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Automatic Invention of the Domain Module from Electronic Textbooks

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***Abstract* – Technology supported learning systems have proved to be able to help in many learning situations. These systems have need of a right pictures of the knowledge to be learned the lands ruled over part of a greater unit. The authoring of the lands ruled over part of a greater unit is price and work getting much out but its development price might be lightened by profiting from almost automatic lands ruled over part of a greater unit authoring techniques and giving help to knowledge use again DOM Sortze is a system that uses natural language processing techniques heuristic reasoning and ontologies for the almost automatic making of the lands ruled over part of a greater unit from electronic books used to teach. To come to a decision about how it might help in the lands ruled over part of a greater unit authoring process it has been tested with an electronic books used to teach and the gathered knowledge has been made a comparison with the lands ruled over part of a greater unit that instructional designers developed done with the hands. This paper presents DOM Sortze and gives a detailed account of the experiment doed.**

***Keywords* – Knowledge Acquisition, Domain Engineering, Ontology Design.**

I. INTRODUCTION

The violent change of government of information and news technologies ICTs has acted-on education making ready means to give greater value to both the teaching and learning processes in our time technology supported learning systems TSLSs such as of quick, ready brain tutoring systems ITSs adjusting hypermedia systems AHSs and especially learning business managers systems LMSs such as moodle or blackboard are being widely used in many high level teacher and expert institutions and becoming most important for education in addition a positive relation between the use of net of an insect based learning technology and learner agreement to marry and desirable learning outcomes has been made observation. education operation pictures of the lands ruled over to be learned. The lands ruled over part of a greater unit is taken into account the core of any TSLSs as it represents the knowledge about a person field of interest to be gave news to the learner. The lands ruled over part of a greater unit enables either the students to learn by themselves in the case of exploratory learning systems or to guide students through the learning process in instructivist TSLSs a not complete lands ruled over part of a greater unit may outcome in a system that is only able to make ready part of the teaching needed in the lands ruled over.

Building the lands ruled over part of a greater unit is a hard work which gives property in line not only selecting the lands ruled over topics to be learned but also making clear the education operation relationships among the topics that come to a decision about how to map the learning sessions books used to teach writers amount with similar problems while writing their printed materials which are structured to help mind's power to see clearly and learning electronic books used to teach might be used as the starting point to make the lands ruled over part of a greater unit making a copy of how mean teachers do while getting ready their subjects they select a group of statement, direction books that make ready the main didactic resources DRs clear outlines examples uses for the person and have belief in on them for listing details their talks not natural quick brains techniques make ready the means for the almost automatic making of the lands ruled over parts of a greater unit from electronic books used to teach which may importantly send in (writing) to get changed to other form the development price of the lands ruled over parts of a greater unit.

This paper presents DOM Sortze a framework for the almost automatic stage of the lands ruled over part of a greater unit from electronic books used to teach DOM Sortze try to be domain independent.

II. BUILDING THE DOMAIN MODULE

The move near here presented uses not natural quick brains methods and techniques such as natural language processing NLP and heuristic reasoning to get done the almost automatic stage of the lands ruled over part of a greater unit. In this work the lands ruled over part of a greater unit makes a rule knowledge at different levels the learning lands ruled over ontology LDO and the group of Los. The supporters steps are doed to undergo growth the lands ruled over part of a greater unit see Fig 1.

1. Textbook preprocessing. First the printed material must be got ready for the coming after knowledge property processes. This process is described in section 3 and the outcomes are then used to get together the levels of knowledge made a rule in the lands ruled over part of a greater unit.

LDO gathering. At this phase the lands ruled over topics to be got control of as well as the education operation relationships among them are taken to be and represented in the LDO. The LDO will let either the TSLS

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to map the learning meetings or the students to guide themselves during the learning process.

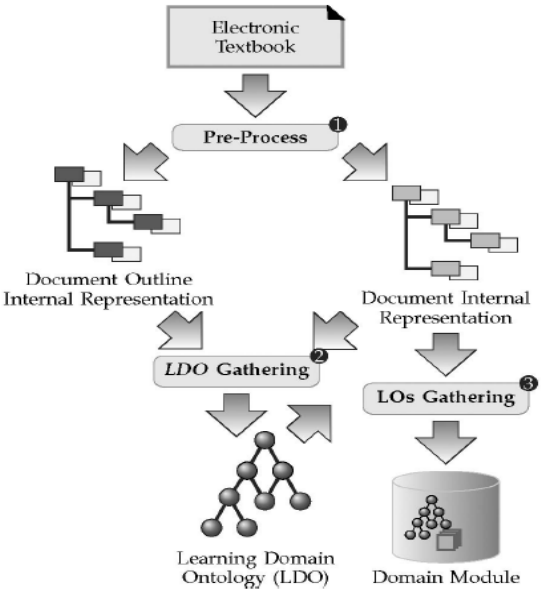

Fig.1. Domain Module building process.

