(54) Title: LANGUAGE LEARNING SYSTEM AND METHODS
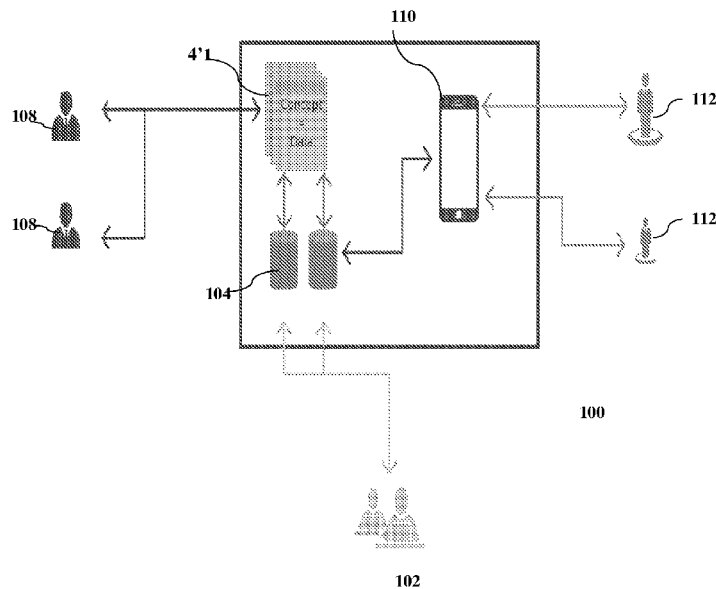
FIG. 1

(57) Abstract: The present invention is a language learning system which includes multiple learning templates having one or more grammatical rules. The templates are designed in a way that these can be modified by content experts to overlay the content experts' data. Further, the present invention provides a user interface which is configured to work in association with the non-transitory storage medium and the processor for creating third party learning apps for end users.

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report (Art. 21(3))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

LANGUAGE LEARNING SYSTEM AND METHODS

FIELD OF INVENTION

[0001] The present disclosure relates to modular learning system, more particularly the present invention is related to systems and methods for learning languages in a cultural adaptive language learning system.

BACKGROUND OF THE INVENTION

[0002] In recent time, e-learning or electronic-learning has become a new mean for learning different skills and languages. In e-learning, electronic media devices such as computers, mobile phone, smart learning devices, are used to instruct and train individuals or groups using activities, processes, communities, and events.

[0003] In existing prior art, content for learning may be pre-recorded on different storage mediums for example: CD-ROM, DVD, video tapes, mobile or computer memory, servers, cloud servers or any other digital recording medium. In addition, the educational content may be delivered over wired or wireless networks such as the Internet or intranets to individuals or groups via stationary or mobile electronic devices.

[0004] Despite of the considerable advancement made in learning systems and methods, there is a need of improvement as there are no language learning systems which support third party rich content acquisition that can be used by potential linguistic application owners to create their own customized mobile/web

applications and systems for language learning with ease of picking their preferred content and topics.

[0005] Further, there is no prior art that discloses a potent linguistic framework that can capture the grammatical rules of different languages, in generalized templates as possible, which can be fed with data chosen from data pools created by linguistic experts.

[0006] Further, the existing language learning systems are monolithic and provide generalized content. Also, there are no standard linguistic learning data provider services (Language Learning as a Service) which allows selective content pull needed for third party apps/systems.

SUMMARY

[0007] Embodiments of the present invention provide a language learning system. The language learning system includes a non-transitory storage medium and a processor wherein the processor executes instructions stored in non-transitory storage medium. The language learning system further includes a plurality of learning templates comprising grammatical rules of one or more languages wherein the plurality of learning templates are modified by content experts and to overlay the content experts' data.

[0008] In an aspect of the present invention, the language learning system further includes a user interface configured to work in association with the non-transitory storage medium and the processor for creating third party learning apps for end users.

