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MERGER: UNVEILING LINKS BETWEEN SYSTEMS FOR VIRTUAL PATIENTS DELIVERY AND CURRICULUM MAPPING

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Keywords: *virtual patients, curriculum mapping, natural language processing, machine learning*

The MERGER project brings together medical students and experts from the field of clinical medicine, information science, applied informatics and biomedical engineering, and proposes to develop methods for automated detection of links between existing information systems for virtual patients delivery and medical curriculum mapping.

The MERGER project will utilize a large amount of text data collected in systems for medical curriculum management and mapping (e.g. OPTIMED), and systems for virtual patients delivery (e.g. AKUTNE.CZ). The developed detection algorithms will employ natural language processing techniques and machine learning methods. The ground truth data for detector training will be provided by medical students.

The project developments will enable to answer the following research questions: 1) Is it possible to determine the distance or similarity between a virtual patient and a selected curriculum segment (e.g. learning unit, learning outcome)? Can these distances or similarities be transformed into binary links between those entities? 2) What is the accuracy of a regression model that, based on the features computed from word frequencies in a single merged text corpus, determines the strength of the link between a virtual patient and a curriculum building block? 3) Do the curriculum segments (learning units, learning outcomes) form a suitable entity for automated annotation of virtual patients?

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Links: http://www.akutne.cz, http://opti.med.muni.cz

POSTERS: A GUIDED TOUR

IMPLEMENTATION OF TRAINING ON VIRTUAL PATIENTS AT ZAPOROZHYE STATE MEDICAL UNIVERSITY

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Keywords: *virtual patient, D-PBL, medical error*

Medical education is a long and complex process that includes database creation, clinical skills development and competence enhancement. PBL (Problem-Based Learning) is a long-term course of medical education development; it is the most effective in those spheres where cognitive activity, constant extension of theoretical and practical knowledge, speed of decision making, confidence

in their own abilities and independence. PBL requires using special methodical support – cases. A case is a special clinical case, description in a set sequence of events.

The problem-based training methodology was introduced into the educational process of ZSMU in 2014, and since 2015 the clinical PBL methodic – D-PBL – in the frames of the project TAME-Training Against Medical Error of the Erasmus+ KA2 programme (2015-2018).

For realization of D-PBL a database of surgical virtual patients (VPs) was developed. VP is an interactive computer simulation captured from the real life of clinical scenarios that is created for the purposes of education, training and evaluation of students' knowledge and performance with the help of the OpenLabyrinth platform.

A working group consisting of surgeons and IT support personnel was created for development of VP cases. The regular trainings and meetings were organized to teach and provide any required assistance to the newly involved staff members during their work at the OpenLabyrinth platform. OpenLabyrinth is an open-source platform for creating and playing virtual patients. 6 VP cases in the surgical area were created for the period of 6 month; these cases cover 10 the most frequent dead medical errors. Above, we cite an overview of one of the surgical VP cases created by ZSMU working group at the OpenLabyrinth platform.

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REPOSITORY OF CLINICAL CASE REPORTS

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Keywords: *education, case report, repository*

Medical education involves various methods showing students the clinical examples based on real stories. Even if the evidence based medicine is considered as one of the most relevant methods revealing background of systematic research and relevant outputs, individual case reports have also a great potential to increase students' medical knowledge. Clinical case reports represent documentation of clinical observations that describe common and rare cases, characteristics of known and unknown diseases, variations in diseases and/or their combinations, side effects of drugs usage, as well as the ways the professionals use to solve particular case respecting their recent best knowledge.

Considering the possibilities of modern technologies and the fact that our teachers presented clinical cases to our students in many heterogeneous forms, including paper based and oral ones, we decided to concentrate their work in this area to the one unified and online available place. The advantages for teachers include the possibility to use generalized structure of reports and minimal requirements on technical skills. On the other hand, the students can find everything in one system and are allowed to study individual cases wherever and whenever they need. Because of great potential of mefanet's portal platform, we preferred to use our local instance of it to host repository of our clinical reports generated in various clinical disciplines. Furthermore, using this way and depending on authors decision, the individual case reports can be shared via Central gate to all students studying at medical faculties in Czech Republic and Slovakia.

To start our work, to address the widest community of clinical teachers and to reach maximum number of possible cases, the management of the faculty organized a meeting with clinical teacher