

## Evaluation of a new interactive e-learning tool (ILKUM) of the University Medical Center Mainz

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### Background

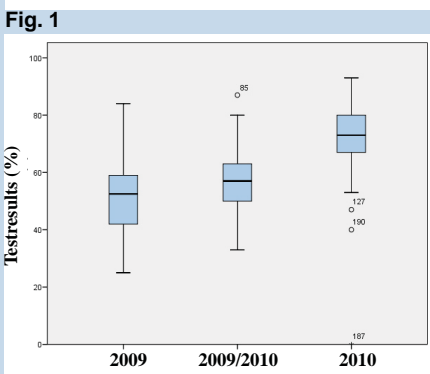
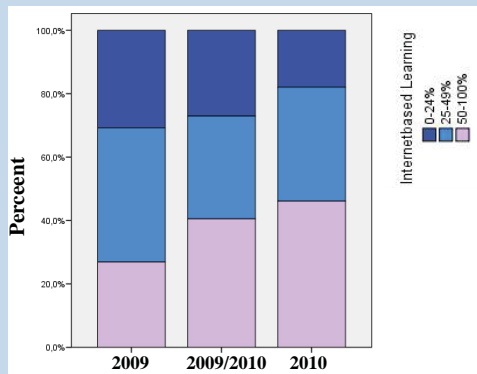
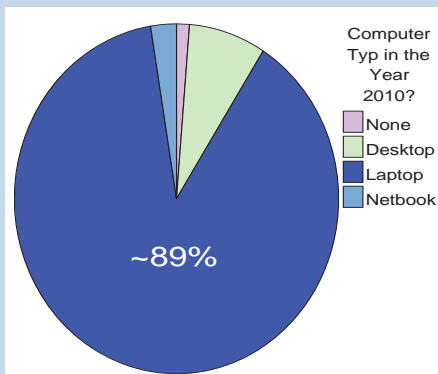
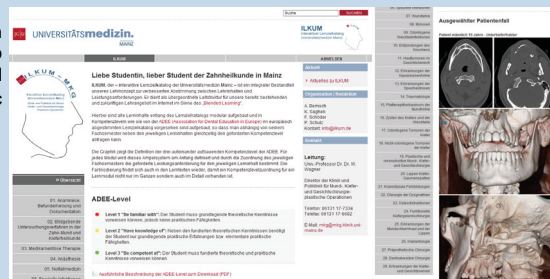
E-learning is an essential tool to improve dental education. Since 2009 our department has been developing a modular interactive e-learning tool (ILKUM) focussing on the medical curriculum (MC) to improve medical education. It includes small e-modules with structured descriptions of diseases and operative techniques supported by additional clinical cases, short video sequences, and scientific articles. Additional updates are announced over a social network.

### Objective

The objective was to analyse the overall acceptance of ILKUM among students. The percentage of students being able to use e-learning (possession of a computer/ access to the internet) and those actually using it was evaluated. In addition we evaluated ILKUM as a useful learning tool and the potential demand for continuous upgrades. Furthermore, e-learning self-testing scores were analyzed and correlated with the real exam results.

### Method

One student cohort (n: 68) was followed in a longitudinal study from the implementation of ILKUM until the final exam (04/2009 – 10/2010). Acceptance of ILKUM was evaluated by an anonymous questionnaire. The overall results were correlated to the average e-learning self-testing results of the students. Statistics were restricted to descriptive analysis only.



### Result

By the end of 2010, all students had access to a fast internet connection. 90% of the students possessed either a laptop or a netbook. Only 10% had a non-portable desktop computer (Fig 1.). The proportion of students using the internet as an information source for academic research increased constantly (Fig 2.). The proportion of students who thought ILKUM was a useful tool increased from 84% in 2009 to 90% in 2010. About 90% of all students asked for ongoing ILKUM updates with more content. Positive feedback regarding self-testing increased from 62% in 2009 to 78% in 2010. The proportion of correctly answered exam questions correlated with self-testing feedback, increasing from 51 in 2009 to 73% in 2010 (Fig. 3). The average monthly account on the social network was about 6600 clicks.

### Conclusion

Parallel to the development of our e-learning portal, the proportion of students using the internet as a learning tool constantly rose. Furthermore, there was consistent demand for upgrades to our e-learning tool, which was reflected in the rising number of students preferring e-learning and self-testing. This correlated with an improvement in exam results. The broad acceptance and demand for the new e-learning database among students reflects the importance of developing this kind of system. Next steps include structural modifications to the database in close cooperation with the students, focussing on the expansion of interactive self-testing. The newly designed e-learning software has positively contributed to the common interest of students and teachers by supporting modern medical education. The ILKUM concept could potentially become a state of the art "level based" modular e-learning tool.

Fig. 3

Fig. 4