[0009] In another aspect of the present invention, the language learning system ensures proper involvement and participation from richly experienced manual expertise in linguistics instead of depending on too much of artificial intelligence and voice recognitions, particularly unfit for human and culture oriented language learning. At the same time, the language learning system enables easy pick and choose options for capable entrepreneurs for building their own apps that can be marketed and monetized in their capacities too.

OBJECTS OF THE INVENTION

[0010] It is an object of the present invention to provide an integrated language learning system which facilitates content overlaying and selective content selection for dynamic app building.

[0011] It is another object of the present invention to provide a language learning system which allow users/content expert to create or modify learning templates.

[0012] It is a further object of the present invention to provide a robust language learning system which can analyze the use of language elements individual or with other language elements.

[0013] This invention is pointed out particularly with the appended claims. Additional features and the advantages of the present invention, a language learning system, will become apparent to those skilled in the art by referring to the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0014] FIG. 1 illustrates a block representation of a language learning system (100) in accordance with an embodiment of the present embodiment;

[0015] FIG. 2 illustrates a block representation of authorized/authenticated third party customer data fetch pipelines for third party language learning apps creation in the language learning system (100) in accordance with an embodiment of the present embodiment;

[0016] FIG. 3 illustrates a block representation of the content creation by experts in the language learning system (100) in accordance with an embodiment of the present embodiment;

[0017] FIG. 4 illustrates a block representation of the owner's app building process in the language learning system (100) in accordance with an embodiment of the present embodiment, and

[0018] FIG. 5 illustrates a language learning system pyramid – stake holders placed one above the other with convention of placing the consumers of data one below the producers in the pyramid of the language learning system (100) in accordance with an embodiment of the present embodiment.

DETAILED DESCRIPTION OF EMBODIMENTS

[0019] As used herein, the term 'processor' refers any conventional or novel general purpose single or multi-chip processor or microprocessor or microcontroller that can execute information stored in data storage medium or

memory, such as the computer readable storage medium, and/or the processor can access information wirelessly from an Internet server or remote data storage.

[0020] Further, throughout this specification the word "comprise", or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated element, integer or step, or group of elements, integers or steps, but not the exclusion of any other element, integer or step, or group of elements, integers or steps.

[0021] The use of the expression "at least" or "at least one" suggests the use of one or more elements or ingredients or quantities, as the use may be in the embodiment of the disclosure to achieve one or more of the desired objects or results. Referring to FIG. 1, embodiments of the present invention provides a language learning system (100). The stake holders in the present invention are content experts (108), app owners (102), third party users (112) such as teachers and students. Content experts create their versions of content (audio, script, scenario based information and patterns worth studying/noting) and overlays on top of the templates and saves it as their repository (104) in the background. App owners (102) can make use of content from different content experts (108) based on app owner preference/content ratings etc.

[0022] In an embodiment, the third party users (112) such as teachers and students can access the language learning system (100) though an app (110) such as mobile app/desktop app. Further, the third party users (112) can subscribe to the app (110) mentioning their roles. The student can use free features of the app (110).The student can also get manual teacher support by connecting/linking with

the teacher through the app (110). The teacher can provide offline/online support as desired by the student/possible for teacher.

[0023] In the embodiment, the language learning system (100) includes learning templates (106) stored in the corresponding to different language elements such as nouns, verbs, adjectives, articles, sentences etc., defined and kept as part of the language learning system backend.

[0024] An embodiment of the present invention allows the content creators to use the learning templates (106) as mentioned above and to overlay their language data over the existing learning templates (106) to generate their non-transitory storage medium (104, 104', 104'') in the language learning system (100). In an embodiment of present invention, the plurality of learning templates (106) is stored in the non-transitory storage medium (104, 104', 104''). The plurality of learning templates (106) includes one or more grammatical rules which are configured to be modified by content experts (108) and to overlay the content experts' data.

[0025] The one or more grammatical rules of the language include, referred but not limited to rules of nouns, counting nouns, gender of nouns, root form of verbs, verb tense - simple past, present and future, verb tense - special cases including present perfect continuous equivalents, adjectives, adverbs, articles, measurements (length, volume, mass, time), prepositions, conjunctions, emotional expressions, sentences with states, sentences with actions and sentences in question form.

