

ON-LINE E-LEARNING A ZKOUŠENÍ S POMOCÍ CROWD-SOURCINGU ZE SOCIÁLNÍCH SÍTÍ

ON-LINE ELEARNING AND EXAMINATION POWERED WITH CROWD-SOURCING FROM SOCIAL NETWORKS

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Abstrakt

Projekt Opus Sapientiae sa vymyká bežným konceptom e-learningových či testovacích CMS prostredí práve pre využitie "crowd-sourcingu" známeho, v rôznych podobách, zo súčasných WEB 2.0 aplikácií. Zároveň spočíva na jednoduchej, ale kľúčovej idei. Hlavná myšlienka autora, ktorá viedla k vytvoreniu tohto nástroja, vychádza z možností, ktoré prináša súčasná éra Internetu a celkovo iného prístupu k vysokoškolskému vzdelávaniu v medicíne. Osvedčený spôsob vychádzal z pomerne veľkej kontroly na spôsobom a obsahom výučby, kde sa síce vysvetľovali poznatky čo najefektívnejším spôsobom pre danú masu medikov, ale možno zbytočne diktovali spôsob a formu, akou medik poznatok nadobudol. Opus Sapientiae vychádza z predpokladu, že študent medicíny si je schopný v prostredí Internetu nájsť preň najvhodnejší „spôsob“, ktorým vyžadovaný poznatok nadobudne a preto sa Opus sústreďí skôr na - čo najobjektívnejší spôsob overenia správnych vedomostí u študenta. Aby tento systém fungoval, je

podmienkou spracovanie všetkých, teda aj tých základných, faktov v danej problematike, čo doposiaľ nebolo možné. Práve web 2.0 crowdsourcing umožňuje zapojiť samotných študentov do tvorby predotázok, ktoré následne po prípadnej úprave schváli pedagóg. Týmto spôsobom je už počas jedného semestra možné spracovať tisíce faktov (otázok a odpovedí) pre multiple-choice testy, ktoré systém dokáže generovať. Jednotlivé otázky a odpovede majú vždy presnú referenciu v literatúre. Systém ponecháva voľnosť študentovi ako a kde poznatok nadobudne, overuje však jeho poznanie u samotného študenta. Samozrejme prostredie Opusu obsahuje viac než 200 vylepšení, ktoré úspešne bojujú s klasickými nedostatkami sprevádzajúcimi testovanie študentov. Napríklad „memorovanie priamo z testov“, nerozlišovanie dôležitosti medzi jednotlivými faktami, slabú implementáciu najnovších poznatkov v danej problematike, či chýbajúce krížové opakovanie poznatkov zo súvisiacich problematik a mnohé ďalšie. Projekt je umiestnený v angličtine, slovenčine a češtine na www.sapienti.ae

Kľúčová slova: e-learning, skúšanie, crowdsourcing, CMS, test, WEB 2.0

Abstract

Project Opus Sapientiae does not follow the common concepts of e-learning or testing CMSs. This is due to its feature that implements the “crowdsourcing” principle known from today’s WEB 2.0 social network applications. It’s crucial idea is simple. The main idea of author that led to creation of this tool originates in possibilities brought by the era of vast Internet content and the chance of different approach in education of medicine at universities. Older and proved approach was used to maintain high control of method and educational content that was used to teach the students a particular topic. However the never-ending search for the most effective method of teaching the masses of students had a crucial weakness. It was its intention to be the best “for most of the students” ignoring their individualities and way of understanding. Dictating the way of learning ignores the individual predispositions of particular students in which some could prefer animation, other the schemes or text and another lectures. This is respected by Opus Sapientiae – which lets the student to browse for his preferred way or source to acquire requested knowledge for particular subject/topic and only checks the proper knowledge of fact with multiple-choice test. To meet the expected effects, the range of the questions addressing the particular topic must be extreme – including even the basic facts in this topic. This was not possible until now. Arrival of web 2.0 crowdsourcing allows involving students in creation of pre-questions which could be accepted, edited or rejected by the responsible teacher. With this crowdsourcing cooperation it is possible to map thousands of facts (questions/answers) even during one semester. Opus Sapientiae is able to generate multiple-choice tests with many different methods including export for “paper tests”. These questions always have an exact reference in the literature. System allows the students choose his/her own source and method of fact acquisition and only checks its proper knowledge. The environment of Opus includes over 200 improvements successfully targeting classical negatives accompanying the academic tests. For example „memorizing directly from tests“, indiscrimination of facts different importance, weak implementation of up-to-date facts in particular topic or missing cross-repetition between associated topics and many others. Project is available in English, Slovak and Czech at www.sapienti.ae

Keywords: e-learning, examination, testing, crowdsourcing, CMS, test, WEB 2.0

Introduction

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Features of Opus Sapientiae

As mentioned the Opus Sapientiae is a unique web 2.0 application for education, creation and examination. Running on autonomous server, CMS engine, PHP and SQL database. Currently in 3 language mutations(English, Czech and Slovak).

