ONLINE COURSES EVOLVING TEACHER EDUCATION PROGRAMS

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Introduction

Online Teaching in teacher training colleges has become part of training towards schools of the future. Colleges are opening more and more massive online courses. Skills to integrate technology into learning are becoming increasingly important both for the college students' studies and for their ability to fit into the schools of the future. The Ministry of Education considers the student's ability to fit into schools today, not to mention the schools of the future, as one of its main goals, and the goal is that colleges will train graduates who will be able to lead changes and implement technology in schools. Therefore, it is important to assess the contribution of the online courses for the technology literacy of teacher trainees. The proposed research will analyse the contribution of the various methods of online courses (Hybrid, Online, MOOC) for a length span of several years, at a width span of various student populations, undergraduate and graduate students. This study examines the attitudes and perceptions of students in various courses in several areas: the teaching process, the contribution of online tools, self-study, satisfaction, contribution to the learning course, implementing different learning tasks, and the use of technology for teaching and learning. The questions which have arisen focus on the pros and cons of each model, the contribution of each model to students' perceptions on the integration of ICT in teaching and its influence on students' achievements. The study used questionnaires based on the MOFET research network, students' achievements, courses' outcomes and interviews with students from all courses. The findings will be used to discuss the controversy regarding implementation of online courses in colleges of education as part of the curriculum.

Literature review

ICT in teaching

The groups responsible for leading education in Israel and abroad called upon the implementation of information and communication technologies (Kwong, 2015; Voogt et al., 2015; Melamed et al., 2010). As a promoting step, national programs began to appear in Israel and abroad (OECD, 2011), as well as in the teacher training system. However, studies conducted on these programs indicated little progress and excessive work that falls on the Ministry of Education in training teachers and teacher educators (Goldstein et al., 2012).

Programs to integrate ICT in teacher training have become part of the plan to adjust the education system to the 21st century. Within this framework, technology professors must combine studying the discipline, methodology and pedagogical training (Melamed et al., 2010). A study done before the program began, pointed to deficiencies in training students to integrate ICT in teaching. About three-quarters of the graduates of teacher training colleges completed their studies without practical experience in this area, and in recent years the scope of ICT courses which are taught at colleges have been reduced. It seems that the policy of the institutions affected the reduction of teacher training courses in the field of ICT, as well as a lack of motivation by many teachers and pedagogical counsellors to adopt pedagogical innovation and demonstrate it to the students. These reasons have led it to a halt of the process of implementation of ICT in recent years. It seems that many professors at colleges of education are incorporating ICT in their lessons in traditional ways, but only a fraction of them combine them in advanced methods such as Inquiry learning, individual and group creativity, authentic problem solving and collaborative learning (Goldstein & et al., 2012; Schrire, Shonfeld & Zelkovitz, 2015). These skills also appear in other documents on teacher training around the world. One of the recommendations is learning and fostering creativity through exploration activities and problem solving, while working in collaboration with colleagues and using information technologies. In addition, the intelligent use in synchronous and asynchronous surroundings, bringing students to self-esteem and peer esteem, collaboration and assessing information skills, will lead teachers to a rapidly changing world (Resta & Carroll, 2010; UNESCO, 2009). In addition, teachers must be trained in distance online teaching, following an increasing demand for such instruction in the education system (NACOL, 2007).

Teacher training colleges, in charge of student training, should develop pedagogical approaches, appropriate skills for the 21st century and required technological literacy. Modelling of lecturers as well as learning experiences will influence the perception of teacher trainees' teaching (Cochran-Smith, 2003). In other words, online teaching experiences will lead teachers to think about the pedagogy which is based on technological environments. This concept is important because children spend much of their time in this environment, but on the other hand school is becoming less relevant. Of course one cannot expect that the use of massive online environment alone will increase school relevance, but this is an important and major factor in making school meaningful for the students (Rotem & Peled, 2010).