[0026] In an embodiment of the present invention, these learning templates (106) are designed based on consideration that the general characteristics of each

element is analyzed, when these elements are used individually, with one or more elements and/or in sentence or any other possible linguistic combination in the language for which these learning templates (106) are written.

[0027] In another embodiment of the present invention, the multiple content creators (108) may generate data for same concepts in same language. This feature facilitated by the language learning system (100) allows maximum flexibility of choice to the app user. In the embodiment, the app users (102) can register and login in the language learning system (100) to build a language as its destination language and may choose one or more home languages (as defined by the business rules). The language learning system (100) further enables user to pick up the relevant topics, sub topics, topic units and to attach the preferred content as available from the multiple content experts' entries.

[0028] In an embodiment of the present invention, the language learning can be made between a host language and one or more destination languages or in a single language wherein the language itself works as a medium. The language is taught as a series of different 'topics' - nouns, adjectives, verb root forms, verb tenses etc. Each 'topic' items are covered using subtopics and each subtopic will contain one or more topic units. The term "topic" and "topic units" are described in detail in further embodiments of the present invention.

[0029] Referring to FIG. 2, in an embodiment of the present invention, the app user/content creator (102) is allowed to generate own language learning apps/applications (202). The generated language learning apps (202) maybe further used by third party user (112) such as teachers and students. The students

may do free learning and practice, but to get the essence of human teacher support for right pronunciation, correct writing and speaking skills, students need to get connected to teachers registered with the system under the required language.

[0030] The core of the invention is the definition of language learning templates (106) for all the key concepts and the engine to overlay the content experts' data onto it, which creates meaningful learning apps for end users and teachers (112).

[0031] Referring to FIG. 3, an embodiment of the present invention facilitates content creation by content experts (102) and overlaying their data (302) on the language templates (106) stored in non-transitory storage medium (104) whose basic behavior and language specific behavior may be represented by easy to understand user interface. The data (302) is described as a topic unit which includes the structural transformations (306), prefixes (308), suffixes (310) and other vocal/textual dependencies (312) for various scenarios/usages/language construct (304).

[0032] In a further embodiment of the present invention, the language learning system (100) represented in FIG. 4 includes a plurality of non-transitory storage medium (104, 104', 104''). Each non-transitory storage medium (104, 104', 104'') includes plurality of topics (Topic 1, Topic 2…. Topic n). These topics can be accessed from different app versions (110, 110') such as mobile app and desktop app etc.

[0033] In an exemplary embodiment of the present invention, each language 'topic' will have configuration files (templates) which may follow the hierarchical order:

TOPIC: id = X

SUBTOPIC: id = Y, ...

TOPIC UNIT: id = Z, voice = URL, script = URL,...

....

SUBTOPIC: id = A, ...

TOPIC UNIT: id = b, voice = URL, script = URL,...

TOPIC: id = L

SUBTOPIC: id = C, ...

[0034] Each 'topic unit' has a language specific representation such as voice, script and references to scenario dependent other similar occurrences (for e.g. Father in one language can sound different for referring to own father, while addressing own father, while referring to some other's father) in the language.

TOPIC: id = X

SUBTOPIC: id = Y, ...

TOPIC UNIT: id = Z, voice = URL, script = URL, SCENARIOS:

{1 : id = aa, voice = URL, script = URL

2: id = bb, voice = URL, script = URL,

3: id = cc, voice = URL, script = URL}

....

SUBTOPIC: id = A, ...

TOPIC UNIT: id = b, voice = URL, script = URL,...

5   TOPIC: id = L

SUBTOPIC: id = C, ...