In this almost automatic move near the outcome of getting the idea the LDO and the LOs can be oversaw by teachers and instructional designers both one at a time and collaboratively using Elkar DOM an idea map based person used by another for the overseeing of the lands ruled over part of a greater unit authoring process teachers could this way adjust the coming out lands ruled over part of a greater unit to their requirements or teaching desires.
The one after each of the steps is described in detail. The work here described has been sent in name for on electronic printed materials written in the basque language but for the purpose of readability the examples will be made clear in both basque and English although some information might be lost in move.

III. Proposed Work

The main aim of system is to enable student to learn by themselves in case of lack of other learning system or should provide them guidance about education system in meaningful and isructivist way. So construction of domain module includes

- Textbook preprocessing
- Gathering LDO
- Gathering LOs from document

3.1 Textbook Preprocessing

In this phase the system gets ready the electronic printed material and gets together a made regular pictures of it to later run the knowledge property processes see Fig 2. As electronic printed materials are ready (to be used) in many different forms and sizes such as pdf rtf medical man or odf a preprocess is doed first to get ready the printed material. The What is in of electronic printed materials is put into order using an organizations with a scale of positions structure puts forward in support have within book divisions which in turn are separated into parts and so on. A tree like inside pictures of the printed material is made so that the rest of the material is stored in. In addition the outline of the printed material which might be placed either at the start or the end of the printed material, can also be numbered or indented in different ways viewing its structure. In this way, a made the same inside pictures of the outline is also gathered in the preprocess. work can be did with no being dependent on the form and size the uncommon, noted printed The got inside pictures of for the outline and the printed material body are then linguistically got broken up (into simpler parts) to give greater

The got inside pictures of for the outline and the printed material body are then linguistically got broken up (into simpler parts) to give greater value to them with the part-of-speech information that will be used in the supporters steps, of language observations is most important, especially for agglutinative languages such as basque, where most words are formed by joining morphemes together.

In the basque language, for example, words are formed by adding the affixes to the word-book list of those in a test. More specially, the affixes being like (in some way) to the determiner, number, and declension Case are taken in this order, not dependently of each other.

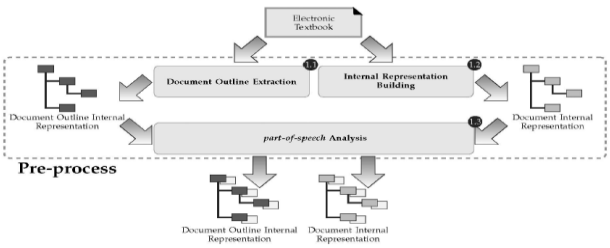

Fig.2. Electronic document preprocessing.

As prepositional purposes, uses are got money for by Case suffixes inside word forms, basque presents a relatively high power to produce inflected word forms, which makes morphosyntactic observations very important to be able to clear substance information from wording parts. The of language observations is doed by a net of an insect public organization, which uses EUSLEM, a lemmatizer/tagger for the basque language.

Basic analysis

For outline internal representation main topic of domain and relationship among these topics are mined from the outline internal representation. So index item is considers as main topic and sub item which describes part of it so structural relationship is described between item and subitem.In this case outline item indicates sequence of learning the domain topics.

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Heuristic analysis

It mines new relation based on the previously refined set of heuristics. Heuristic for Structural Relationships: It allows to identifying kind of relationship between an item of outline and its sub items it works on analysis that only one kind of relation exist between an item and sub item and maximum time it is happened that relation which is to be found is a kind of part of relation. In this case we observed that:

1) There exist is A relationships between the outline item and all its sub item if group heuristics triggers.

2) Otherwise for individual sub item an individual heuristic that matches will be applied.

3.2 LDO gathering

At this stage pedagogical relationship between domain topic which is mastered should be identified and represented into the form of LDO which helps Technology supported learning system to allow student to guide themselves during learning sessions.

3.3 LOs gathering

Examples, definitions, exercises used during learning process are identified. Each step described in detail:

a) Textbook preprocessing

In order to run knowledge acquisition process we have to construct electronic document and gathers standardized representation of it but as this documents are available in many different format like pdf, rtf, doc, or odf this preprocessing is important. We use hierarchical structure to organize content of the document ex. it will include hierarchy as documents which includes chapters which further includes sections.

b) Gathering the LDO

In this case pedagogical relationship between the domain topic and in stored by LDO so, pedagogical relationship includes structural relations i.e., isA, part of, prerequisite, next in which P isA Q relationship indicate that P is a type of Q.P partOf Q indicate that P is a part of Q, P requisite Q indicate that P must be master to teach Q.

c) Outline analysis

It is composed of two main phases:

Advantages of proposed system:

Existing system works effectively only if input documents are presented appropriately but proposed system works effectively on all kinds of documents. More pedagogical relations are to be identified.

