National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Development of a Kinaesthetic Tool for Digital Learning
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Abstract	: Today, education sector is seeing a massive engagement of various advanced technologies for better learning experiences, often within highly interactive physical/digital environments. This research work aims to integrate kinesthetic technology and embodied learning activities for augmenting classroom learning at different stages of classroom education (primary school and engineering coursework). One particular tool to implement such a learning system is the Microsoft Kinect sensor. The device has especially found significant interest, scope and application in technical research contexts dealing with human depth sensing and motion tracking in the past decade. In the recent past, Kinect based digital platforms and applications have been successfully deployed for practical and research purposes such as rehabilitation, gait analysis, ergonomics, robotics, education, etc. Therefore, it follows that the same tool could reliably be employed as a natural user interfacing (NUI) device for development of digital learning applications and thus, in implementing embodied learning activities. It is also worth noting that gamification of digital applications is a popular trend today among several digital media application creators. Also, several literature employing Kinect based activities are recognizably game-oriented. Therefore, game-based methodological strategies are being reviewed and are expected to be employed significantly in this digital learning specific research work. It is hypothesized that game-based learning applications could significantly affect a learner's attention, engagement in the learning task and motivation for learning. At the same time, the process of interface design and evaluation for any such application is proposed to be achieved with the help of established heuristic principles for usability of digital screens. Scope: Any digital learning application of the kind described above should find enormous potential in improving classroom learning across India. Development of such a tool and system is a mission strongly aligned with contemporary India's national priorities such as the basic literacy missions such as the Samagra Shiksha Abhiyan which comprises of four schemes viz. Saakshar Bharat, Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan and Centrally Sponsored Scheme on Teacher Education (CSSTE) as well as initiatives such as Skill India, of various initiatives under this campaign are National Skill Development Mission, National Policy for Skill Development and Entrepreneurship, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Rural India Skill, etc. Key words: Digital Learning, Microsoft Kinect, Human-Computer Interaction (HCI), Natural User Interface (NUI), Kinesthetic Interaction.