[0035] In another exemplary embodiment of the present invention, if the language

learning system (100) configured to perform one to one learning in the process of

generating the learning experience of one 'topic unit X', the language learning

10   system (100) fetches the representation of 'X' in host and destination languages

and renders the information using a 'template parser module'. In other words, the

'template parser module' plays the representations (voice1, script1, scenario1) and

(voice2, script2, scenario2). The first set corresponds to the representation of 'X'

in host and second set corresponds to the representation of 'X' in destination

15   language, respectively. Further, let's say a 'topic unit' which studies the

union/combination of two smallest meaningful and independent entities in the

language denoted as WORD1 and WORD2. The combination can be

mathematically modeled as a FUNCTION of one or more of the following:

a.   WORD1/WORD1-TRANSFORMATION   and   WORD2/WORD2-

20   TRANSFORMATION.   WORD1-TRANSFORMATION   and   WORD2-

TRANSFORMATION indicate the defined transformation on WORD1 and WORD2 respectively, when they are used together.

b. Prefixes and suffixes to one or more of WORD1 and WORD2, carrying a regular pattern / case to case pattern. WORD1 prefix and suffix are denoted by WORD1-PREFIX and WORD1-SUFFIX respectively. WORD2 prefix and suffix are denoted by WORD2-PREFIX and WORD2-SUFFIX respectively.

c. Skewed transformation which is not directly visible as a WORD1-TRANSFORMATION or WORD2-TRANSFORMATION, but as a combination of both.

[0036] In the list given,

> WORD1-PREFIX
>
> WORD1-TRANSFORMATION
>
> WORD1-SUFFIX
>
> WORD2-PREFIX
>
> WORD2-TRANSFORMATION
>
> WORD2-SUFFIX

[0037] One or more among the above can be void; sometimes the transformation can be same as word itself. Sometimes the words or the transformations may get reversed in order. The prefixes/ suffixes/transformations can follow a same pattern - in voice and in script and sometime in both. Such similar looking 'topic units' may be classified and represented together / as a group for better learning experience. All of the above topics have their own template representations for

their word order, representation before their combination, representation after their combination and ways to segregate in the end user applications based on identical script / voice tags.

[0038] Further, the same mathematical modeling will be applied for structures such as prepositions, word conjunctions, adjectives and adverbs. For sentences and clauses, the modeling will take consideration of the addition of subject, verb, verb tense, object ordering and inclusion of auxiliary verb.

[0039] In an embodiment of the present invention, the main advantage of language learning system (100) is considered by:

a. providing definitions of rules based learning templates (106) for one or more grammatical rules and structures prevalent in the different constructs of one or more languages.

b. usage of well-defined user interfaces by content creators such as linguistic experts and app users to define/overlay the language data first hand/on top of the default templates(106) available to them after signing up into the language learning system(100).

c. providing definitions of parsers which can be integrated as a library, plug-in or source code extension in mobile or web applications which can run through single dimensional (by having one language), two dimensional (having one to one between one host language and one destination language) and multi-dimensional (one to 'n' between one host language and 'n' destination languages) learning templates (106) to generate appropriate end user representations in the

application using the target device's (phone, tablet, computer etc.) audio and display interfaces (speaker and screen).

        d. providing definition of linguistic data overlay APIs or user interfaces for third party subscribers to feed a new language 'topic' data into a default language
5   learning template meant for a single language study or a combination of one or more templates logically linked together for one to 'n' language study.

[0040] Referring to FIG. 5, the system pyramid of stake holders placed one above the other with convention of placing the consumers of data one below the producers in the pyramid. For example, the language learning system (100) is
10   consumed by the content experts (108) to overlay their linguistic data onto the learning templates (106) which are part of the language learning system (100). App owners (102) will use the data produced by content experts (108) to build/customize their apps and so on. The teachers (508) and other end users (510) may consume the apps generated by app owners (102) for learning and teaching
15   (offline assistance) purposes.

[0041] The embodiments herein and the various features and advantageous details thereof are explained with reference to the non-limiting embodiments in the following description. Descriptions of well-known components and processing techniques are omitted so as to not unnecessarily obscure the embodiments herein.
20   The examples used herein are intended merely to facilitate an understanding of ways in which the embodiments herein may be practiced and to further enable those of skill in the art to practice the embodiments herein. Accordingly, the

examples should not be construed as limiting the scope of the embodiments herein.