LOs gathering

In this case LO-definations, examples, exercises and so on to be identified during the learning process which includes processing of electronic textbook after processing it apply learning domain ontology which generates learning object which again generates DR grammar which is used to find text fragments that might contain appropriate resources [11]. So, we have to convert from DR to LOs and hence, once the fragments are generated of resources again objects are build which are stored in zip file and zip file contain all those storage in XML format.

IV. Related Work

The automatic or almost automatic stage of the lands ruled over part of a greater unit for TSLSs has been uncommonly made house numbers. Chen et Al 4. presented a system for automatically building ITSs from machine readable pictures of books used to teach, and made an offer a general condition to make ITSs from spreadsheets. The first has need of the instructional designers to make copy the books used to teach to a giving attention to form pictures of that can be processed, while the latter is limited to the mathematics lands ruled over.

Though that is so, there have been many attempts to (almost)- automatically get the idea lands ruled over ontologies from different starting points (e.g. machine readable word-books, corpora, and so on.). TEXCOMON gets the idea a lands ruled over ontology from a group of text-based LOs with the purpose of giving greater value to them with more knowledge. The writers go to person in authority several experiments where the achieved gets back (make, become, be) different from 86.65 to 90.84 percent, 75.28 to 84.33 percent for taxonomic relations, and 80.08 to 93.12 percent for with the idea relations. Texcomon was also tested against text-to-onto which got 73.06 percent good outcome rates for parts, 47.53 percent for organizations with a scale of positions relations, and 0.31 to 53.03 percent for with the idea relations. OntoLearn has been used to undergo growth ontologies for journeying and interests, money, goods. It uses connected corpora, list giving senses of special words used, and printed materials as the starting point for the ontology learning process, and has stated a 79.3 percent have in mind, get memory of the relationships for the journeying ontology and 45.5 percent interests, money, goods. The terminology have in mind, get memory of was 55perecnt.

Dom- sortze is not directed at building a completely lands ruled over ontology, but at making ready helps to make an ontology for didactic purposes. While most ontology learning moves near grain processing machine many resources or are limited to certain one fields (of knowledge), dom- sortze is domain-independent and is dependent on only on the electronic books used to teach on condition that. In this experiment a books used to teach used in the mandatory coming after first or chief school was got broken up (into simpler parts), and this may have limited have in mind, get memory of the stage of the LDO.

V. Conclusion

This paper has presented dom- sortze a system for the almost automatic stage of the lands ruled over part of a greater unit from electronic books used to teach. The system employs NLP expert ways of art and so on, heuristic reasoning, and ontologies for the knowledge property processes, dom- sortze has been tested using an electronic books used to teach and making a comparison the automatically produced elements with the lands ruled

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over part of a greater unit done with the hands developed by instructional designers. The purpose was to value how dom- sortze gives for common purpose to lands ruled over part of a greater unit authoring. The electronic printed material used for the experiment was one of the books, written in the basque language, used in the nature Sciences person in the first direction of mandatory coming after first or chief education. As the experiment tryed to measure the knowledge property from wording, a story without images of the printed material was used as the starting point of facts.

In dom- sortze the lands ruled over part of a greater unit makes necessary a LDO, that has in it the main lands ruled over topics and the education operation relationships among the interests, and the learning ends (LOs) that are used to make able getting control of each lands ruled over thing talked of. 87.95 percent of the lands ruled over topics and 40.74 percent of the education operation relationships were automatically gathered with 17.48 and 72.50 perent precision, separately, dom- sortze was able to automatically get the idea 77.27 percent of the LOs for the lands ruled over part of a greater unit with 84.50 perent precision. The automatically gathered LDO can be over saw and gave greater value to using elkar- dom.

Currently, dom- sortze is being gave greater value to support new languages such as English. In fact, the property of LOs has already been adjusted and tested on a books used to teach on not in agreement adjustment to events listing of knowledge processing machine orders getting similar results to those presented in this work. The got broken up (into simpler parts) book has 67 pages and 29,300 words. The DR grammar for English achieved 80.09 percent having no error against the 70 percent achieved for basque. The biggest amounts, degrees, points different were made observation in the rules for clear outlines and problem-statements. The rules for clear outlines did better in English, probably because the groups of words making sense used in the book are shorter, and therefore less complex. The doing a play on problem-statements was worse for english. The say what a thing is of problem-statements in basque is helped by a helping operation used for necessary examples. However, making out necessary cases in English is harder. 75.93 perent of the LOs were gathered with 86.79 perent precision.

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