactive Engagement with Regulators:** Legal professionals and organizations should proactively engage with regulatory bodies to stay informed about emerging regulations and contribute to the development of appropriate legal frameworks.

Interoperability and Standardization

To unlock the full potential of blockchain technology and smart contracts, addressing issues related to interoperability and standardization is necessary.

- **Blockchain Interoperability:** Different blockchain networks often operate independently, with limited or no communication between them. Achieving interoperability across various blockchain platforms is essential for seamless data exchange & cross-chain transactions.

- **Smart Contract Standards:** The lack of widely adopted standards for smart contract development, deployment, and execution can lead to compatibility issues and hinder the widespread adoption of smart contracts across different platforms and use cases.
- **Industry Standards and Best Practices:** Establishing industry-specific standards and best practices for the implementation of blockchain technology and smart contracts can facilitate consistent and secure adoption within specific sectors.
- **Collaborative Efforts:** Interoperability and standardization efforts require collaboration among technology providers, legal professionals, industry bodies, and regulatory authorities to establish common frameworks and guidelines.

Opportunities for the Legal Sector

Blockchain technology and smart contracts pose challenges to the legal sector, but they also present numerous opportunities to enhance efficiency, transparency, and trust in legal processes. The automation and immutability of smart contracts can streamline various legal processes, leading to cost reduction, error minimization, and increased efficiency. Smart contracts have the potential to automate the creation, execution, and management of legal agreements, thereby decreasing the need for manual intervention and mitigating the risk of errors. Furthermore, blockchain-based systems can offer secure and tamper-proof records, facilitating efficient due diligence processes and ensuring compliance with regulatory requirements. In terms of intellectual property management, blockchain technology can aid in protecting and managing intellectual property rights by enabling secure and transparent record-keeping of ownership, licensing and royalty payments. The immutable and transparent nature of blockchain networks can enhance the management and validation of legal documents, reducing the risk of tampering and ensuring data integrity. Moreover, the inherent transparency and immutability of blockchain technology can foster greater trust and accountability in legal processes and transactions. Blockchain-based systems provide an immutable audit trail, allowing stakeholders to verify the authenticity and provenance of legal documents and transactions. Additionally, blockchain records' transparent and tamper-proof nature can assist in dispute resolution by providing a reliable source of evidence, and reducing the risk of data manipulation. Furthermore, blockchain-based land registries and public record systems can increase transparency, reduce fraud, and enhance trust in property ownership and transactions. Lastly, by leveraging blockchain technology, legal professionals can ensure transparency and accountability throughout supply chains, enabling the tracking of goods, contracts, and compliance with regulatory requirements.

Smart Contract Implementation

Smart contracts offer numerous applications within the legal domain, enabling the automation and enforcement of various legal agreements and processes.

- **Contract Execution and Enforcement:** Smart contracts can automate the execution and enforcement of contractual terms, reducing the need for manual oversight and minimizing the risk of disputes.

- **Escrow and Conditional Payments:** Smart contracts can facilitate secure and automated escrow services, enabling conditional payments and asset transfers based on predefined conditions.
- **Derivative and Financial Instruments:** The programmable nature of smart contracts allows for the creation and execution of complex financial instruments and derivatives, enabling greater efficiency and transparency in financial transactions.
- **Decentralized Autonomous Organizations (DAOs):** Smart contracts can facilitate the creation and operation of decentralized autonomous organizations (DAOs), enabling novel governance models and decision-making processes within legal entities.

Intellectual Property Protection

Blockchain technology offers unique opportunities for protecting, and managing intellectual property rights, addressing challenges faced by traditional systems.

- **Timestamping and Provenance:** Blockchain networks can provide a tamper-proof record of when intellectual property assets were created, establishing provenance and supporting claims of ownership.
- **Digital Rights Management:** Smart contracts can automate the management and enforcement of digital rights, enabling secure and transparent licensing agreements and royalty payments.
- **Anti-Counterfeiting:** Blockchain-based systems can assist in combating counterfeiting by providing secure and immutable records of product authenticity and ownership.
- **Patent and Trademark Registry:** Blockchain-based registries can enhance the transparency and efficiency of patent and trademark registration processes, reducing the risk of disputes and infringement.

Real-World Applications and Case Studies

The potential applications of blockchain technology and smart contracts span various industries and sectors, offering innovative solutions to longstanding challenges. This section explores real-world applications & case studies that illustrate the practical implementation and benefits of these transformative technologies.

Supply Chain Management

Supply chain management is one of the most promising areas for the adoption of blockchain technology and smart contracts, addressing issues such as transparency, traceability and efficiency.

Case Study:

a. **IBM Food Trust**

   IBM Food Trust is a blockchain-based platform designed to enhance transparency, traceability, and food safety in the global supply chain. The platform enables safer food, longer product shelf lives, reduced waste, faster traceability, and better access to shared information[10]. It provides authorized users with immediate access to actionable food supply chain data from farm to store and ultimately the consumer. The complete history and current location of any food item along with its accompanying information (i.e. certifications, test data, temperature data) can be readily available in seconds[11]. The IBM Food Trust solution combines supply chain-specific modules with blockchain core functions, built on top of IBM Blockchain Platform built on the open standard Hyperledger Fabric[12].

b. HM Land Registry (UK)

The HM Land Registry in the United Kingdom has been exploring the use of blockchain technology to digitize and secure land registry records. In collaboration with blockchain firms, the agency has conducted pilot projects to test the feasibility and potential benefits of implementing a blockchain-based land registry system. The HM Land Registry has partnered with software company Methods, who will utilize R3's blockchain platform, Corda, for the second phase of their groundbreaking research and development project, Digital Street[13].

c. MediLedger Network

The MediLedger Network is a blockchain-based platform designed to enhance the supply chain integrity and traceability of pharmaceutical products. The platform leverages blockchain technology to create an immutable, and transparent record of drug pedigrees, enabling stakeholders to verify the authenticity and provenance of medications. The *MediLedger Network is a private permissioned blockchain-based network for the healthcare industry, where participants have a copy of the blockchain data and the rules being enforced on that data.* The network uses zero-knowledge proofs to facilitate business rule enforcement while maintaining complete data privacy. This means that contract updates, chargebacks, and other sensitive data are not published directly on the blockchain, instead business rules are enforced against cryptographic proofs of the data, published on the blockchain instead of the data itself. The MediLedger Network is used for data alignment, validation and transaction settlement between trading partners in the life sciences industry. The network actually utilizes transaction-related data like contracts, customers, and products that are shared through the network to enforce configurable business rules on transactions for each

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[10] *IBM. (n.d.). Hyperledger Fabric for Developers: A comprehensive tutorial [PDF]. Retrieved from https://www.ibm.com/downloads/cas/8QABQBDR (Accessed on 29 February 2024).*

[11] *Ibid*

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participant, enabling industry level automation and trust. The MediLedger Network has expand ed the Contracts and Chargebacks solution from the pharmaceutical industry to the life sciences industry, enabling manufacturers to comply with regulations, improve industry collaboration around product transfers of ownership, and reduce compliance risk. The MediLedger Network is the leading life sciences industry network that runs solutions for data alignment, validation and transaction settlement between trading partners. The network actually utilizes transaction-related data like contracts, customers, and products that are shared through the network to enforce configurable business rules on transactions for each participant, enabling industry level automation and trust. The MediLedger Network is used by pharmaceutical manufacturers, wholesalers, and dispensers to verify the authenticity and provenance of medications, and to comply with regulations such as the Drug Supply Chain Security Act (DSCSA) in the United States[14].

Strategies for Legal Professionals and Policymakers

As blockchain technology and smart contracts continue to gain traction, it is imperative for legal professionals and policymakers to adopt strategic approaches to navigate this rapidly evolving land scape effectively.

Legal Education and Upskilling

To effectively leverage the potential of blockchain technology and smart contracts, legal professionals must acquire the necessary knowledge and skills to understand, and navigate this emerging field.

- **Curriculum Development:** Law schools and legal education institutions should incorporate blockchain technology, smart contracts, and related topics into their curricula, ensuring that future legal professionals are equipped with the relevant knowledge and skills.
- **Continuing Legal Education:** Existing legal professionals should actively pursue continuing legal education opportunities, such as seminars, workshops, & online courses, to stay up-to-date with the latest developments in blockchain & smart contract applications.
- **Interdisciplinary Collaboration:** Legal professionals should seek opportunities to collaborate with technology experts, blockchain developers, & professionals from other relevant fields to gain practical insights & foster a deeper understanding of the technical aspects of these technologies.
- **Professional Associations and the Networks:** Joining professional associations and networks focused on blockchain technology and legal innovation can provide valuable resources, networking opportunities, and access to industry best practices.

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Regulatory Frameworks and Governance

Policymakers as well as regulatory bodies play a crucial role in establishing appropriate legal and regulatory frameworks to govern the use of blockchain technology and smart contracts, while also fostering innovation.

- **Adaptive Regulatory Approaches:** Instead of imposing rigid regulations, policymakers should adopt adaptive and flexible regulatory approaches that can evolve with the rapid pace of technological advancements in the blockchain space.
- **Regulatory Sand boxes and Innovation Hubs:** Establishing regulatory sand boxes and innovation hubs can provide controlled environments for businesses and legal entities to test and experiment with blockchain-based solutions while ensuring compliance with relevant regulations.
- **International Cooperation and Harmonization:** Given the global nature of blockchain networks, policymakers should prioritize international cooperation and work towards harmonizing legal frameworks and regulations across jurisdictions.
- **Public-Private Collaboration:** Policymakers should actively engage with industry stakeholders, legal professionals, and technology experts to gain insights, address concerns, and develop comprehensive regulatory frameworks that balance innovation and risk mitigation.

Cross-Border Collaboration

The decentralized with the global nature of blockchain networks necessitates cross-border collaboration among legal professionals, policymakers, and the industry stakeholders to address challenges related to jurisdiction, enforceability, and regulatory compliance.

- **International Legal Frameworks:** Efforts should be made to establish international legal frameworks and agreements to govern cross-border transactions and disputes involving blockchain technology and smart contracts.
- **Mutual Legal Assistance Treaties (MLATs):** Existing MLATs should be reviewed and updated to accommodate the unique challenges posed by blockchain-based systems, enabling effective cooperation and information sharing among jurisdictions.
- **Industry Standards and Best Practices:** Legal professionals and industry bodies should collaborate to develop industry-specific standards and best practices for the implementation and use of blockchain technology and smart contracts across borders.
- **Knowledge Sharing and Capacity Building:** Legal professionals from different jurisdictions should actively engage in knowledge sharing and capacity building initiatives to foster a global understanding of the legal implications and opportunities related to blockchain and smart contracts.

Ethical Considerations

As the blockchain technology which is a decentralized system, and the smart contracts which is the modern form of contracts are continue to rise and gain wider adoption, it is necessary to address ethical considerations and ensure that these technologies are developed, and deployed in a responsible and ethical manner.

- **Data Privacy and Digital Rights:** Legal professionals and policymakers should prioritize the protection of data privacy and digital rights, ensuring that blockchain-based systems and smart contracts comply with relevant data protection regulations and privacy principles.
- **Algorithmic Bias and Fairness:** The potential for algorithmic bias and unfairness in smart contract code must be recognized and addressed, with measures in place to ensure transparency, accountability, and fairness in decision-making processes.
- **Inclusive Governance:** The development and governance of blockchain networks and smart contract frameworks should be inclusive, incorporating diverse perspectives and stakeholder inputs to ensure equitable representation and decision-making.
- **Ethical Frameworks and Guidelines:** Legal professionals, technology experts, and ethicists should collaborate to develop ethical frameworks and guidelines for the responsible development and deployment of blockchain technology and smart contracts, addressing issues such as transparency, accountability, and social impact.