[0042] The foregoing description of the specific embodiments so fully revealed the general nature of the embodiments herein that others can, by applying current knowledge, readily modify and/or adapt for various applications such specific embodiments without departing from the generic concept, and, therefore, such adaptations and modifications should and are intended to be comprehended within the meaning and range of equivalents of the disclosed embodiments. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation. Therefore, while the embodiments herein have been described in terms of preferred embodiments, those skilled in the art will recognize that the embodiments herein can be practiced with modification within the spirit and scope of the embodiments as described herein.

[0043] The numerical values mentioned for the various physical parameters, dimensions or quantities are only approximations and it is envisaged that the values higher/lower than the numerical values assigned to the parameters, dimensions or quantities fall within the scope of the disclosure, unless there is a statement in the specification specific to the contrary.

[0044] While considerable emphasis has been placed herein on the components and component parts of the preferred embodiments, it will be appreciated that many embodiments can be made and that many changes can be made in the preferred embodiments without departing from the principles of the disclosure. These and other changes in the preferred embodiment as well as other

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embodiments of the disclosure will be apparent to those skilled in the art from the disclosure herein, whereby it is to be distinctly understood that the foregoing descriptive matter is to be interpreted merely as illustrative of the disclosure and not as a limitation.

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CLAIMS

I Claim,

1. A language learning system (100) comprising:

a non-transitory storage medium (104) and a processor wherein the processor executes instructions stored in the non-transitory storage medium (104);

a plurality of learning templates (106) stored in the non-transitory storage medium (104) wherein the plurality of language learning templates (106) comprises one or more grammatical rules which are configured to be modified by content experts (108) and to overlay the content experts' data, and

a user interface configured which is adapted to work in association with the non-transitory storage medium(104)and the processor for creating third party learning apps for end users (112).

2. The language learning system (100) as claimed in claim 1, wherein the language learning templates (106) includes one or more language elements such as nouns, verbs, adjectives, articles and sentences.

3. The language learning system (100) as claimed in claim 2, wherein in the one or more language elements, each element is analyzed individually, with one or more elements and/or in sentence and/or linguistic combination in the language for which these language learning templates (106) are written.

4. The language learning system (100) as claimed in claim 1, wherein the user interface is adapted facilitates content creation by content experts (102) and

overlaying their data (302) on the language learning templates (106) stored in the non-transitory storage medium.

5. The language learning system (100) as claimed in claim 4, wherein the data (302) is described as a topic unit which includes the structural transformations (306), prefixes (308), suffixes (310) and other vocal/textual dependencies (312) for various scenarios/usages/language construct (304).

6. The language learning system (100) comprising:

a plurality of non-transitory storage medium (104, 104', 104'') and a processor to execute instructions stored in the non-transitory storage medium(104, 104', 104'') wherein the plurality of non-transitory storage medium (104, 104', 104'') includes a plurality of topics (Topic 1, Topic 2…. Topic n), and

a user interface configured which is adapted to work in association with the non-transitory storage medium (104)and been facilitate by mean of third party learning apps for end users (112).

7. The language learning system (100) as claimed in claim 6, wherein the plurality of topics (Topic 1, Topic 2….Topic n) are accessed from the one or more third party learning apps versions (110, 110').

8. The language learning system (100) as claimed in claim 6, wherein from the plurality of topics (Topic 1, Topic 2…. Topic n), each topic has a language specific representation such as voice, script and references to scenario dependent other similar occurrences in the language.

9. The language learning system (100) as claimed in claim 6, wherein each of the plurality of topics (Topic 1, Topic 2…. Topic n) has one or more configuration files (templates) which follows a hierarchical order.

