Vygotsky's Zone of Proximal Development in Connection with Technology-Enhanced Learning Environments

Technology-enhanced learning environments (TELEs) that support social interaction between teachers and learners are common in engineering higher education institutes. TELEs are often equipped with professional hardware and software, which not only enable learners to gain access to variety of learning instruments, but also allow learners to practice with authentic equipment and design tools. Furthermore, teachers can use TELEs and scaffolding principles to organize teaching in several ways that are beyond traditional classrooms. This paper discusses the potential of TELEs to shape the zone of proximal development (ZPD) of learners such that they could do harder learning activities than would otherwise be possible in less conducive environments. In addition, an example of a conducive TELE is presented that might have enlarged ZPD of learners, and, as such, may partly explain good learning outcomes obtained. The illustrations in this paper may help teachers to gain better understanding of the benefits of environment creation as well as to organize learning episodes that are suitable for ZPD-based thinking.

Pedagogical Content Knowledge in Product Development Education

Engineering education at university faces challenge concerning the efficiency in producing results in learning. Engineering Education will be exposed to globalisation resulting in tough competition between the service providers and individual contributors. This study focus on capturing and discussing teachers’ pedagogical content knowledge on product development education. Currently there are no holistic approaches presented from teacher knowledge viewpoint. The next steps how to develop this knowledge of product development teaching further by focusing on the continuous learning process.
Affective experiences and student engagement in higher education

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Language Centre, Managing digital industrial transformation (mDIT)
Authors: Helander, N., Boedeker, M., Hellsten, P., Jussila, J., Myllärniemi, J., Tukiainen, M.
Publication date: 13 Sep 2016

Host publication information
Title of host publication: 44th Annual Conference Of The European Society For Engineering Education : 12-15 September 2016, Tampere, Finland
Place of publication: Tampere
ISBN (Print): 9782873520144
Keywords: Affective experience, Higher Education
ASJC Scopus subject areas: Education
Links:
Links:
Research output: Scientific - peer-review › Conference contribution

I feel great - university students affective experiences on learning and teaching
According to Kolb [1], experience is the source of learning and development. This is a statement that serves as the
starting point of this study. We argue that the role of affective experiences cannot be overlooked when evaluating
university learning and teaching. In the present paper, we will study students’ affective experiences in higher education
setting, specifically in engineering education in a technological university. The perceived affective experiences are
empirically analysed through a mystery shopper data set, which was gathered in the case university by a group of
students. The study bases theoretically on affective experiences framework, more familiar from the consumer behaviour
research stream. The aim of the study is to analyse what kinds of affective experiences students recognise when studying
in a technical university and further to elaborate, how these affective experiences could be used to increase student
engagement and the students’ motivation to learn. The study provides an innovative approach to university learning and
teaching by applying mystery shopper method and affective experience approach from more businessoriented disciplines.
The contribution to education science is the increased understanding of the role of affective experience in learning.
Mystery Shoppers Recognising Knowledge Sharing Barriers in Higher Education

This study focuses on the knowledge sharing barriers in the space between learning and teaching in higher education as reported by mystery shoppers. There is surprisingly little context-specific research on learning and teaching in a knowledge intensive community like a university from the perspective of knowledge management (KM). Discussing learning and teaching within KM is based on considering students controversially as customers or stakeholders. Thus including them more meaningfully in assessing and developing teaching practices, or knowledge flow, seems justified. The specific aim of this paper is to first recognise possible knowledge sharing barriers and then categorize such barriers emerging from the material into three larger domains, namely, individual barriers, technological barriers and organisational barriers.

There were 45 students from all faculties participating in a mystery shopper project in a Finnish university of technology. They observed their learning experience for six weeks in order to supplement data from other sources, to add a student voice on the process of developing learning and teaching in higher education. The research approach represents qualitative content analysis in which knowledge-sharing barriers were recognised from the qualitative mystery shopper data. The results identify teaching practices that contribute to creating knowledge sharing barriers. More detailed and almost real-time contextual activity sampling is suggested as a method for further study and also an avenue for instant feedback for teaching staff. The results will provide data on current knowledge practices and learning processes in a technical university in Finland.

General Information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Language Centre, Department of Information Management and Logistics, Research group: Novi, University of Tampere
Authors: Tukiainen, M., Helander, N., Mäkinen, M.
Publication date: 16 Nov 2015

Host publication information
ISBN (Electronic): 978-84-608-2657-6
Links: https://iated.org/iceri/

Bibliographical note
ORG=kie,0.5
ORG=tlo,0.5
Research output: Scientific - peer-review › Conference contribution