Conclusion

Rise of blockchain technology and the rise of smart contracts represents a transformative shift in how transactions, agreements, and the legal processes are performed and recorded. While these innovations present numerous challenges and the complexities, they also offer opportunities for enhancing efficiency, transparency, and the trust within the legal domain of legal system. As this article has explored both the legal implications and the opportunities arising from the blockchain and from the smart contracts which span various areas, including such as contract law, property rights, dispute resolution, and the regulatory frameworks. Legal professionals, policymakers, and the businesses must actively engage with these technologies, addressing the legal challenges and the considerations while harnessing their potential benefits. Effective strategies, such as legal education and up- skilling, adaptive regulatory frameworks, cross-border collaboration, and addressing ethical considerations, are important to consider for navigating this rapidly evolving land scape. Observing these strategies and system, the legal professionals and the policymakers can contribute to the responsible development and the adoption of blockchain technology and the smart contracts, expansion innovation while mitigating risks and ensuring legal certainty. The real-world applications with the case studies which are presented in this article demonstrate the practical implementations and benefits of blockchain and the smart contracts across various industries, including supply chain management, real estate, financial services, and the healthcare. Similarly this applications underscore the transformative potential of these technologies in addressing longstanding challenges and driving efficiency, transparency, and trust continues evolve of world, and to embrace digital transformation, the blockchain technology and the smart contracts will undoubtedly play a critical role in shaping the future of legal frameworks and the legal processes. Remaining informed, embracing change, and actively participating in the development of this emerging field, legal professionals and the policymakers can position themselves at the forefront of this technological revolution, contributing to the creation of a more secure, transparent and an efficient legal ecosystem.

Key Findings

- Blockchain and smart contracts have far-reaching implications across various legal domains, including contract law, property rights, dispute resolution, and regulatory frameworks.
- While offering benefits like automation, immutability, and trustless transactions, they also raise critical issues around jurisdiction conflicts, data privacy, regulatory compliance, and cross-border harmonization.
- Strategies are needed for legal professionals and policymakers to effectively navigate this evolving landscape, such as legal education, adaptive regulatory approaches, international collaboration, and addressing ethical concerns.
- Substantial opportunities exist for streamlining legal processes, enhancing intellectual property protection, fostering transparency and accountability within legal and corporate ecosystems.

Implications

- Legal frameworks and regulations must continually adapt and evolve to accommodate the rapid advancements in blockchain and smart contract technologies.
- International cooperation and harmonization of legal frameworks are crucial to address the global nature of blockchain networks and ensure consistent treatment across jurisdictions.
- Responsible and ethical integration of these technologies is imperative to mitigate risks while driving innovation, necessitating proactive engagement from legal professionals, policymakers, and stakeholders.

Future Research Potentialities

- Conducting in-depth case studies and empirical research on the practical implementation and impact of blockchain and smart contracts across various legal domains and industries.
- Exploring the development of specialized legal frameworks and dispute resolution mechanisms tailored for blockchain-based transactions and smart contracts.
- Investigating the interplay between emerging technologies (such as artificial intelligence, Internet of Things) and blockchain/smart contracts, and their combined impact on the legal landscape.

- Examining the long-term societal and economic implications of widespread adoption of blockchain and smart contract technologies, and their role in shaping future legal and governance systems.
- Continuous monitoring and analysis of regulatory developments, legal precedents, and best practices as the integration of these technologies progresses globally.

As the digital age continues to evolve, blockchain technology and smart contracts will undoubtedly play a critical role in shaping the future of legal frameworks and processes. By remaining informed, embracing change, and actively participating in the development of this emerging field, legal professionals and policymakers can position themselves at the forefront of this technological revolution, contributing to the creation of a more secure, transparent, and efficient legal ecosystem.

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Level of Satisfaction Among Patients Attending Tribhuvan University Ayurveda Teaching Hospital

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Abstract

Tribhuvan University Ayurveda Teaching Hospital having its own infrastructure and specialty Ayurveda treatments like Panchakarma, Ksharasutra, geriatric services has not been recognized that much extent as tertiary referral Ayurveda Teaching Hospital for various reasons. This has created difficulties for clinical exposure to the students and also the resources are not appropriately utilized. There may be various reasons but the patient satisfaction is also an indicator for quality of health care. The study was planned with the objectives to find out the satisfaction level among patients towards services offered at Tribhuvan University Ayurveda Teaching Hospital. 150 Patients were interviewed using a structured questionnaire and Patient Satisfaction Questionnaire (PSQ-18) composed of 18 items to collect data regarding patient satisfaction. Patient satisfaction level was assessed and found satisfactory. The majority of the respondents were satisfied with the cleanliness of the hospital, short waiting time, comfortable waiting area and doctor's explanation in terms of each medical test and medicines. If the government invests sufficiently in the hospital, it can contribute not only in clinical learning and patient management but also help in Ayurveda health tourism. Thus, the services range needs to be increased for further effective Ayurveda hospital services to be rendered to the patients.

Keyword: Ayurveda Hospital, *Panchakarma, Ksharasutra,* Patient satisfaction.

Introduction

Ayurveda system of health care is the oldest and well-established indigenous health care practices in Nepal. This system aims in bringing harmony between intrinsic and extrinsic factors to preserve the health of healthy people to treat the diseases and sufferings. Ayurveda Health Policy, 1995A.D. has the objectives of improving the health conditions of general population by making them self-reliant in health services and utilizing local medicinal herbs and medical entities (National Ayurveda Health Policy, 1996). According to the World Health Organization (WHO) traditional medicine strategy (2014–2023) mid-term review report (based on the inputs from 179 countries) 88% of the 194 WHO member states have acknowledged the use of traditional and complementary medicine (WHO Global Report, 2019). In some Asian and African countries, 80% of the population depends on traditional medicine for primary health

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care (WHO Traditional Medicine, 2008). Ayurveda is widely practiced in South Asia, especially in Bangladesh, India, Nepal, Pakistan and Sri Lanka (WHO Traditional Medicine, 2001). In Nepal, Department of Ayurveda and Alternative Medicine (DOAA) under the Ministry of Health and Population through its extensive network of Ayurveda hospitals, Ayurveda health centre, *Ayurveda Aushadhalayas* (dispensaries) and newly established *Nagarik Arogya Kendra* (citizen well-being centre) all across the nation, have been providing preventive, promotive and curative health services. Many people in Nepal depend on traditional medicine as there are more than 60 traditions concerning the treatment of illness and about 85% of the populations have depended upon traditional medicine for their primary health care (Raut K.D.P, 2011). It has become a tradition of Nepali society that first prefers home remedies for any kinds of ailments. Most of these home remedies are based on the principles, procedures and modes of Ayurveda system of medicine. Over the last decade interest in traditional medicine has increased and seems likely to continue (Shankar et al., 2012).

Ayurveda campus is the leading institution in the production of competent professionals for Ayurveda health care. It was established in 1972 A.D. as constituent campus of Tribhuvan University under the Institute of Medicine. Tribhuvan University is running its own Ayurveda Teaching Hospital since 2069 B.S. within the university premises. The hospital is providing outpatient department (OPD), inpatient department (IPD) service along with special Ayurveda services such as *Panchakarma* and *Ksharsutra*. Besides these regular services to patients, the hospital also facilitates clinical learning for undergraduate (UG) and postgraduate (PG) scholars. There are also geriatric services supported by the Ministry of Health and Population. Ayurveda hospital has been providing health care services but the number of patients visiting Ayurveda hospital is very limited in comparison to allopathic teaching hospitals of different medical colleges.

Although having competent doctors and compliant patients, many times the problems persist because of the policies, work culture and attitude shown by hospital staff (Prakash B, 2010). Non communicable diseases (NCDs) kill 41 million people each year, which is equivalent to 74% of all deaths globally (WHO Fact sheet, 2023). Each year, 15 million people die from NCDs between the ages of 30 and 69 years; over 85% of these "premature" deaths occur in low and middle-income countries. Despite having the huge potential in the prevention and management of various diseases like lifestyle disorders and NCDs management, the number of patients and services recipients is not increasing as expected in the hospital. Patient satisfaction is the measure of extent to which patients are happy with their healthcare services. Quality health care system aims in providing safe, equitable, evidence based, timely, efficient and patient centered care (National Academies Press US, 2001).

Data on patient satisfaction helps to plan an effective strategy to promote Ayurveda hospital services. Tribhuvan University is supporting for the integration and mainstreaming of Ayurveda Teaching Hospital. We are unable to get significant researches to assess the gaps and deficiencies in relation to the various services provided by the hospital. In this context, it was essential to study the services rendered by the hospital so as to learn about the lacunas and make suggestions for the betterment. In this background, the study was planned with the objective to assess satisfaction level among patients towards services offered at Tribhuvan University Ayurveda Teaching Hospital, Kirtipur.

Material and Method

This is a descriptive cross-sectional study conducted at Tribhuvan University Ayurveda Teaching Hospital, Kathmandu, Nepal in B.S. 2078 /79. 150 patients taking outpatient department (OPD) and other services were included in the study. Patients with a history of at least two visits in the hospital in seeking service or consultation were eligible to participate in the study. Faculty, staff, residents, interns and students of the Ayurveda Teaching Hospital and patients with their first hospital visit for seeking service were excluded. Patients were interviewed using a structured questionnaire and patient satisfaction questionnaire (PSQ-18) composed of 18 items to collect data regarding patient satisfaction (National Academies Press US, 2001). Survey questionnaire was filled on one to one interview basis individually with patients. Data was also obtained from the records of the Hospital. Patients unable to respond themselves due to illness, mental status and age, responses were collected from attendant or guardian. Ethical approval was sought from Institute of Medicine Institutional Review Committee (IOM-IRC) and consent was obtained from the participants before commencing the study. The study was funded as mini research grant from Research Directorate Tribhuvan University.

Results and Discussion

In the survey, percentage of female patients visiting Ayurveda Teaching Hospital was 54% which was more than male patients indicating the higher female patients visit this hospital in comparison to male. The percentage of 30-45 years patient was 36% followed by 15-30 (28 %,). Only 2% of patients below 15 years visit this hospital for treatment. It indicates lower patient numbers in pediatric age group. The highest percentage of patient with educational status graduate and postgraduate was 36.6% followed by secondary education (Class 6- 12th /equivalent) 33.3%, indicating the majority of educated patients visiting for hospital services. Ayurveda teaching hospital has been providing different services and the most commonly utilized service by the patients was outpatient department consultation for their problem. Among the different *Kayachikitsa, Panchakarma, Stree Prasuti, Shalakya, Swasthavritta* and *Kaumarbhritya* OPD consultation the number of recipients varies among the OPDs and also within the same department OPD in respect with different months. The other frequently utilized services are laboratory services, *Panchakarma* and *Ksharasutra* services.

Majority of the patients didn't experience any difficulties to reach the hospital indicating the appropriate location and easy access from road. 8% had confusion with National Ayurveda Research and Training Centre and 4% were confused because of unavailability of sign posts in different locations. 60% believed the usual procedure to get treatment in this hospital is First Come First service while making acquaintance with paramedics to get fast service is 0% indicating unbiased service for everyone. 52% experienced adequate cleanliness in hospital indicating the good cleanliness. 56% patients rated the behavior and approach of medical and paramedical staff in the Hospital extremely satisfactory. 88% experienced adequate waiting area and comfort indicating the spacious waiting areas in hospital. Less number of patients in OPD and hospital may be the reason to have available space seems to be adequate. 56% patients believe that there is adequate provision to maintain privacy for female patients. 36% didn't know and 8% believed that there was no provision of appropriate privacy indicating the need to develop in needed areas.

20% of the patients experienced unavailability of changing rooms/pretreatment and post procedure rest rooms, room for *Panchakarma* therapy. It indicates that there is urgent need for providing such basic facilities in the hospital for the patients. 98.6% of the patients never experienced any dispute or arguments. Only 1.3% had single incident of argument which shows that there is good working environment in the hospital. Majority of the patients (60%) believed that the service delivery was satisfactory. Only 4% responded the services as unsatisfactory. This might be because of the unavailability of the services like radiology and appropriate indoor services. 96% of the patients agreed that the doctors were good enough in explaining the reasons for medical tests which indicates the belief of the patients on the competency of the doctors. 76% agreed that they can get the medical care they need without being set back financially whereas 12% were uncertain and remaining 12% felt the services might create financial burden for them. This might be because of the cost of the Ayurveda medicines, the cost of procedures and the economic status of the patient. 24% agreed that they have to pay more for medical care than they can afford. 84% agreed that they have easy access to the specialists they need for consultation indicating the availability of the consultant in the hospital. 88% agreed that the doctors are very friendly and of having courteous manner. 4% were uncertain and 12% agreed that they were dissatisfied with some things about the medical care they receive, they also found hard to get an appointment for medical care when they seek which indicates the good satisfaction among the remaining 84% patients. The unavailability of the consultant doctors and also the hospital timing might be the factors behind their dissatisfaction.