10. The language learning system (100) as claimed in claim 6 is adapted for facilitating one or all of the following:

providing definitions of rules based language learning templates (106)for one or more grammatical rules and structures prevalent in the different constructs of one or more languages;

providing well-defined user interfaces to content creators to define/overlay the language data on default templates(106) available to them after signing up into a user interface by a third party app;

providing definitions of parsers for integrating as a library, plug-in or source code extension in mobile or web applications to run through single dimensional, two dimensional and multi-dimensional learning templates (106) to generate appropriate end user representations in the application using a target device's audio and display interfaces, and

providing definition of linguistic data overlay APIs or user interfaces for third party subscribers to feed a new language 'topic' data into a default language learning template meant for a single language study or a combination of one or more templates logically linked together for one to 'n' language study.
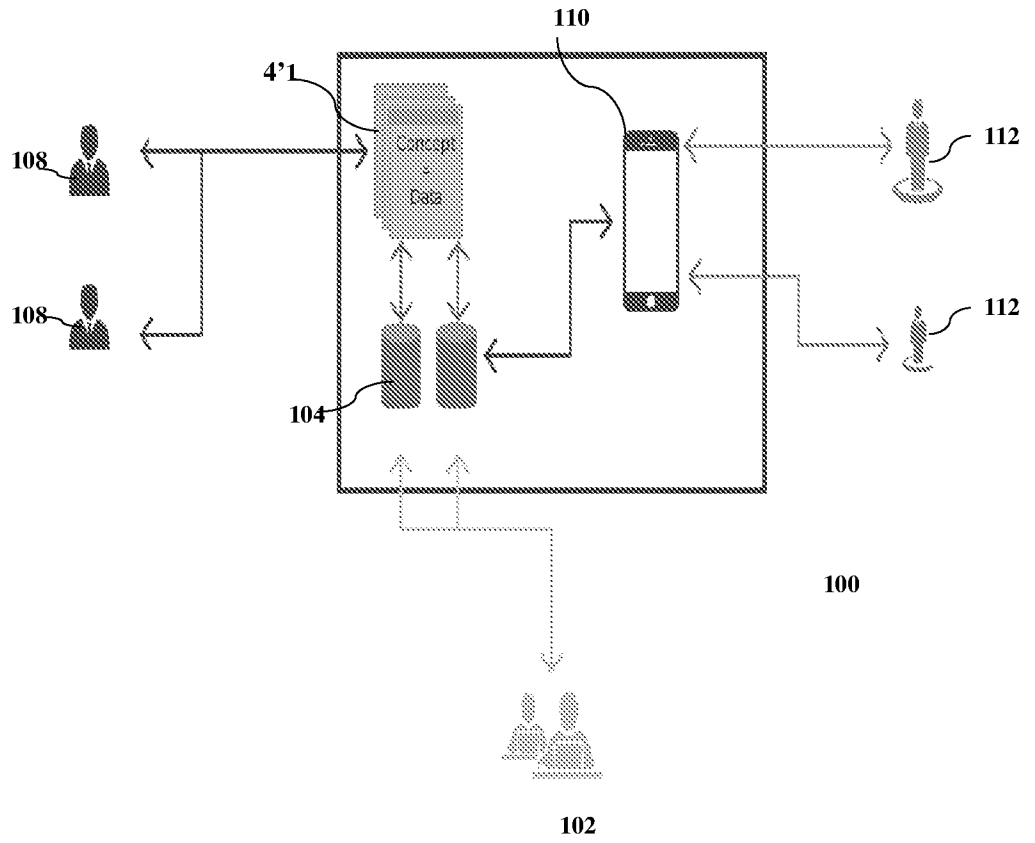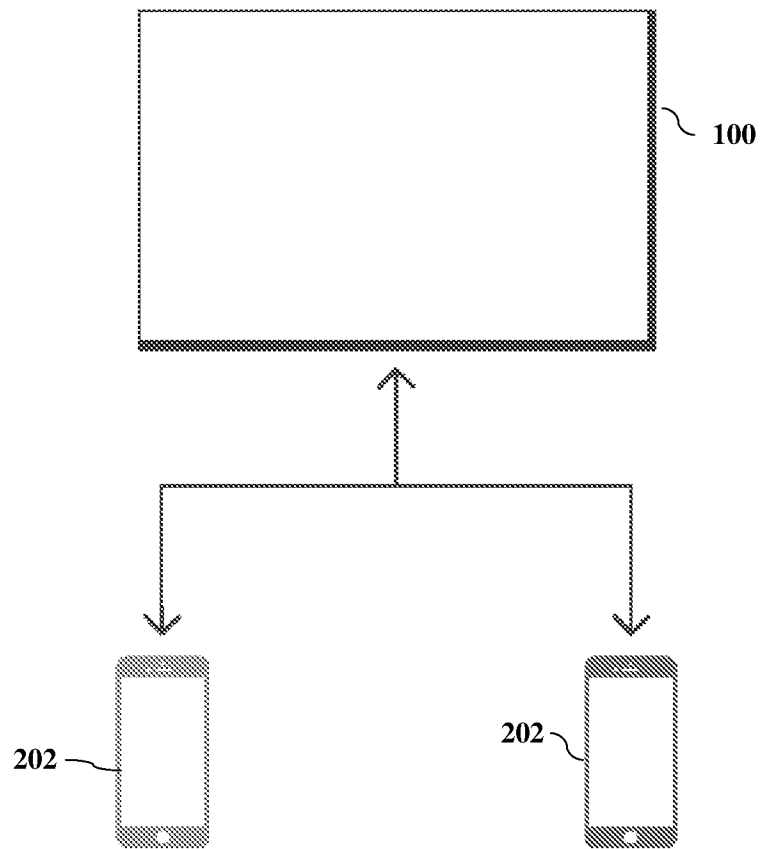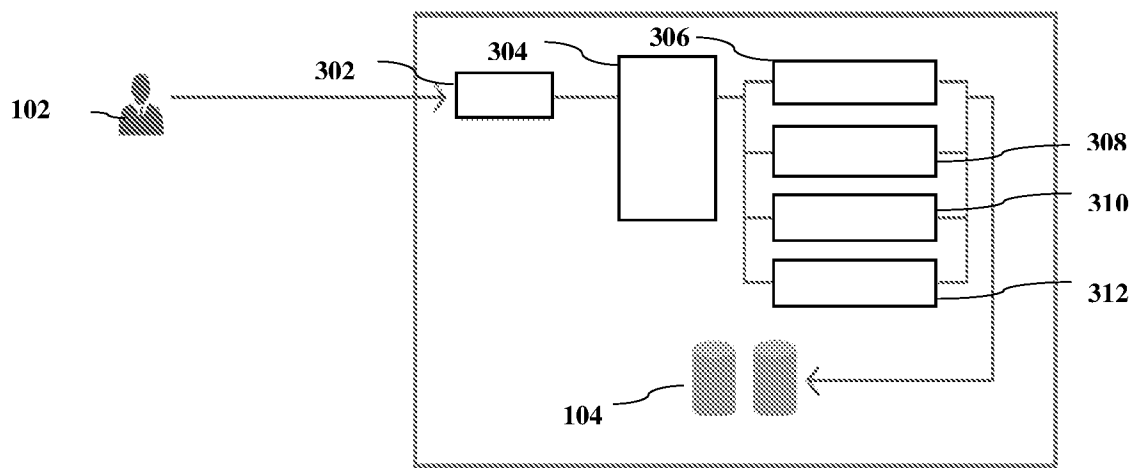
1/5

