

**5TH INTERNATIONAL CONFERENCE  
ON MEDICAL EDUCATION INFORMATICS**

**MEI 2024 | 10-11 JUNE | Thessaloniki | GR**

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**Conference Programme  
&  
Book of Abstracts**

**Editors**

**Panagiotis D. Bamidis, Stathis Th. Konstantinidis**



*virtual worlds*

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BIOMEDICAL RESEARCH AND  
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# **Conference Programme & Book of Abstracts**

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*of the*

**5th International Conference on  
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**June 10-11, 2024**

**Aristotle University of Thessaloniki,  
Thessaloniki, GR**



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Panagiotis D. Bamidis, Stathis Th. Konstantinidis

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## QuPath Edu and OpenMicroanatomy: Open-source virtual microscopy tools for medical education

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**Background:** The importance of artificial intelligence and virtual microscopy in medical education and clinical practice is growing, prompting educators to prepare future medical professionals for these technologies. Existing software typically focuses on either anatomical training or AI and quantitative analysis, not both. To bridge this gap, we enhanced QuPath, a leading digital pathology tool (<https://qupath.github.io/>), with the QuPath Edu extension and the complementary OpenMicroanatomy web platform.

**Methods:** QuPath Edu transforms QuPath into an intuitive microanatomy learning platform. Alongside, OpenMicroanatomy, a web-based platform provides access to QuPath Edu's content. These tools offer features like annotated slide tours, multimedia, and quizzes, enhancing the learning experience. The first public versions of QuPath Edu and OpenMicroanatomy were released in August 2023 (<https://openmicroanatomy.github.io/>).

**Results:** QuPath Edu has been used in training basic histology to over 1200 medical and dentistry students at University of Oulu. In addition to the traditional benefits of virtual microscopy like collaborative learning and easy access, QuPath Edu provided a platform for doctoral training exercises in quantitative image analysis. The introduction of QuPath Edu and OpenMicroanatomy has enabled educators to deploy innovative training material across a variety of educational settings, fostering essential multidisciplinary skills in students.

**Conclusion:** The integration of QuPath Edu and OpenMicroanatomy into educational settings addresses the need for versatile tools that combine traditional histology education with modern digital analysis techniques. This unique approach not only enhances student engagement and learning outcomes but also prepares them with the multidisciplinary skills necessary for the evolving field of medical practice.

## SimS: Simulation medicine and Scenario-based learning for emergency care I

*Chair: I. Popova*

## Digital OSCE: Experience of Odesa National Medical University

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**Background:** Organizing objective structural examination (OSCE) requires much effort in preparation and carrying it out. Most of the work requires much synchronization between different departments of the university. In this report, we want to share our experience in implementing the digital version of the OSCE in Odesa National Medical University (ONMedU).

**Methods and Results:** In collaboration with the software company, we created a digital product “Perquisite Exam” for performing all exam-related procedures – from managing the list and content of the examined competencies and creating exam tasks to final exam reporting and giving results to the examinees right after they completed the final station. We do not show station grades during exams to examinees nor to examiners to reduce the effect of the grade on further examination and to reduce corruption-related issues. We have full control over the exam data: from recording surveillance video and the examiner’s reaction to the examinee's actions to calculating quality metrics for each exam question. This allows accurate measuring of all the aspects of exam-related processes.

**Conclusion:** Using the digital platform for all stages of OSCE greatly improves and speeds up the examination process while allowing full quality control during the whole examination process.

## Enhancing the quality of emergency care in Ukraine through the use of scenario-oriented simulation education as a problem-based approach tool

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**Background:** The study aims to evaluate how scenario-oriented simulation training affects the dynamics of changes in the professional competence development indicators of applicants for higher medical education in emergency care.

**Materials and methods:** The investigation was conducted using emergency simulation scenarios in May and June of 2023. Fifty-nine sixth-year students from three different groups in three different faculties attended the courses. In simulations, each student had to assess the necessity and worth of medical and resuscitation procedures. Following a debriefing, the students' management decisions were reviewed. Data on the participants' performance in the simulation was gathered using questionnaires and objective assessment criteria. A knowledge exam, a pre-test, a post-test immediately following the simulation, and a post-test three months later comprise this assessment. Students answered five knowledge questions, and their responses were to be turned in to see how the questions had changed between surveys. A pre-made mark sheet was then used to assess the responses.

**Results:** The students' confidence in all of the measured skills rose dramatically after the simulation, and this gain lasted for three months. After the training, all students' confidence levels for all abilities examined improved considerably ( $21.8 \pm 1.33\%$ ,  $p < 0.001$ ), and after three months, they stayed virtually at the same level ( $19.14 \pm 1.54\%$ ,  $p < 0.001$ ). After three months, the survival rate of knowledge was  $18.8 \pm 1.71\%$ .

**Conclusion:** The results show how beneficial and effective this teaching method is for the Ukrainian higher medical education system. It highlights that more research is necessary to figure out how to integrate simulation situations into the teaching and learning process most effectively.

## Experience for implementation of grant projects outcomes into the educational process