Majority of the patients 56% knew about Ayurveda Teaching Hospital and available services from family and relatives indicating lack of awareness through mass communication regarding hospital and available services. In majority of the cases 48% residents and interns were taking the history and first enquiry to patients indicting the opportunities for residents and intern for learning. None of the patients received treatments from under training students and paramedics indicating the intern, residents and consultants providing the services. 44 % patients experienced on average half an hour to one hour time to receive overall OPD consultation services in the hospital indicating availability of fast service in the hospital. Time taking activities like *Panchakarma* and laboratory services take time as per the activity but service recipients do not have to wait in queue. Majority of the patients (56%) experienced most time-consuming activity as actual procedure and medicine purchasing indicating the need for fast service in those sections. 72.72% of patients returned back without receiving consultation or service once or more because of holiday or hospital service timing indicating the need for possible arrangements from the management. Highest number of patients visiting hospital was in the year 2075/76 followed by 2074/75 and the lowest number of patients visiting hospital was in the year 2069/70. Highest number of geriatric patients visiting hospital was in the year 2074/75 followed by 2075/76 and the lowest number of patients visiting was in the year 2071/72.

Most of the references regarding service utilization and patient satisfaction focused on teamwork, virtual teams and team's use of technical tools, like information and communication technologies to coordinate care (Van Houdt et al., 2013). General satisfaction, technical quality, interpersonal manner, communication, financial aspects, time spent with doctor, accessibility and convenience are factors that help to determine the quality of care and the patient satisfaction level (Marshall et al., 1994) in the hospital. Many studies have been done on patient satisfaction with medical services however; only few studies have been done on patient satisfaction delivered by traditional medicine, particularly Ayurveda. A study of service utilization and patient satisfaction among patients attending state level AYUSH Hospital in Delhi was carried out in the outpatient department (OPD) of Ayurvedic and Unani Tibbia college, a state level AYUSH Hospital. This study was a descriptive cross-sectional survey, in which total 100 patients were studied (Naaz, 2019). A cross-sectional descriptive study entitled - Assessment of patient satisfaction at Naradevi Ayurveda hospital in Nepal was conducted with outpatient department services from patients attending the OPD during February 2012. This study found that the majority of the participants (patients) were dissatisfied. The study suggested for health insurance scheme, quick services, and increasing timing of OPD hours for better quality (Shrestha et al., 2012). A study on effectiveness, safety, and standard of service delivery at a *Panchakarma* unit in a secondary care Ayurveda hospital was done to identify the patient's (actual recipients of *Panchakarma*) perception toward the effectiveness, safety, and standard of service delivery concerning *Panchakarma* through a structured survey at a pre-identified *Panchakarma* therapy unit in a secondary care Ayurveda hospital. The study may help making guidelines more pragmatic and closer to the real-life situation that would further help to identify the gaps between the "perceived" and the "practiced" standard of *Panchakarma* procedures when the same evaluated in the light of set procedural standards as are elaborated in classical texts of Ayurveda (Rastogi, 2011). Study for development of patient satisfaction questionnaire for Ayurveda Teaching Hospitals suggested that the questionnaire may become a useful tool to assess quality of health care in Ayurveda hospital (Deepa et al., 2018). A Study of service utilization and client satisfaction among patients attending a district Ayush Hospital in Karnataka which had different AYUSH systems was done. In this study through convenient sampling technique patients were interviewed using a semi structured questionnaire to collect data regarding patient satisfaction (Anandaraj et al., 2017). The impact of service quality on customer satisfaction of foreigners in *Ayurveda Panchakarma* centers in southern province Sri Lanka study was done in 2012 (Uyangoda et al., 2012). Study was done entitled Level of patient satisfaction at Government Unani & Ayurvedic Medical College Hospital in Dhaka, Bangladesh." This was a cross-sectional study conducted among 165 patients attended at the out-patient department. Patients' satisfaction was measured by the patient satisfaction questionnaire (PSQ-18) composed of 18 items (Snigdha et al., 2020).

In the last ten years patient flow in Ayurveda teaching hospital from year 2069 to 2079 B.S. there is gradual patient flow increment which is encouraging but the patient flow has been highly affected due to Covid-19 pandemic and recent times. The allotment budget by the Tribhuvan University is nominal. With limited budget it was very hard to run the institution. The inadequacy of faculties and staff are realized. The hospital was lacking its own core team of consultant doctors, resident medical officers, nursing staff, paramedical staff and supporting staff. The faculties from the Ayurveda campus provided the expertise services in the hospital. Despite the need of well-equipped pharmacy and dispensary for quality health service and education, it was yet to be established. Except the geriatric scheme there was not any other special service funded from other agencies and government of Nepal. Health insurance scheme was not started. Few departments' service recipients were gradually increasing due to services like *Panchakarma* and *Ksharasutra*. Laboratory was running in minimal resources (human resources and equipments). Department of radiology was not established and radiology services were not available due to lack of human resources. Due to lack of doctors and nurses' quarters there was difficulty in providing adequate quality services. The most difficult part was smooth running of indoor patient department because of the lack of duty staff and residential quarters for staff in or near hospital premises. As a result of the different challenges and barriers the hospital was mostly providing day care services and struggling for further development.

Despite good patient satisfaction level and having specialty treatments like *Panchakarma, Ksharasutra*, geriatric services the Ayurveda Hospital has not been recognized that much extent as tertiary referral Ayurveda Teaching Hospital for various reasons. This has created difficulties for clinical exposure to the students and also the resources are not appropriately utilized. This has been limiting further development in increasing additional services and infrastructure. The challenges and barriers in developing services may be of various reasons but lack of advertisement or recognition of the hospital through local and national media may be the reason behind this. Other factors like the time consumed during hospital visit, hospital services timing and the service providers' quality and the service availability may be the various challenges and factors to be considered.

Conclusion

Patient satisfaction level attending Ayurveda Hospital was assessed and found satisfactory. The majority of respondents were satisfied with the cleanliness of the hospital, short waiting time, comfortable waiting area and doctor's explanation in terms of each medical test and medicines. Quality with standards of service in Tribhuvan University Ayurveda Teaching Hospital Nepal was satisfactory. The main dissatisfaction was related to the provision of unavailability of easy way for handicapped, lengthy time for medicine from Ayurveda pharmacy and unavailability of some services. If the government and the university invest sufficiently in Ayurveda hospital, it can contribute not only in clinical learning and patient management but also help in Ayurveda health tourism. Thus, the service range needs to be increased for imparting further effective Ayurveda hospital services to the patients.

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Debating Peer-review

*Pralhad Adhikari**

Abstract

Peer review is deemed essential for the quality control of the publication of research. Peer review can refine a researcher and their research articles. However, peer review comes with many problems like the incompetence of the reviewers. It sometimes feels redundant and at other times, it seems too pushy from the editor's end. Using the method of autoethnography, I have identified some weaknesses including shortage of resources, motivation of reviewers, specialization, ignorance of quality control of literature review, and the blockade of innovation. Nonetheless, the peer review method will be used by journal editors until a better alternative is found. I share my experience of being peer-reviewed in seven years of my academic life in this autoethnography. The conclusion is that peer review is not the foolproof way to control the quality of review and research articles.

Keywords: Journals, quality control, research, psychology, publication

Introduction

Peer review is a process of examining a scholarly article by two or more peers for its quality control to decide if it is publishable in the journal. Peers are the experts in the specific field of research (Saughnessy et al., 2015, p.418). After a (team of) researcher(s) (and also writer[s]) sends an article, the editor of a journal checks if the article meets the objectives/theme of the journal. If it does, they send it to peer reviewers to check the industry standards of the research article along with the research. Reviewers provide feedback and researchers modify the article to be reviewed by reviewers again. If the writer can incorporate comments or defend her position, they are ultimately published by the decision of the editor. It is assumed that peer review is the primary and ubiquitous method of quality control (Tennant & Ross-Hellauer, 2020). Quality control is necessary in two regards- content and style. Unwarranted claims, unacceptable interpretations, or personal views are prevented by peer review from publication (Kelly et al., 2014). It also helps determine the validity, significance, and originality of the study. In short, peer review subjects manuscripts to expert evaluation ("Importance of Peer Review," 2014).

There are four types of peer review- single-blind review, double-blind review, triple-blind review, and open review (What is Peer Review, 2020). In single-blind reviews, reviewers' identity is kept hidden from authors. In a double-blind review, both the author and reviewers are anonymous. In

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triple-blind review, all editors, reviewers, and authors are anonymous. In an open review, both authors and reviewers are known to each other. Some journals adopt an even more transparent review process.

In comparison to the standard procedure of peer-reviewing, all peer-reviewed journals in Nepal are not peer-reviewed in a true sense; only a few of them are. For example, my article based on action research (Adhikari, 2022b) was unilaterally altered by the journal editors of a Nepali journal and the quality of the publication got a degradation rather than upgradation. I opine that, in the present context, the unreviewing journals should also continue as publication is more important. We can hope that we can search for quality after there is a significant increase in quantity.

Statement of the Problems

Peer review is the only way being used globally to ensure quality control of the research articles. However, there are some problems with the peer review process. It is not foolproof and hence the pace of science has slowed down. If the problems related to peer review can be addressed, the quality of journal articles can be increased even more.

Objectives

This autoethnography aims to identify the problems associated with the peer review process idiosyncratically. Figuring out the problems helps pave a path to their solution. Alternatively, peer review may be replaced with some better method to ensure the quality control of research papers. This research also briefly presents the merits of peer review based on my experiences of publication.

Methods

This paper is the outcome of my autoethnography in which researchers' lived experiences can be used to transform the practice like research and teaching (Belbase et al., 2008). The researchers themselves are the objects of study. In this method, the researcher can connect their narrative with the broader social and cultural context (Adams et al., 2015) to critique practices using reflexivity. I reviewed my published articles remaining on my computer or OneDrive (a cloud storage service) and recollected the experiences related to them. I also reviewed some auxiliary artifacts related to the published articles. I have analyzed my memories of experiences and figured out some themes/patterns and presented them here. This paper presents the researcher's perspective mainly rather than a reviewer's.

Results

There are many positive things about peer review. The constructive feedback is the base for learning things and building on the comments from reviewers, a researcher can improve their research article or rarely research itself. A researcher or a team of researchers may miss out on some "common sense" elements or insert silly/minor weaknesses. With an examination from reviewers, these can be spotted. The nuanced perspective from reviewers can enrich the research/review paper. An important benefit of peer review is to be updated about the current trends/conventions in the related field of study. The researchers can refine themselves with the help of peer review.

Despite the above-mentioned benefits, there are many weaknesses of peer review. Some challenges of peer review are given below and described concisely. The challenges are presented in thematic forms.

Individual Reviewers

In an age when teamwork is the trend to get a research article published, why should the sole reviewers determine if the paper is publishable separately? Why should they not work in a team, too? The sole authors do not have competence on everything like design, statistics, writing, language among others except in a few cases. They should work in a team so that they can complement the skills other members do not have. There is a stark need that reviewers work in teams as well.

Quality of Journals

With the proliferation of too many journals, anybody can be a reviewer or even an author. Even the journal may not go through the quality control process. The mushrooming of predatory journals is the result of a lack of regulation in the scholarly publication industry. If you check at https://portal.issn.org/ feeding an ISSN number, ISSN International Center's website cannot distinguish which journal is genuine and which is predatory/phony. In the globalized era, a Nepali researcher can get published from Croatia, the USA, Romania, Turkey, Brazil, China, or any other country in the world.

Shortage of Resources

Many budding journals have a lack of articles. They hardly find journals. They hardly find reviewers; sometimes, they find ones from the recommendation of authors themselves. The articles are commented/criticized harshly oftentimes but they are obligated to publish them ultimately despite lack of correction on the part of the authors because of a dearth of original articles. A coordinating staff at Tribhuvan University Journal (TUJ) told me that it was extremely difficult for them to find reviewers for articles written about psychology.