FIG. 1
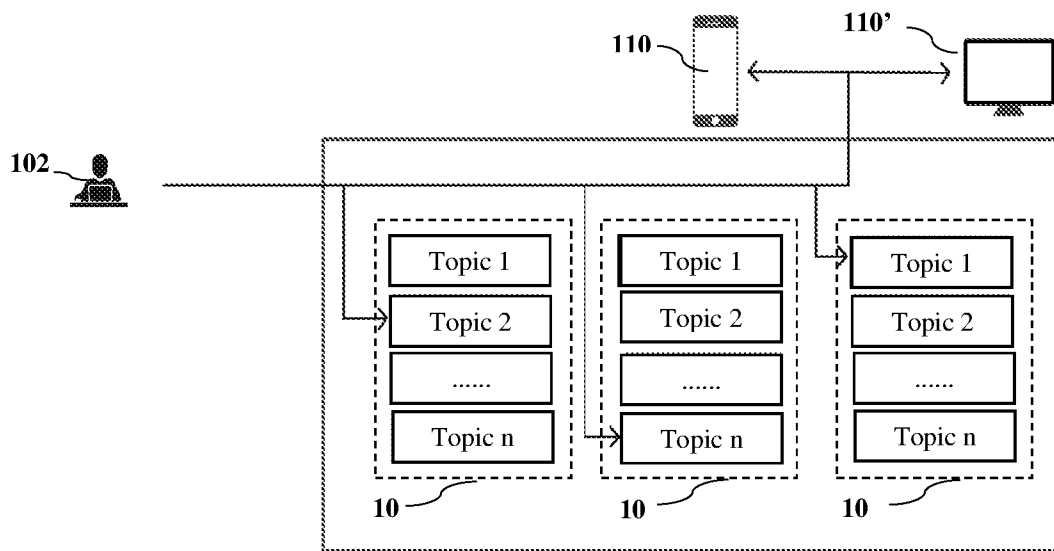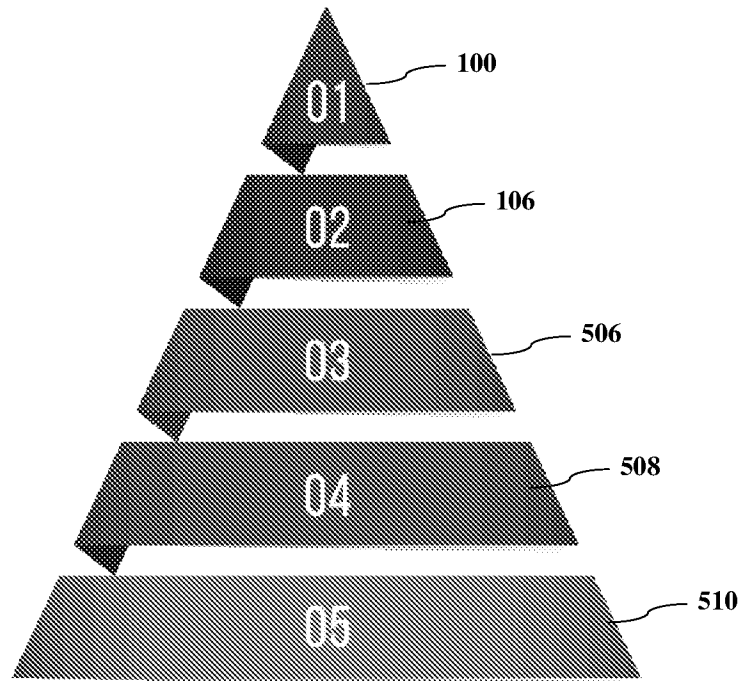
FIG. 2