Hybrid courses, online courses and MOOC

Comparison of hybrid courses and online courses which were conducted at the College of Education showed students in online courses emphasized the pedagogical component of the course and that of peer learning and its contribution. In the hybrid course, they emphasized the contribution of technology tools. Online courses may change the way of teaching and may enable each student to be a partner in learning, which is not possible within the framework of the traditional classroom (Kritz, Rozner, Shonfeld & Gujski, 2014). These findings support expanding the use of online courses.

The information revolution has brought about a significant change in lifestyle for many around the world, and the ongoing growing access to the Internet has brought about, among other things, to increase in the use of distance learning in various educational settings. Advantages of distance learning are that it is not limited to time and space, and allows flexibility and personal learning. However, its integration into the education systems has encountered difficulties (Even & Slavi, 2010).

Following distance teaching models such as correspondence and radio and television broadcasting, online education is often seen as a-synchronous, executed in learning management systems such as Moodle. These are used to manage course content, teaching and learning activities, interaction between students and between students and the instructor asynchronously only (Moore & Kearsley, 2012). Recently, the development of communication technologies and accessibility to the use of the Internet at speeds and bandwidths are increasing have sparked new directions of thought concerning the use of online technologies, including combining approaches (blended/hybrid) where teachers combine media types (text, audio, video) also synchronously (Skype, Blackboard, Hangout) in the same course. (Roseth, Akcaoglu & Zellner, 2013).

Under ideal conditions, combining approaches makes it possible to combine technology, pedagogy and content to the specific needs of different learners and different requirements derived from different teaching and learning context (Mishra & Koehler, 2006). But in practice, when designing an online course, tough decisions need to be made about the structure of online teaching, which will allow a certain course in a certain context, for example, the lecturer's desire to use cooperative learning pedagogy or any other pedagogy.

MOOC

In recent years, there is a trend of increasing the number of students in each class in colleges of education in Israel. This corresponds to the global phenomenon of the opening of the courses with numerous participants called MOOC (Massive open online courses). Most famous among them are university courses around the world as part of Udacity, EdX, Coursera, and other projects continue to evolve. Universities are joining this trend due to the perceived prestige of these courses and also because of the economic aspect which enables cost decrease of courses. This change causes many academic institutions to re-examine the methods of teaching and the contribution of each model. The MOOC courses which are designated towards thousands of students are generally based on the cognitive-behaviouristic approach (Daniel, 2012). The courses are based on the teacher's class recordings, additional videos, reading materials and interactive questions which lead to a discussion among participants.

In a study of the scope, extent and characteristics of the use of video of MOOC participants, it was found that most participants in the course viewed at least one video in his self-learning. However, many participants did not watch video at all. Most of the viewing was done before the exam. In addition, it was found that watching the video was made through online means

(Daniel, 2012). This raises the question as to the improvement in learners' achievements in online courses which include multimedia materials.

Many studies conducted in the last twenty years have shown no significant difference in learning achievement between the online course and the classroom course. However, researchers believe it is important to distinguish between different learning success of various teaching methods and in reference to the way teaching and learning occurs in online teaching. It seems that further studies are needed to refine our understanding regarding the most effective teaching environments for different students (Moore & Kearsley, 2012). Therefore, studies of various online courses could contribute to understanding the ways online courses should be built and implemented.

Study context and subjects

The study was conducted in courses taught for undergraduate and master's degree (nine different courses). The college curriculum includes basic studies and enrichment courses (including courses in computer applications participating in the study), education studies and literacy research in education, experience in teaching, pedagogy and methodology and studies that focus on the teaching profession. Examining the perception of the students about the contribution of the course learning, student achievement, and the visible benefits of each model, will enable re-examining the desired models. In addition, change in a specific course over the years and among different populations will enable a thorough examination of these models.

The study population included about 350 students studying in Undergraduate courses, computer applications in education (110) – Master's degree in technology in education (50 + 40). Undergraduate students who study in an online course (25 + 25), undergraduate students enrolled in the hybrid course (25). Graduate students M. Teach (30+ 40). A comparison will be conducted between students enrolled in 2016, 2015 and the results of the study conducted on the students enrolled in 2013, 2014.