Dearth of Reviewers

After publishing two articles- one review and one theory- on accidents, I received a request to review a research article on accident. After my team published research paper on the mental health issue of older adults in an acclaimed journal, I got a request to review a research article related to the same issue from another acclaimed journal. I did not consider myself to be an expert; I thought myself to be a learner. It may be an impostor syndrome! However, my receiving of peer-review requests from highly acclaimed international journals indicates that they have a dearth of experienced reviewers.

Motivation of Reviewers

Generally, reviewers are not paid. Except for reviewing by intrinsic motivation, reviewers are likely to comment on the paper swiftly and superficially. The only motivational factor to review is to learn more skills of research during the review process or to get connected to the branded journal.

Diversity in Specialization

Now, the sciences including psychology are in the rapid process of development. A consequence is the deep specialization of the fields with the growth of sciences. Psychology will be more specialized and new perspectives will emerge down the line (Feldman, 2015, p.26). A researcher is an expert in the field. She needs to be reviewed by somebody who may not be the expert. Even though reviewers are specialized in an area, they may be assigned to review articles written from different specializations. In such a situation, the brand image of the reviewer like professorship, high position in an organization, or awards received by the reviewer may impact the editor's choice to comply with their decision to retain or reject the articles. For example, my research related to the construction and validation of usability (Adhikari, 2023) was apparently reviewed by psychologists who specialized in fields other than Industrial and Organizational Psychology (or Human Factors). Both of the two reviewers of the research article failed to notice the theoretical framework in the article that was existent in the first draft itself. They probably evaluated the process and missed out on the content. They did the quality control, but partially.

Late Publication

In the process of review, the researchers may have to modify the article several times. This dillydallies the publication. The decision-making that should have been benefitted by research output might be missed. In extreme cases, researchers may be asked to change the design of the research entirely. So, the publication is intensely delayed.

Ignorance of Quality of Literature Review

Many journals do not review how literature review has been done. They just look at the citation and if it is good, they assume that the literature review must have been done well too. However, literature review, as a critical summarizing of past studies or relevant literature, is subpar in several cases. Tracing back to what has been cited and how it has been cited should be a part of quality control.

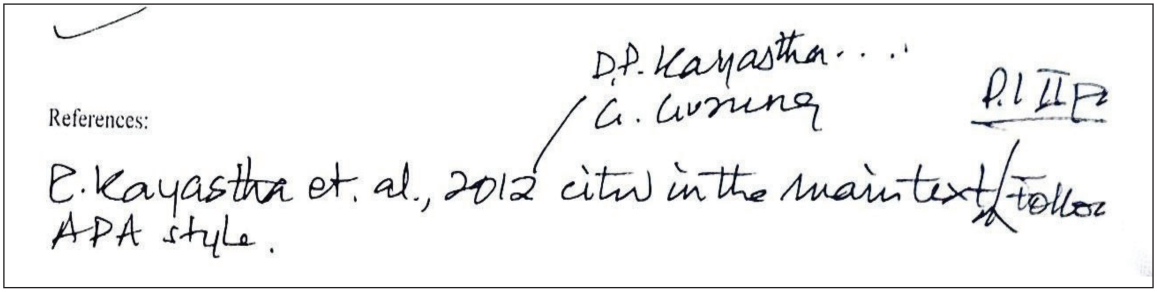
D.P. Kayastha . . .
G. Gurung
P.1 II P2
References:
E. Kayastha et. al, 2012 citw in the main text / follow APA style.

Figure 1. Reviewer's dissatisfaction about use of in-text citation when the two first authors had same surname. This instance shows the reviewer's lack of update on APA 7th style. I do not question reviewer's qualification but the lack of update is seen as a trend as it has happened to me in cases of other articles also.

Over smart Editors/Reviewers

Some editors, like senior professors or overconfident people, are not welcoming to new ideas. They think what they have learned is good, enough, and right. They do not update themselves to new methods or technologies and take a rigid stance to reject papers with new approaches, methods, or technologies. I continuously sent two qualitative research articles to TUJ but the editors did not respond to the article. I hoped to get rejection mail if they did not deem my article fit for their journal. I generally hope to get reasonable causes of rejection also. The culture of responsiveness to customer is lacking in almost all Nepali governmental offices but I infer that their disinterest in qualitative research was the main reason. I have received calls, not emails, from the very journal for the articles that had the possibility of getting published. I recall a fellow researcher blaming an ethical review board of not focusing on ethical aspects and commenting on other details of the proposal.

- Demographic details of the participants is missing
- CFA and EFA on the same data set need explanation and support for doing so, as it is not generally accepted.
- EFA followed by CFA is not generally accepted
- Before deleting the items, the author could have checked the modification index and tried covariance between variables.

Figure 1. Comments for my article published in TUJ (Adhikari, 2023). Some comments are constructive. However, some comments are ineffective, if not devastating.

Monistic Mindset in Science

There is no single way to do science, especially behavioral science like psychology, correctly. New trends always emerge. For example, significance testing was considered classy in statistics some decades ago. Now, it is thought necessary but insufficient by some. Some people advocate to rule out its use from research. Bayesian statistics has arisen as an alternative to classical statistics. Few reviewers would be ready to master all these multitudes of possibilities. Some reviewers/editors stick to the traditional monistic mindset of doing science and thwart the possibility of new methods or styles. They are not tolerant of pluralism in science.

Stifling the Innovation

It is seen that journal editors and reviewers religiously believe in science or the way of doing it. When the editors and reviewers ritualistically stick to the tradition, they may stifle the innovation in industry. The new ideas, techniques, and methods may get nibbed in the bud. In the name of peer review, the journals may promote the unscientific practice themselves. Open-mindedness is the essence of a scientific attitude (Branscombe & Baron, 2017, p. 22). Moreover, what we call science is also a culture and convention at the same time. Quantitative research, what we call scientific, is founded on positivism. Positivism, as a philosophical framework, was intuitionally proposed by some philosophers, say Auguste Comte (Hergenhahn & Henley, 2014, p. 158). In other words, what we claim scientific lays on unscientific ground. So, providing a little space for unconventional write-ups should not be a bother to the people in journals.

Review of Research or Paper

Most of the time, the peer-review process is too concerned with the quality of the research paper rather than the research itself. If the focus is on paper, it is the aesthetics' and technicality's quality being ensured by the peer review. Some alternatives like pre-registering (Simmons et al., 2021) are being introduced to ensure research quality by controlling HARKing (Hypothesizing After the Results are Known) and p-hacking. p-hacking is claiming non-significant results as significant by changing p-values (Angelika & Schönbrodt, 2023).

I myself do not object to HARKing even though accepting the process makes its label invalid. In this process. I notice the exploratory design in quantitative research. You may ethically and genuinely collect data and explore the relationship among variables and then present the results in a research paper. In doing so, we may discover the relationship between variables in a way we may not have intuitively imagined. This way of research become the inductive approach to doing the quantitative research. However, ethical reporting requires that researcher do not present post hoc hypotheses as a priori ones (Rubin, 2017). In rejecting the articles without the theoretical framework, the top-tier journals are thwarting the chances of the emergence of new theories via quantitative research designs. One of my team's articles (Adhikari & McLaren, 2023) was rejected by a Q1 journal for that very reason. With the fear of being rejected again, we had to add a theory as a framework in this research to get published in the next journal.

Lack of Retrogressive Effect

Some comments from peer reviewers may question the design of the research. It is not possible in quantitative research to alter the design retrogressively. However, the researcher is under pressure to get published. The researchers chose an alternative journal and reframed the wording of the report to evade similar remarks (and rejection) from another journal.

My Experience

My first publications (Adhikari, 2014, 2015, 2017b) were grand. The newspaper article was culled by an editor. The review article was rigorously peer-reviewed and published more than 12 months after submission. The book chapter was peer-reviewed but it got published relatively more easily. After I was selected into Tribhuvan University as a faculty, I turned to my past studies to get them published. At least three papers (Adhikari, 2018a, 2018b, 2018c; Adhikari & Acharya, 2019) were published in predatory journals without my knowledge that they were predators, even though I did not pay them any money. All of these publishers pretended that they based their publications on the peer-review process. I get several spams still but ignore them. I am proud that I have been published in good journals recently (Adhikari, 2017a, 2019, 2020; Adhikari & Poudel, 2020). An article published in 2020 was modified to the extent that I was too dissatisfied with the final outcome as it was totally different than what I had intended. The reviewers were too pushy to alter its statistical aspects so I had to change the title. Nonetheless, I insisted on getting published owing to my obligation for career growth. In an article (Adhikari, 2017a), the reviewers were not welcoming/updated to qualitative research. They forced me to add more research participants later. The outcome of the research seemed like a mixed-method design rather than qualitative. I am sure that I can get published in top-tier journals in the coming days. However, I believe that getting published is more important than choosing a journal brand for now in the Nepali context concerning the paucity of studies in psychology. Number of citations and impact factor of journals are secondary.

How to cite this Book (APA 7):

Adhikari, Y., Shrestha, S., & Sigdel, K. (2022). *Nepalese Psychology: Volume One*. Evincepub. India: chhattisgarh.

Figure 2. This picture, which presents suggestions from editors to readers on the way to cite the book they published, shows a lapse on the part of editors. There are mistakes in more than one place. The editors' lack of update is conspicuous in this publication. They seem to have a hangover of the 6th edition of the Publication Manual of APA to mention the location of publisher and they present themselves as writers when they are editors. I mention this example because I was also a part of this book (Adhikari, 2022a).

Discussion

Peer review is popular and rightly so. However, its usefulness has not been appropriately proven. It is just a convention to peer-review journal articles. Even though peer review lacks scientific verification for effectiveness, most people in the scientific community believe that it is necessary. There are several problems including a lack of holistic competence among reviewers and the time-consuming nature of the review process. Peer review is necessary but a better alternative is desirable for the quality control of the published works in scientific journals.

Conclusion

Peer review has many advantages and also many flaws at the same time. The alternative way to maintain quality control is desirable. Nonetheless, the use of peer review will not get obsolete soon despite its lapses. This paper showed some weaknesses. They can be addressed by journals to improve the quality of research papers and accelerate the development of science finally.

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What is peer review? (2020https://www.elsevier.com/reviewers/what-is-peer-review

Successful Rearing of *Gazalina chrysolopha* larvae

Pratiksha Pathak, Bhawan Pandey*, Daya Ram Bhusal1*, Pratap Karki**, Ranju Kharel Sitaula**, Madan Prasad Upadhyay****

Abstract

The Gazalina chrysolopha is included in the Notodontidae family. Adults have white head and thorax, black legs and antennae. Males and females are similar except in abdominal part and antennae type, and female have larger fulvous, less fringed abdominal segments than male moths. Larvae show processionary behavior, moving upward during the night for feeding purpose and downward on the host plant's base during day time. Larvae are voracious feeders damaging the host plant Alnus nepalensis. Setae present in adults and larvae are suspected to be toxic to the human eyes, causing severe eye diseases SHAPU. The larvae hatch out from the egg on end of November. Larvae collected on December were reared in the laboratory, and different instar larvae show different feeding patterns. Third instar larvae's mortality rate is higher than the other four instar phases. Fourth and fifth instar larvae are more voracious feeders. They feed voraciously during the initial phase after moulting and stop feeding during the later phase. The setae in the second, third, fourth and fifth instars morphologically resembles the setae in the adult moth. The rearing of larvae of Gazalina chrysolopha is an ongoing process in the laboratory for the further study of its life cycle.