The system has over 200 describable features which either improve its educational effectiveness, testing objectiveness or CMS-friendliness. Under “CMS-friendliness” we understand the intuitive user interfaces, various features simplifying the process of management of questions, test or other parts of the system.

There are different points of view on the system. The perspectives of student or teachers are described below however it is interesting to look at the perspective of management of education. In the situations where academic institution is facing the lack of teachers for examinations or higher risks of corruption in the process of examination this system is exceptionally useful. Its features allow defining the tests of any required structure with defined minimum percentage necessary to pass the test and even to define the limit of "excellence" which could differentiate between students that passed the test. The test could be used as first filter before oral exam excluding students with inadequate knowledge saving the time of examiner in the oral part of the exam where he/she does not need to waste the time checking out if the student has the basic knowledge. This allows the teacher to spend more time verifying the students' ability to work with these facts and apply or combine them. The difficulty of the test is fully adjustable by the teacher and also the method of examination. The method of examination could be the "old style" the tests will be generated as PDFs on-line in variants and versions as requested, ready to be printed out. This method provides the correct answer sheet to speed up the process of processing the tests answers after the students finish the tests. On-line examination on net-books or tablets covered by Wi-Fi is more anticipated method of use for Opus Sapientiae.

1.1 Simple rules, clear idea:

1. Each educational topic could be pulverized into finite number of simple facts. The facts that could be questioned by simple yes/no multiple-choice questions.
2. To cover wider medical subjects with thousands of facts it is necessary to create thousands of questions. (including also basic and easy facts of particular subject - that are usually skipped with multiple-choice tests and student is expected do know them)
3. Opus Sapientiae allows to create, prioritize, fully control these questions, form them into electronic or paper tests and all of this with use of student crowd-sourcing allowing the students to formulate pre-questions.

1.2 Fighting against:

Memorizing - random order of questions and answers, targeting inversion of true answer that is not worth to memorize (memorizing 8 answers about what X is not versus 1 fact of what X actually is)

Corruption - implementation of transparent and objective system of examination could, in corrupted environments, meet unexpected opposition of corrupted authorities providing pseudo- arguments against implementation of the system. It is necessary to realize that any tests that are not officially published are subject for later corruption and also any non-transparent test-evaluation, in the hands of particular authority, is the same. The opposition against electronic multiple-choice testing could not only source from fear

of computers or corruption but also from correct objections against inability to verify the students' skills to apply or interlink the questioned facts. The multiple-choice testing is not the best way to verify the students' knowledge; however it is still the most objective and effective we know - to use widely in academic environment.

Opus Sapientiae is fighting against common negatives like:

Cheating of students

Lack of repetition

Lack of interdisciplinary links

Lack of newest knowledge

Forced learning path

Stress

Goal orientation: the goal is to objectively verify student's knowledge so he or she is left with no better or easier possibility than to learn and know the fact. The vast numbers of questions make the way of learning the facts in context(book/lecture) easier than mechanic memorizing of isolated facts directly from question lists. Knowing the fact is objective and oral exam after the text could easily estimate the ability of student to combine and use of facts. Less important disadvantages of electronic learning are simply fought by making the goal the easiest way to pass the test-that is usually the most frequent joint intersection of all learning paths.

Conclusion

Students creating the pre-questions to be authorized by teachers allow formation of vast amounts of questions necessary to avoid the memorizing from tests and to render the fair chance to address any fact in the tested topic. The tests created by teachers generate questions and answers in random order, offering the multiple-choice testing that could include pictures, videos, animations, sounds and other multimedia of current era including the pseudo-3D videos and pictures. The multiple-choice is not the best way to verify the students' knowledge; however it is still the most objective and effective we know today - to be used widely in academic environment. To give students freedom in choosing alternative source to study from, could lead in more effective learning and better knowledge retention.

Literature

- [1] A. Thurzo[et al], The WEB 2.0 induced paradigm shift in the e-learning and the role of crowdsourcing in dental education, Bratislava Medical Journal 2010;111(3):168-175