KIKI – A Key to the Integration of Knowledge and Innovation

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Abstract. The proliferation of ICT within the educational domain is serving to overcome several barriers associated with traditional pedagogies. However, the challenge of balancing educational objectives against technical limitations and harsh financial realities is becoming more relevant than ever. Specifically, one is often faced with insufficient funds for hardware resources, lack of streamlined distribution mechanisms for software, and irreconcilable disparities in the packages offered.

In this demo, we present KIKI as a tentative solution to the aforementioned obstacles. KIKI is a prototypical system devised following extensive research on learning paradigms, including collaboration and the use of games within the educational context. It is meant to serve as a platform for deploying educational software through an extensible architecture which provides inherent support for MultiPoint functionality, inter-computer communication, user identification, and progress tracking. Seamlessly integrated, it would bind all stakeholders (developers, administration, teachers, and students) in their respective roles, amplifying the dissemination of knowledge and providing enhanced educational opportunities for all, irrespective of age and financial conditions. The system would also enable an innovative edge, giving unbounded opportunities for the development of applications to best meet the local demands.

We will start off the demo with a summarization of the principal problems facing education in the world today. We explain how KIKI aims to address these problems, and demonstrate how it is devised as a series of conceptual layers, with the responsibility for each layer being relegated to a particular stakeholder (or category thereof). Subsequently, we expose the architecture of the system, highlighting how this would empower the said stakeholders and facilitate their interactions. Finally, we shall share our experience at testing the system with the help of a class of thirty students from a primary state school. The setup consisted of eight computers for the students, each having three to four mice connected, and the teacher’s computer. The competitive aspect brought about by this fresh pedagogy was very successful at keeping the students engaged in a typical lesson. The students were absorbed throughout the lesson, with a constant display of enthusiasm towards the new system. Meanwhile, the teacher found it easier to control her class and, with the help of the real-time progress-monitoring system, had more control on the performance of each student.

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