FIG. 3

FIG. 4

FIG. 5

INTERNATIONAL SEARCH REPORT

A.	CLASSIFICATION OF SUBJECT MATTER

G06F17/20,G09B19/06 Version=2019.01

According to International Patent Classification (IPC) or to both national classification and IPC

B.	FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F, G09B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Databases: IPO Internal, Total Patent One
Keywords: Language learning system, templates, content organization

C.	DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	IN677MUMNP2014A (MONK AKARSHALA DESIGN PRIVATE LIMITED) 03 July 2015 (03-07-2015) Abstract, paragraphs [0001], [0006]-[0008], [0037], pages 30-33, figures 1, 4	1-10

☐ Further documents are listed in the continuation of Box C.   ☒ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance		
"E"	earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11-01-2019	11-01-2019

Name and mailing address of the ISA/	Authorized officer
Indian Patent Office Plot No.32, Sector 14,Dwarka,New Delhi-110075 Facsimile No.	Shri Ram Kaunaujia Telephone No. +91-1125300200

Form PCT/ISA/210 (second sheet) (revised January 2019)

International application No.

PCT/IB2018/058490

Citation	Pub.Date	Family	Pub.Date
IN 677MUMNP2014 A	03-07-2015	WO 2013040103 A1	21-03-2013
		US 20140372897 A1	18-12-2014