Keywords: Nepal; *Gazalina chrysolopha*; Ecology; Larvae; SHAPU; Taxonomy

Introduction

Moths are the insect (Order; Lepidoptera) with almost 160,000 species worldwide (Regier et al., 2009). Lepidoptera are the only group of insects with scales covering their wings, with few exceptions (Wahlberg et al., 2013). There are about 1,267 species in Nepal (Thapa , 2016). Moths can be differentiated from butterfly by observing antennae (typically threadlike or feathery). Moths have mostly dull colours wings but there are many species with spectacular colors and patterns, shape and size also vary according to genus and species. They are mainly nocturnal and attracted to light and plant feeding, although some species are diurnal (Wahlberg et al., 2013). Walker first outlined the *Genus Gazalina* in 1865, which belongs to the Notonotidae family (Rader et al., 2009). Three species *(tranversa, apsara, and chrysolopha)* of *Gazalina* moths are found in

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Nepal (Smith 2010). Among these three species, *Gazalina chrysolopha* is more abundant in the mid-hill region (Khanal & Shrestha, 2022). *Gazalina chrysolopha* has a white head and thorax, black legs and antennae. Males and females are similar except in abdominal part and antennae type, female have more significant fulvous, less fringed abdominal segments than male moth. Female *Gazalina* is easily distinguished through the abdominal tip with yellow tuft and large number of setae (Srivastava & Mukhopadhyay, 2006). *Gazalina chrysolopha* is suspected as the major agent that causes severe eye diseases, such as SHAPU (Manandhar, 2011). Seasonal Hyper Acute Pan Uveitis (SHAPU) is the most significant mysterious eye disease dominantly reported from Nepal, that may cause blindness, occurring every odd year since 1975 predominantly in children, manifesting with symptoms such as abrupt development of redness, leukocoria, severe vision loss and mild pain (Gurung, et al., 2021). Setae of *Gazalina chrysolopha* is considered to be main reason for damaging the eyes (Upadhyay et al., 2021).

Statement of problems

Gazalina chrysolopha is nocturnal insect larva showing processionary behavior. It defoliates its host plant's leaves, damaging the whole plant in large areas as it is a voracious feeder. Larva of this moth consists of urticating setae on its abdominal segments, which can cause severe eye diseases, such as SHAPU. Research on the biology and behavior of larval stage has not been done scientifically yet.

Objectives

The general objective of this study was to understand the feeding behavior of larval stage.

The specific objectives of the study are to find the

- larval growth rate, and
- morphological differences between different instars.

Materials and methodology

The field survey was done in the December of 2023 for the observation and collection of larvae of *Gazalina chrysolopha* from the different mid-hill sites of Gandaki Province. Larvae within 1st and 2nd instar were observed in the host plant *Alnus nepalensis.* Observed larvae were collected in the well-ventilated box with the host plant leaves for rearing. Major precautions were applied to avoid the contact of larvae setae with eyes while collecting the sample. Larva were reared in the entomological laboratory of the Central Department of Zoology, Tribhuvan University, Kirtipur in the room temperature. Different stages (1st and 2nd) larvae were kept in other boxes with leaves of the host plant for feeding. Physical parameters (temperature and relative humidity) were taken six times within 24 hours using a hygrometer. The weight of larvae and feeding materials were taken after 24 hours each day.

Results

The larvae collected from the study sites were reared in the room temperature of the Central Department of Zoology. Larvae are voracious feeders, eating the leaves in high amounts. First, instar larvae were brownish coloured with short hairs on the dorsal thoracic and abdominal segments. The reared 2nd instar larvae molted within 30-35 days in the laboratory. The body colouration and the length increased during molting from the first instar to second instar. The second instar larvae molted within a month into 3rd instar larvae. Third instar larvae were darker in color and become more voracious than second-instar larvae. The large population of third instar larvae were dead may be due to an unfavorable environment in the laboratory. Third instar larvae molted into fourth instar within 40-47 days. During the initial stage they were highly voracious but at the later stage, they stop feeding causing losses in weight. Fourth instar larvae turned into fifth instar within 50-58 days. Larvae become longer during fifth instar larvae; the hair on the body segments is longer and darker than in the initial stages.

The number of setae present on larvae also increased progressively. The morphology of larvae was the same as setae present on adult moth, which show the chance of causing SHAPU diseases even due to larva. The larvae are still in the fifth instar phase, getting ready to pupate in the laboratory.

Figure 1: 1st instar larva

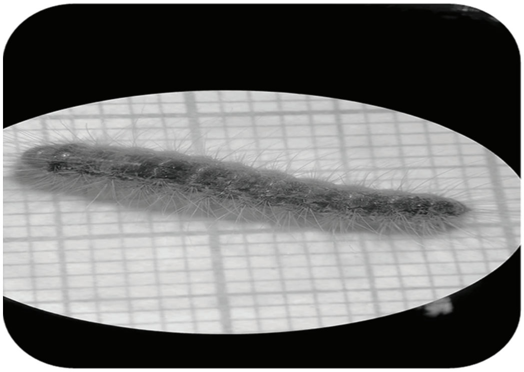

Figure 2: 2nd instar larva

Figure 3: 3rd instar larva

Figure 4: 4th instar larva

Discussion

Three species of *Gazalina* are found in Nepal (Sugi, 1993); among these, the *chrysolopha* species is the suspected as major causative agent for the SHAPU disease in human eye (H. Gurung, Sitaula, et al., 2021). The emergence of adult occurs in the monsoon of odd year and also as opportunistic emergence in even year (Gurung, et al., 2021). The emergence of adult is being connected with the new cases of SHAPU patients in the periphery of Pokhara and Kathmandu districts (Upadhyay et al., 2021). The mature adult lays hundreds of eggs in cluster, with yellow setae covering for protection.

The egg hatched within a month (Srivastava & Mukhopadhyay, 2006). Larvae are voracious feeder, can damage plants of large scale areas. Outbreak of *Gazalina chrysolopha* in oak forest damaged the whole forest in by defoliating the plants' leaves (Rahman & Chaudhry, 1992). (Srivastava & Mukhopadhyay, 2006) also described about the defoliation of *Alnus nepalensis* by *G. chrysolopha* species in India in a massive way. Urticating setae present in female adults and larvae causes blindness in children(Battisti et al., 2017). The larvae from 2nd to fifth instar consists of urticating setae on abdominal segments. The caterpillar of this moth major pest of *Alnus nepalensis* and rhododendron plant when there is low rainfall during post-winter months(Gurung, et al., 2021)

In this study we have studied the life cycle and feeding behavior of *Gazalina chrysolopha* by rearing the larval stage of this moth. Morphological development of setae from the larval stage is seen. The setae present in the larvae are short and stiff in each abdominal tergite while in adult setae are longer and thinner in the seventh abdominal tergite (Battisti et al., 2017).

Conclusion

Gazalina chrysolopha has five instars in their larval stages, first instar are shorter and brown in color without urticating setae on abdominal tergites; second, third, fourth and fifth instar larvae are progressively longer and darker in each instar (Srivastava & Mukhopadhyay, 2006). Larva show processionary behavior, later, four instar phases are voracious feeders damaging the plants by defoliating the leaves of host plants *Alnus nepalensis.* The setae present in abdominal tergites of larvae may also cause SHAPU diseases as these setae are morphologically same as those present in the adult moths. Further study is ongoing on the setae and its chemical composition.

Acknowledgement

We are thankful to the Central Department of Zoology for providing us with space and materials within the entomological laboratory to rear larvae throughout these months.

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ASSESSING THE ROLE OF ROADSIDE VEGETATION IN OFFSETTING AIR POLLUTION IN KATHMANDU VALLEY

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Abstract

Air pollution has emerged as one of the most visible and hazardous components of environmental degradation in Kathmandu Valley. Different strategies can be adopted to reduce the concentrations of pollutants. Vegetation can reduce the concentration of air pollution, but there are very limited studies reflecting the effectiveness of vegetation in reducing air pollution concentration. This study presents the analysis and interpretation of ambient particulate matter concentration in vegetated and non-vegetated area, along with the comparison of air quality in both the sampling areas. Five sites having both roadside vegetation and without vegetation inside Kathmandu Valley were considered for the study. The air quality was monitored using Air Visual Pro, during traffic rush hours in the morning and evening for two seasons: winter and spring. The results indicated that the level of particulate matter was significantly higher surpassing the threshold limits by USEPA, WHO and NAAQS in non-vegetated area of all five sampling sites, while the concentration was lower in vegetated roadside areas. Similarly, the pollution level was higher during spring season than that of winter season. Furthermore, the variation in concentration of $PM_{2.5}$ and PM_{10} was lowest in the partly closed green area of one-layered coniferous trees and mixed trees. The research thus provides evidence for optimization of green area coverage in urban area, and improve air quality effectively in the future.

Keywords: Air pollution, Particulate matter, Roadside vegetation, Seasonal variation

Introduction

Pollution is an introduction of poisonous or harmful substances in a wrong time at a wrong place or undesirable/ unwanted changes in anything (Diamond et al., 2015). Among various types of pollution, air pollution being burning issue and a serious problem is defined as an alteration of air quality characterized by any chemical, biological or physical pollutants in the air, or undesirable presence of impurities in the atmosphere. It is caused by various natural sources like: volcanoes, wildfires, dust storms, sea salt spray or human activities like: power plants, industry, households, transport, agriculture, etc. and every year, many people die due to air pollution related problems (WHO, 2014). The presence of particulate matter (PM), especially the PM_{10}, $PM_{2.5}$, aerosols, and CO_2 in atmosphere are mostly responsible for deterioration of air quality (WHO, 2006). According

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to Shaddick et al. (2020), air pollution is increasing rapidly and ambient air pollution is estimated to cause over 4 million premature deaths annually in most of the developing countries. In the present context, the problem of airborne particulate pollution is being more serious with the accelerating urbanization, huge number of industries, factories and means of transportation, which may emit large amount of air pollutants. And the exposure to these airborne particulate matters resulting short-term or long term respiratory and cardiovascular diseases (Thurston et al., 2017).

Air-borne PM, which comes in different sizes with chemical and biological compositions, cause the majority of the disease burden attributed to air pollutants, of which more than half relates to ambient exposures by inhalation (IHME, 2019). PM has recently been ranked fifth among environmental risks, and thus first among the major risk factors threatening human health globally in terms of its disease burden (Cohen et al., 2017). It may be directly emitted from a source, such as: construction sites, unpaved roads, fields, smokestacks or fire, while most of the particles formed in the atmosphere as a result of complex reaction of chemicals such as sulfur dioxide and nitrogen oxides emitted from industries and automobiles. The particles like dust, dirt, soot or smoke are large enough to be seen with naked eyes, however other particles like $PM_{2.5}$ or PM_{10} can only be detected using an electron microscope (USEPA, 2004). Particles less than 10 micrometer can get deep into the lungs, while other particles smaller than that even get into bloodstream.

PM_{10} is considered to be the primary pollutants that affect environmental air quality and damage respiratory system affecting human health, but $PM_{2.5}$ is even more deleterious, as it can enter through alveolar and blood circulation system resulting in variety of human systematic diseases (Qiu et al., 2019). Air pollution due to particulate matter hence proved to be very hazardous due to trans-boundary in nature of PM that can be transported long distances by wind and settle in areas far away from the source of emission (Kan & Chen, 2004). It can have a significant impact on large wildfire, deteriorating air quality across wide geographical area and also responsible for reducing visibility, by developing haze in the air. The major outdoor sources of $PM_{2.5}$ are vehicles, wood burning, industrial activities and other forms of combustion, while indoor sources are leaky windows and doors, stove top cooking, fireplaces, incense, cleaning products and fragrances (Qiu et al., 2019).

Various studies have concluded that vegetation and green spaces have shown reductive effects on air-borne pollutants concentrations, especially particulate matter (Nowak et al., 2006). Though due to cultural and disciplinary differences, there is not an agreed definition of green spaces, they are commonly understood as outdoor, on-land vegetation (Egorov et al., 2016). Urban green space plays an important role in improving environmental quality, adding beauty to the environment, regulating the urban microclimate and promoting urban sustainable development (Wang & Yu, 2008). The spatial and temporal distribution of urban vegetation has different role and function in reducing concentration of airborne particles, for instance Selmi et al. (2016), found the different land use types like forests, parks, gardens, industrial and residential areas had different effects on reduction of airborne particulate matters. In the study by Diener & Mudu, (2021), the process of reduction of pollutants by vegetation has been discussed on the basis of three distinguished mechanisms: Deposition, Dispersion and Modification of Particulate Matter. Meanwhile, the trend of research has rapidly grown on evaluating the ameliorating effects and underlying physical, biological and chemical mechanisms of vegetation on PM (Wolf et al., 2020). The variety of plant species have their own role in reducing pollution, such as: broadleaf with waxy layers, leafy hair and evergreen conifers help in capturing pollutants. However, this present study only focuses on effects and role of whole green space/ urban vegetation in maintaining environmental air quality, rather than identifying role of individual plant species. Besides, the study only comprises five sampling sites, which only covers certain portion of Kathmandu district and the data was collected only of two seasons, so variation among seasons cannot be observed.