Research questions and hypothesis

In recent years, teaching colleges are required to implement online courses in order to adapt to the digital reality of the 21st century. At Kibbutzim College overtures were also conducted to examine the effectiveness of online courses in different styles: hybrid courses, online courses and as well as MOOC multiplayer courses. These courses receive much investment and financing from the developers. Therefore, it will be interesting to compare the different models of courses provided by the college in different populations and in recent years (2013-1016).

Research question

What is the contribution of the multiplayer online course to education students' studies versus the blended course and hybrid course?

Sub-questions:

1. What is the contribution of each model to the training of students to integrate ICT in teaching, as students and as teachers of the future?
2. What is the contribution of each model to the student's perception about the integration of ICT in teaching?
3. What is the contribution of each model to the achievements of the student?

Study type

The research was done in a mixed methodology, i.e. in quantitative methods which include questionnaires with closed-ended questions and achievement tests. However, in order to completely understand the differences between the students from various learning models, five students from each course interviewed and there was a content analysis of. The questionnaires were based on a related, validated questionnaire from MOFET research network ICT. In addition, the contribution of each model to the student's skills development was examined and the advantages and disadvantages of each were discussed.

Models of teaching subjects in research

Three models of teaching subjects are examined in this study: multiplayer online course, a *standard* online course and the hybrid course. One multiplayer online course meeting was held in order to learn technological environments and how the course is conducted. Later, self-learning takes place which is based on weekly assignments which include Q/A forums (a discussion group in which participants get to see the discussion only after submitting their post), videos and interactive questions, including peer assessment.

A *standard* online teaching model includes one face to face meeting (the first lesson) and the rest of the course is in a learning management system, with asynchronous components along with synchronous components simulating the F2F in a virtual environment.

The hybrid teaching model, the course is partly online and consists of five F2F sessions which is conducted frontally. All materials studied, and even expanded, are in LMS (Moodle), accompanying the course and except what is taught and expanded, have the rest of the mechanisms that accompany the course: discussion groups, tasks and mechanisms for their submission, tracking attendance and grades, announcements, etc.

Preliminary results

The college feedback questionnaire showed that the students appreciated both courses and the scores were high. Analysing the course products and activities showed no differences in activities pattern in individual assignments, while in the collaborative assignments, especially those requiring discussion, there were differences. In class discussion only few students participated but in the online course most of the students participated.

Students from the Hybrid course emphasized the ICT tools they learned to use while students from the online course emphasized self-learning, peer teaching and various pedagogical strategies.

The content analysis is in process and more results will be added to the proceeding file. However it seems that students understand the importance of such courses. As one of them wrote: "It enabled me to take responsibility on learning, to get involved in learning and to put efforts in learning".

Discussion

The infiltration of MOOC's into higher education institutions also affects teacher training institutions. Teaching various levels of online teaching is gradually replacing the traditional frontal teaching. The learning environment in educational institutions and the students' private sphere are becoming more and more ICT. App usage is growing in most aspects of everyday life, as well as in learning and teaching. Various difficulties, geographic and others, raise the need for online teaching. The considerations are not always relevant in the field of pedagogy, and administrative considerations such as better utilization of classrooms *tempt* the management of educational institutions to teach online, which doesn't need classrooms. There are supposedly relevant considerations as well: the continuous improvement of browsing speed and LMS technologies enhances the possibilities for online teaching. Often the argument arises about the need to expose students teachers (and their teachers) to technologies and teaching models that become part of our world and which they will likely encounter in their field of work and hence the importance of exposing student teachers to virtual teaching environments (Campbell, 2009).

Much has been researched and written about the pros and cons of online teaching. Its wide availability and improvement are rapidly and increasing and are confronted by the fear of its disadvantages, such as the loss of the social component and the experience of F2F human encounter, or its lack of suitability for certain learning styles and students.

Results of this study will be added to this paper along with the discussion. However, this study could be used as a pilot for further studies dealing with the development of online teaching in higher education institutions in Israel and worldwide.

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