Supporting Higher Education through Electronic Meeting Support in Tanzania

Gert-Jan de Vreede
Delft University of Technology
The Netherlands
email: devreede@sepa.tudelft.nl

Rabson J.S. Mgaya
University of Dar es Salaam
Tanzania
email: rmgaya@cs.udsm.ac.tz

Abstract
To learn, a person has to be able to communicate effectively with others about the knowledge to be learned. Communication processes in class rooms can be supported by Group Support Systems (GSS), that enable students to communicate anonymously and in parallel. GSS experiences suggest that the technology increases observed learning, self-reported learning, on-task participation, and satisfaction with the learning experience. This paper discusses case studies from higher education in Tanzania. The particular benefit of GSS in this environment was threefold: First, it encouraged meaningful interaction among students and between students and teachers. Local culture normally hinders this. Second, it allowed all participants to freely discuss sensitive topics. Finally, it exposed students to collaborative technologies that are expected to play a pivotal role in (global) collaborative development activities.

1. Introduction
Teaching at universities and Higher Vocational Education institutions is currently facing a number of challenging developments. Students have to adhere to tight study programs in order to graduate within fixed time limits. Organizations employing graduates have for years been calling for educational programs to be more closely coordinated with the skills they require. Finally, the budgets of universities and Higher Vocational Education institutions are under almost constant pressure [11].

In response to these developments, educators and educational institutions are in search of teaching methods, techniques, and technologies that make teaching more efficient and effective. As a result, various forms of Information Technology (IT) are often deployed. The potential uses of IT in education range from providing analytical tools and eliminating distance barriers to replacement of repetitive tasks [13]. It is expected that IT supported education will involve lower costs for travel and classrooms, provide greater convenience, security, and flexibility, and will bestow the ability to ignore time and geographic differences. Learning overall is expected to become faster, more interesting and qualitatively better while the student/teacher ratio can increase [19].

In terms of teaching methods, collaborative learning in face-to-face settings has been shown to be a highly effective learning strategy [1]. In contrast to more traditional forms of education where the primary interaction between teacher and students is where the teacher speaks and the students listen, collaborative learning emphasizes group or cooperative efforts among students and faculty, and often focuses on the interaction between students themselves. Students actively discuss and debate on a whole range of subjects and problems in order to come up with explanations, suggestions, and solutions for them. This process helps students to conceptualize, construct, and internalize procedures and knowledge [23]. Also, sharing information helps students to deepen understanding. It is in this learning environment that various types of IT support are emerging rapidly, see e.g. [6, 10].

In general, bringing electronic support into the classroom aims to facilitate the information flows between students and instructors, and among students [14]. This paper focuses on one particular collaborative application that can be used within various forms of education to provide effective support for learning processes: Group Support Systems (GSS). GSS enable teachers and students to share and capture information and knowledge efficiently and effectively. We have applied GSS in a number of case situations in Tanzanian higher education to explore how this technology can support learning processes. In the remainder of this paper we will first discuss education in Tanzania and the role of GSS in education in more detail. In the next two sections, the case experiences in Tanzania will be presented and discussed. We conclude the paper with a summary of our findings, the limitations of our study, and directions for future research.

2. Background