Statement of the Problem

Kathmandu Valley is a center for major facets of country, such as: economy, employment, education, tourism, culture, politics, administration, industrialization, residential and commercial and thus considered to be one of the ten fastest urbanizing city in the world (Ishtiaque, et al., 2017). The emission of $PM_{2.5}$ as major air pollutants in Kathmandu Valley along with the atmospheric condition of valley makes it significantly hazardous to human health. According to WHO, the recommended threshold limit for annual mean concentration of $PM_{2.5}$ is 10 μg/m^3 in the context of Nepalese air quality (IQ Air, 2019), but different studies have shown the increase in threshold limit. Air pollution in Kathmandu Valley is resulting serious health hazards. Roadside areas are more vulnerable to the effect of particulate matter due to high vehicular movement, which enhances the concentration of particulate matter by fossil fuel combustion. Thus, to avoid the possibility of air pollution impact and to reduce exposure to hazardous air pollution, this present study is vital. Furthermore, it is important to create public awareness about air pollution and circulate the knowledge regarding the role of urban vegetation. Also, the smart city concept with ecological design is focused. This study will prioritize on planting trees along roadside and on open space and taking care of green areas, build more urban parks, avoid use of aerosols and improve transportation system.

Objectives of the study

The objective of the study is to assess the role of roadside urban vegetation in offsetting urban air pollution, basically particulate matter ($PM_{2.5}$, PM_{10},), CO_2 and AQI. The study also determines the variation in pollution load across the areas with seasons.

Materials and Methods

Study Area

Different areas inside Kathmandu Valley were selected on the basis of vegetation along certain section of roads and without vegetation along the same section (Figure 1). Koteshwor (27.704954N, 85.35202E) with an elevation of 1308.57 m, Gokarna (27.7381985N, 85.3852510E) and elevation 1686.89 m, Chovar (27.6624749N, 85.2950191 E) having an elevation of 1413.12 m, Thankot (27.699464N, 85.207728E) with an elevation of 1435.56 m and Sitapaila (27.717438N, 85.264725E) with an elevation of 1354.51m were considered as our study sites.

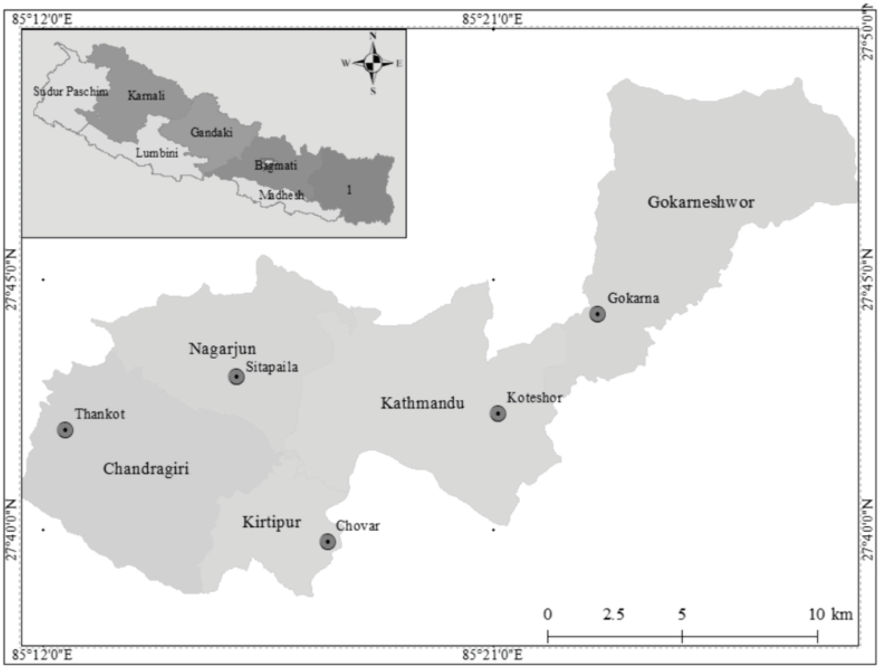


Figure 1: Map showing study area

Methods

The data was collected from five sampling sites, conducted on roadside at five locations in Kathmandu District, during two successive time periods of winter season and spring (Dec/Jan – March/April, 2023). The five sites: Koteshwor, Gokarna, Chovar, Thankot and Sitapaila were selected on the basis of roadside vegetation growing in certain portion of these areas. Several parameters like PM_1, $PM_{2.5}$, PM_{10}, CO_2 and Air Quality Index (AQI) were measured with the help of IQ Air, Air Visual Pro N1, a laser technology to assess the air quality. The data were collected from two distinct sampling sites of each area, one from roadside vegetated area and another from area lacking vegetation along roadside. The sites were chosen adaptively with a view to meet our objectives of sampling in both vegetated and non-vegetated area along roadside. The distance between two sampling sites was taken as 1 km on same road section with same traffic movement. The data for air quality monitoring was collected from the same side of road section of each sampling sites using a hand-held particle counter device (IQ Air, Air Visual Pro N1) following the guidelines provided by National Ambient Air Quality Standard (NAAQS, 2012) and was recorded during traffic rush hour for about 10 hours and data recorded at every 10 minutes interval was taken for the analysis. According to Kathmandu Metropolitan Traffic Police Department (KMTPD), the peak traffic hour in Kathmandu valley was regarded to be from 8:30-11:00 am and 3:30-7:00 pm. Hence, the data were collected for about 10 hours (8:30 am to 6:30 pm), covering the traffic rush hours. The concentration of particulate matters was tested in each site during same period of time in order to avoid dramatic changes in the meteorological factors (Qiu et al., 2019). All the tests were performed by placing the device at a height of 1.5 m, which is the average height of human respiration (NAAQS, 2012).

Data Analysis

AQI is a system for reporting severity of air quality levels in a way that is easy to understand. The index ranges from 0-500, where higher index values indicate higher level of pollution. AQI is computed in different ways around the world, whereas United States and China represents two widely used AQI systems. However, Air visual Pro recommends following the US AQI, which is more stringent for lower values. The data collected is thus analyzed using Microsoft Office Excel 2007 software (Microsoft Corporation, Redmond, WA, USA) and R software 4.2.2. The mean of the collected data was calculated and used for further analysis. Thus, the calculated mean of vegetated and non-vegetated area of different sampling sites and of two different seasons are compared. The t-test was performed using 'R' to identify the significant difference of mean values of different parameters among vegetated and non-vegetated areas.

Results and Discussion

The concentration of $PM_{2.5,}$ PM_{10}, CO_2 and AQI values were significantly discrepant in the selected sampling sites as per the vegetated and non-vegetated roadside, and along the two different seasons. Among the five sites the highest concentration of the particulate matter was found in Koteshwor in both vegetated and non-vegetated areas, followed by Thankot, Gokarna, Chovar and Sitapaila. The highest concentration of pollutants was found in spring season than that of winter season, in almost all of the study sites. The highest concentration of these particulate matter in Koteshwor might be due to the heavy traffic movement, and an airport nearby. The reduction and minimization of pollution in these sites in airborne particulate matter in both seasons can be ranked as: Vegetated roadside > non-vegetated roadside in a same roadway. It indicates that the green coverage rate was negatively correlated with airborne particulate matter. The mean value of CO_2, $PM_{2.5}$, PM_{10} and AQI of all of the sampling sites in both seasons are shown in Table 1.

Table 1: Air quality assessment of vegetated and non-vegetated area of urban roadside of winter season

Sampling sites	**Mean at vegetated areas ± SE**				**Mean at non-vegetated areas ± SE**			
	$PM_{2.5}$	**AQI**	**PM_{10}**	**CO_2**	**$PM_{2.5}$**	**AQI**	**PM_{10}**	**CO_2**
Chovar	50.32± 3.15	114.93± 2.87	55.78± 2.9	422.64± 0.22	53.49± 2.23	166.36± 2.40	87.39± 5.35	427.69± 1.97
Thankot	67.81± 1.21	147.35±0.84	81.38±1.82	422.08±0.09	71.6±1.85	154.19±1.22	104.96±3.0	426.74±0.21
Sitapila	39± 0.50	109.73±0.33	68.2±1.39	400.85±0.40	56.3±1.61	131.29±1.10	91.65±3.51	408.92±0.95
Kotesh-wor	78.51± 2.10	162.86±2.31	92.69±3.12	421.43±0.42	85.23±3.06	422.64±5.35	100.33±5.27	432.07±0.32
Gokarna	71± 0.24	152.3± 0.28	83.44± 3.2	448.74±0.76	72±0.77	155.04±0.44	114.66±1.56	452.2±2.24

Among the five sampling sites, the mean concentration of $PM_{2.5}$ in winter of vegetated site of Koteshwor was found to be highest than that of other sites, i.e., 78.51±2.10 μg/m^3 and non-vegetated site was found to be 85.23±3.06 μg/m^3, while the lowest mean concentration of $PM_{2.5}$ of vegetated site found to be of Sitapaila was 39±0.50 μg/m^3 and non-vegetated site was found to be 56.3±1.61 μg/m^3 (Figure 2).

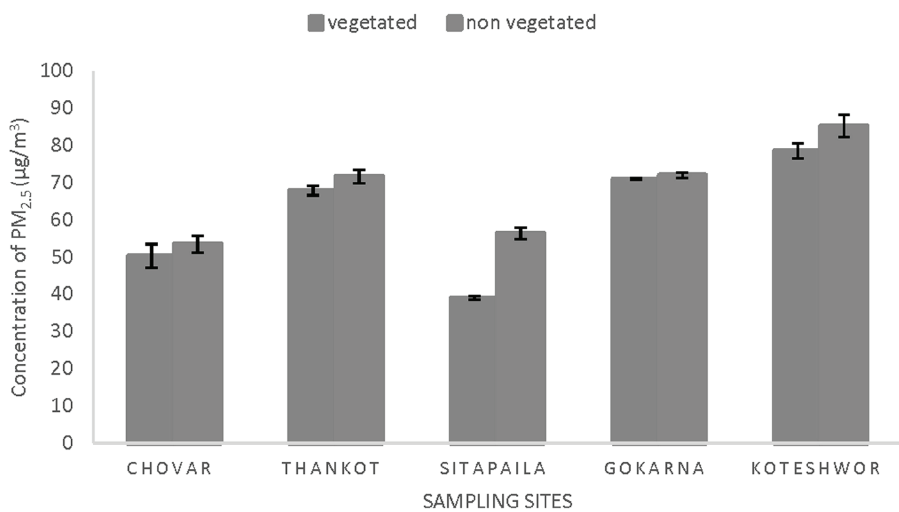


Figure 2: Concentration of $PM_{2.5}$ in vegetated and non-vegetated area

Similarly, the mean concentration of PM_{10} of vegetated site of Koteshwor was found to be highest among others, i.e., 92.69±3.12 μg/m^3 but the highest concentration of non-vegetated site was found to be of Gokarna, i.e., 114.66±1.56 μg/m^3, while the lowest mean concentration of PM10 of vegetated site found to be of Sitapaila was 68.20±1.39 μg/m^3 and non-vegetated site was found to be 91.65±3.51 μg/m^3 (Figure 3).

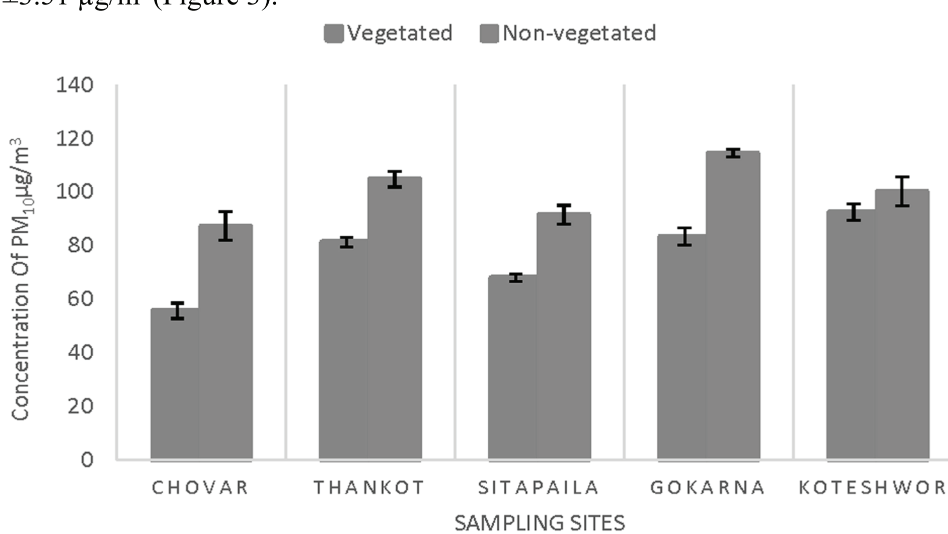


Figure 3: Concentration of PM_{10} in vegetated and non-vegetated area

The mean value of AQI of vegetated site of Koteshwor was found to be highest among others, i.e., 162.86±2.31 and that of non-vegetated site was found to be 422.64±5.35, while the lowest mean value of AQI of vegetated site was found to be of Sitapaila, i.e., 109.73±0.33 and non-vegetated site was found to be 131.29±1.10 (as shown in Figure 4).

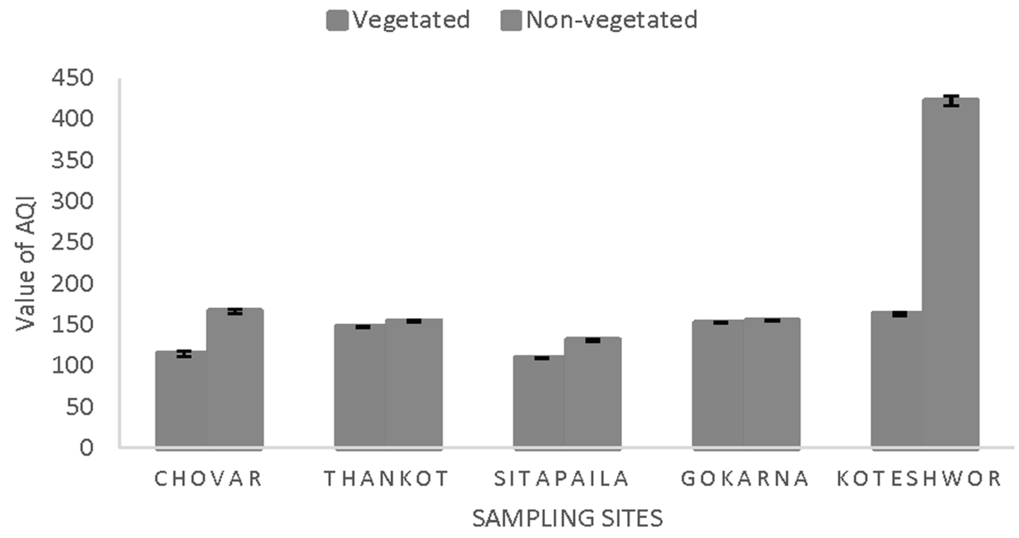


Figure 4: Value of AQI in vegetated and non-vegetated area

But, the mean concentration of CO_2 of vegetated site of Gokarna was found to be highest among others, i.e., 448.74±0.76 and that of non-vegetated site was found to be 452.20±2.24, while the lowest mean concentration of CO_2 of vegetated site was found to be of Sitapaila, i.e., 400.85±0.40 and non-vegetated site was found to be 408.92±0.95 (Figure 5).

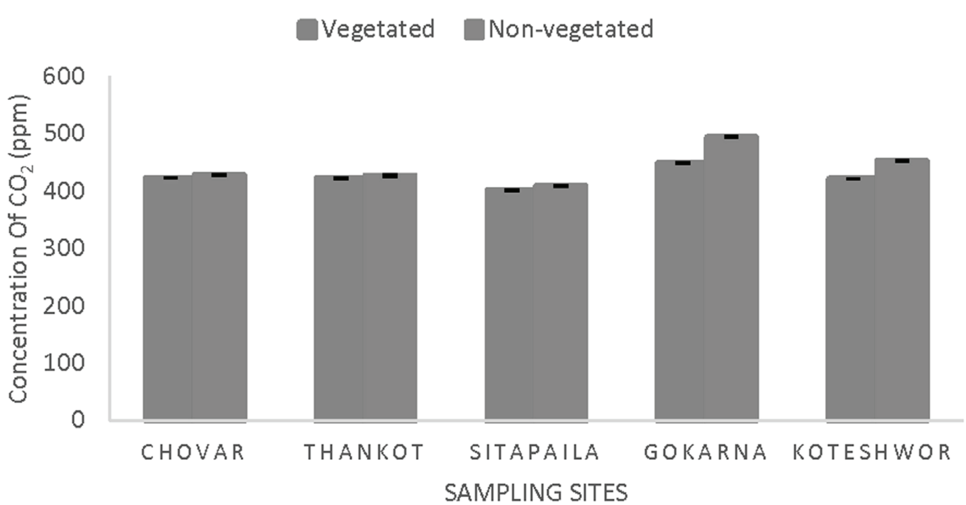


Figure 5: Mean concentration of CO_2 in vegetated and non-vegetated area

Thus, observing the graph Koteshwor, being core area of Kathmandu was found to be more polluted followed by Gokarna and Thankot. It might be due to the flow of heavy traffic in Koteshwor roadside and sampling at traffic rush hour also enhances the highest concentration of pollutants in this area. Gokarna, not being core area was also found to be polluted, which might be due to construction and demolition of road. It is more common for Thankot to become polluted, being boarder/ exit from Kathmandu Valley and large traffic movement. The area nearby Sitapaila and Chovar was found to be less polluted, due to less traffic movement and these areas being far from core area. The reduction of particulate pollution is also caused by availability of large green coverage/vegetation along roadside in these areas. t-test was performed with a view to find out significant in mean values between vegetated and non-vegetated areas, where test of each parameter was done. The p-value for $PM_{2.5}$ was found to be 0.02155 i.e., < 0.05 and the acceptance of null hypothesis suggests that the mean $PM_{2.5}$ in vegetated areas is significantly lower than in non-vegetated areas. Similarly, the PM_{10} in vegetated areas is significantly lower than in non-vegetated areas as suggested by p-value <0.05 i.e., 0.021. However, there is no any significant difference in mean AQI levels between vegetated and non-vegetated areas which is shown by p-value i.e., 0.2805 (>0.05). Also, the p-value for CO_2 was found to be 0.489 i.e., >0.05 and thus suggests that there is no significant difference in mean CO_2 levels between vegetated and non-vegetated areas.

Table 2: Air quality assessment of vegetated and non-vegetated area of urban roadside of spring season

Sampling sites	**Mean at vegetated areas ± SE**				**Mean at non-vegetated areas ± SE**			
	$PM_{2.5}$	**AQI**	**PM_{10}**	**CO_2**	**$PM_{2.5}$**	**AQI**	**PM_{10}**	**CO_2**
Chovar	77.128±4.83	146.683±3.67	101.69±3.90	507.445±5.70	123.064±5.12	185.59±2.74	214.265±5.11	523.383±2.34
Thankot	74.821±1.34	158.515±0.90	92.962±1.08	578.99±1.86	104.774±2.71	176.396±1.40	128.259±3.68	498.908±5.24
Sitapaila	68.775±0.88	157.75±0.48	82.022±1.67	454.575±0.46	90.024±2.72	168.783±1.41	127.669±4.88	463.867±1.08
Koteshwor	99.02±2.12	169.98±1.89	102.05±3.24	469.23±1.23	113.316±4.06	180.16±2.28	174.933±5.12	595.933±0.37
Gokarna	55.677±0.186	148.078±0.268	56.677±0.208	443.037±1.747	85.685±0.916	166.579±0.471	94.8±1.292	493.706±2.19

Among the five sampling sites, the mean concentration of $PM_{2.5}$ in spring of vegetated site of Koteshwor was found to be highest than that of other sites, i.e., 99.02±2.12 $\mu g/m^3$ and non-vegetated site was found to be 113.32±4.06$\mu g/m^3$, while the lowest mean concentration of $PM_{2.5}$ of vegetated site found to be of Sitapaila was 68.78±0.88 $\mu g/m^3$ and non-vegetated site was found to be 90.02±2.72 $\mu g/m^3$ (Figure 6).

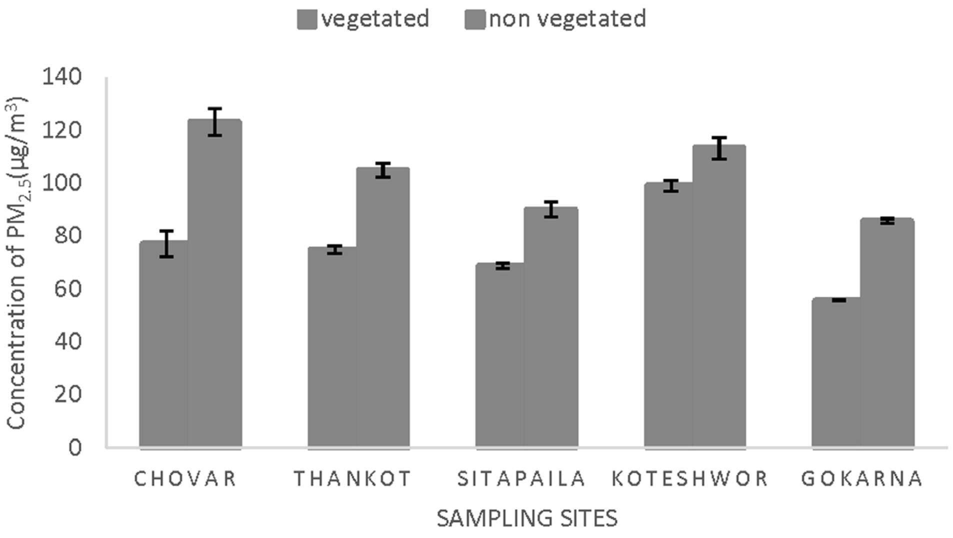
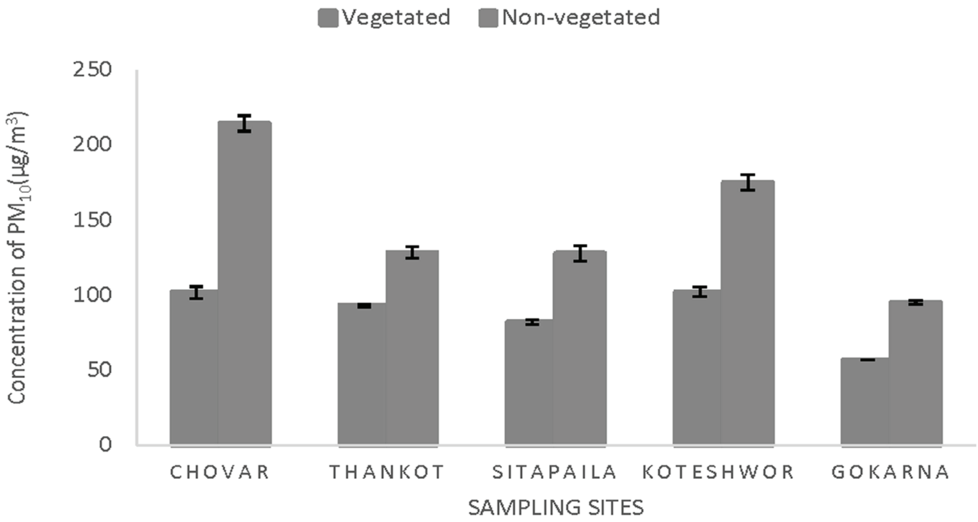


Figure 6: Concentration of $PM_{2.5}$ in vegetated and non-vegetated area

Similarly, the mean concentration of PM_{10} of vegetated site of Koteshwor was found to be highest among others, i.e., 101.69±3.24 µg/m^3 but the highest concentration of non-vegetated site was found to be of Chovar, i.e., 214.27±3.11 µg/m^3, while the lowest mean concentration of PM_{10} of vegetated site found to be of Sitapaila was 56.68±1.67 µg/m^3 and non-vegetated site was found to be 94.80±4.88 µg/m^3 (Figure 7).

Figure 7: Concentration of PM_{10} in vegetated and non-vegetated area



The mean value of AQI of vegetated site of Koteshwor was found to be highest among others, i.e., 169.98±2.89 and that of highest mean of non-vegetated site was found to be 185.59±2.74 of Chovar, while the lowest mean value of AQI of vegetated site was found to be of Chovar, i.e., 146.68±3.67 and non-vegetated site was found to be 166.58±0.47 of Gokarna (Figure 8).

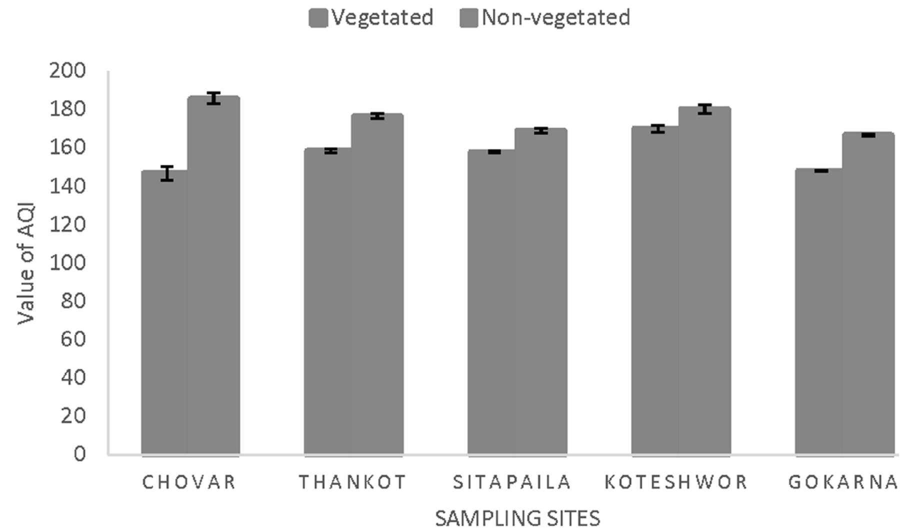


Figure 8: Value of AQI in vegetated and non-vegetated area

But, the mean concentration of CO_2 of vegetated site of Thankot was found to be highest among others, i.e., 578.99±1.86 ppm and that of non-vegetated site was found to be 595.93±0.37 ppm of Koteshwor, while the lowest mean concentration of CO_2 of vegetated site was found to be of Gokarna, i.e., 443.04±1.75 ppm and non-vegetated site was found to be 463.87±1.08 ppm of Sitapaila (Figure 9).

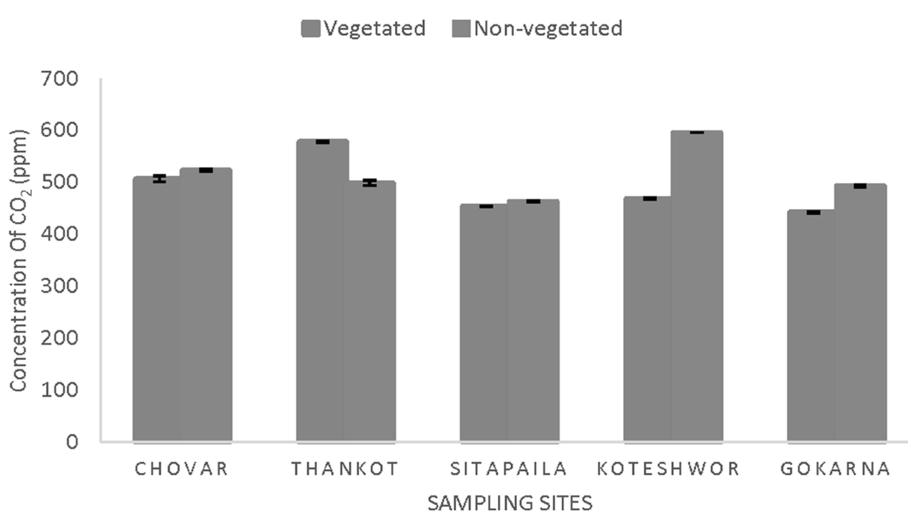


Figure 9: Mean concentration of CO_2 in vegetated and non-vegetated area

Thus, observing the graph Koteshwor, being core area of Kathmandu was found to be more polluted followed by Gokarna and Thankot. It might be due to the flow of heavy traffic in Koteshwor roadside and sampling at traffic rush hour also enhances the highest concentration of pollutants in this area. Gokarna, not being core area was also found to be polluted, which might be due to construction and demolition of road. It is more common for Thankot to become polluted, being boarder/ exit from Kathmandu valley and large traffic movement. The area nearby Sitapaila and Chovar was found to be less polluted, due to less traffic movement and these areas being a bit far from core area. The reduction of particulate pollution is also caused by availability of large green coverage/ vegetation along roadside in these areas.

With a view to find out significance in mean values between vegetated and non-vegetated areas, the p-value for $PM_{2.5}$ was obtained to be 0.02155 i.e., < 0.05 and the rejection of null hypothesis suggests that the mean $PM_{2.5}$ in vegetated areas is significantly lower than in non-vegetated areas. Similarly, the PM_{10} in vegetated areas is significantly lower than in non-vegetated areas as suggested by p-value <0.05 i.e., 0.021. However, there is no any significant difference in mean AQI levels between vegetated and non-vegetated areas which is shown by p-value i.e., 0.2805 (>0.05). Also, the p-value for CO_2 was found to be 0.489 i.e.,>0.05 and thus suggests that there is no significant difference in mean CO_2 levels between vegetated and non-vegetated areas. Thus, there is a significant difference in mean $PM_{2.5}$ and PM_{10} levels whereas no significant difference in mean AQI and CO_2 levels between vegetated and non-vegetated areas.

The results showed that the urban green coverage rate had significant effect on concentration of $PM_{2.5}$ and PM_{10} in both seasons. The non-vegetated roadside showed concentration of Particulate matter, within the permissible limit as per the prescribed guidelines of NAAQS (150 $\mu g/m^3$ for PM_{10} and 35 $\mu g/m^3$ for $PM_{2.5}$), WHO (50 $\mu g/m^3$ for PM_{10} and 25$\mu g/m^3$ for $PM_{2.5}$) and USEPA (1997), i.e., 150 $\mu g/m^3$ for PM_{10} and 65 $\mu g/m^3$ for $PM_{2.5}$, while the vegetated area acts as a sink for less concentration of pollutants. The green areas/vegetated sites of roadside with highest green coverage rate had the best effect on the reduction of airborne particulate matter than that of non-vegetated roadside, which is also consistent with findings by Qiu et al. (2019). Moreover, the vegetation structure and roadside area along with high green coverage in the background environment was dominant on less particulate matter concentration (Yi et al., 2017). The type and strength of airborne particle concentration is affected as the green coverage rate/ roadside vegetation decreased i.e., the impact of green area characteristics weakened in the urban roadside, with decreasing green vegetation. It is due to the large disturbance such as the most vehicle emission in urban road, industrial emissions or fumes produced by burning plastics, paper or waste nearby roadside. The use of vegetation removal mechanism and increasing green coverage rate for the reduction of pollution of urban air particles could be more efficient, on the basis of result obtained. It can be mostly applicable where completely reliance on the control of pollution source is not possible and to reduce the generation of airborne particulate matter directly from the source (Song et al., 2013). The soil dust or fine particulate matters on the roadside were carried away by wind and influenced by plants, mostly by blocking and absorbing the pollutants, as the presence of vegetation has an important role in decreasing air pollution.

According to the study by Diener & Mudu, (2021), the vegetation helps in reducing pollutants by three distinguished mechanisms: deposition, dispersion and modification of PM. Deposition referring as a temporary or permanent residence of PM on the surface of a plant, either by adsorption or by gravitative settling. Dispersion mechanism focuses mainly how plants change the trajectory and velocity of PM through its physical structure and thirdly a less commonly reviewed group of mechanisms are those altering the inherent properties of PM, like its size. The modification of PM can be viewed from two perspectives: (i) the alterations may accelerate deposition (and subsequently, at least partially, removal) of particles, i.e., larger and heavier particles or an altered solubility or loading, (ii) changed compositions or other plant-associated effects may reduce the toxicity and concentration of particles (Diener & Mudu, 2021). Green plants may also absorb PM through their stomata or cell membranes of its elements, particularly their leaves and deposited PM may undergo resuspension into the air, typically influenced by wind, and removal by wash-off from leaves for instance, during defoliation. As shown in study by Petroff, (2008), the particles settle on leaf area by the mechanisms like: sedimentation under gravity, interception, inertial impaction, Brownian diffusion and turbulent impaction. And the particulate matters thus settled on leaves may follow two alternative pathways: either they will be absorbed by leaf stomata and will enter into trees metabolism, or they will accumulate on the leaf surface more frequently until taken to the ground by precipitation or re-suspended by the wind. However, concerning the smaller particles mainly, the absorption is much lower than accumulation (Beckett, 1998).

Green coverage can also favorably or adversely affect ventilation as a critical factor for air quality in urban areas, such as: a deciduous hedge may block pollutants flow from entering a garden in summer and from being diluted by wind in winter (Diener & Mudu, 2021). Thus, the vegetation's leaves are found to be the most instrumental part of the plants for air pollution reductions. In the study by Warren (1973), it has been shown that if a particular vegetation planting does not effectively influence the air pollution in the area, the green space is not lost but can be utilized for many other socially beneficial uses, such as recreation, watershed protection, commercial forestry, urban wildlife, aesthetic enhancement. Overall, the effect of green spaces on our ambient air is associated with the pollution concentrations, sources and setup, some with the green spaces, and a number with local meteorological and land use variables besides time and scale. One critical indicator for the short-term health risk of air pollution may be peak PM concentrations, as several studies suggest that PM deposition increases with its ambient concentration.

Furthermore, the variation of plant species also has different effect on absorption of pollutants and reduction of pollution. For instance, the concentration of $PM_{2.5}$ and PM_{10} were lowest in the partly closed green area of one-layered coniferous trees and the closed green area of one-layered mixed trees (Qiu et al., 2019). Thus, in the present study too, the vegetation coverage of Chovar area with mostly pine forest and Thankot with mixed-tree types has lowest concentration of particulate matter. In addition, a small area of green space could adsorb small particles to a certain extent, but it was powerless for large particles because larger the particle sizes, the worse the absorption of the vegetation (Cai et al., 2017). Generally, the green areas in urban spaces with different green coverage rates have different reduction effects on the concentration of airborne particles, which provides a theoretical basis and reference for the optimization of green area structures and to improve air quality effectively in the future.

Conclusion

The comparative study of concentration of particulate matter of different vegetated and non-vegetated roadside was performed in two different seasons. The $PM_{2.5}$ concentration of non-vegetated roadside surpassed the prescribed NAAQS, WHO and USEPA (1997) guideline, whereas the $PM_{2.5}$ concentration of vegetated area of urban roadside was found to be within the range of the guidelines. Similarly, AQI value and PM_{10} concentration also decreased on moving from non-vegetated to vegetated roadside area. The study determined that as the green coverage decreased, the impact characteristics of green areas weakened to no influence. Roadside plantation in either side of road should be emphasized and green cover along roadside of urban areas should be increased, as vegetation has major role in reducing pollution. Increasing green spaces around city can reduce movement of suspended particulate matter. Since, particulate pollutants are directly related to human health, affecting health and creating various socio-environmental problems, the pollutants must be reduced or minimized. The government, public and concerned authorities should work closely to foster the green areas in the urban centers of Nepal.

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