

Competency, Readiness, and Online Learning

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Abstract

This study investigates the effect of technology competencies and online readiness on preservice teachers' online learning experiences and preferences. A total of 99 preservice English teachers formed the sample of this study. The study lasted four months. During this period, the preservice teachers were exposed to blended learning. The results showed positive correlation between technology competencies, online readiness, and online learning experiences of preservice teachers. The findings also indicated preservice teachers do not prefer a fully online course but an online supported traditional course.

Introduction

It is a challenging task to prepare future teachers to use technology effectively for learning and instructional purposes. To overcome this challenge, teacher education organizations has developed new curricula for preservice education programs, and conducted training sessions for in-service teachers. Parallel to the worldwide practices, the Higher Education Council (HEC) in Turkey, which is responsible for planning, coordination, and supervision of higher education has developed the new teacher education curricula for schools of education, and in 1998, ICT has been included in the new teacher education curricula to improve and enhance IT skills of the prospective teachers. According to the new curricula, "Instructional Technology and Material Development" course became compulsory for both primary and secondary education pre-service teacher education programs to accomplish the requirements for teaching qualifications. The goal of the course is "to underline major developments in the field of learning and teaching so as to understand the function of instructional technology in the learning process; to emphasize learning theories that form bases in selecting instructional media and materials; to highlight basic advantages and disadvantages of the main instructional media and materials; and to provide the background, skills and practice needed to prepare and use a wide range of instructional media and materials" (HEC 1998).

Inline with the course goals, to help preservice teachers gain competency in the use of online learning technologies, and to provide them with online learning experiences, Instructional Technology and Material Development course was designed as a blended course, and NET-Class online learning management system (LMS) was integrated to the course in the Fall term of 2004-2005 academic year at Middle East Technical University (METU) in Ankara, Turkey. Informatics Institute at METU developed NET-Class online learning management system in 3 years considering the feedback gathered from faculty members and students in campus-wide online courses. The system provides asynchronous online learning environment. It helps the instructors manage online parts of their courses without the need of extensive technical knowledge. NET-Class allows both students and instructors follow and manage Web-based asynchronous courses using standard web interfaces. The major features of NET-Class include forum, e-mail, test tools, grade book, and student tracking and many templates (syllabus, announcement, assignments, lecture notes and etc.) to produce core parts of a course. NET-Class uses any browser as its user interface.



To be able to benefit from online learning environment, technology competency and readiness for online learning seem to be essential factors. Warner et al. (1998, cited in Smith, Murphy & Mahoney, 2003) explained readiness for online learning under “(a) students’ preferences for online form of delivery compared to traditional classroom instruction, or the provision of print-based pre-packaged resource materials; (b) students’ confidence in using online communication for learning and, specifically, in the use of Internet and computer-mediated communication tools; and (c) ability to engage in self-regulated learning.” Similar characteristics were examined by Smith (1999, cited in Smith, Murphy and Mahoney, 2003), and she was in line with Warner et al (1998) in regard to students’ preferences of online learning. Muilenburga and Bergeb (2005) defined eight barriers to online learning as administrative/instructor issues, social interactions, academic skills, technical skills, learner’s motivation, time and support for students, cost and access to the Internet, and technical problems. To be able to have effective online/blended programs/courses, the factors that affect the success in such learning environment should be determined. Accordingly, the aim of this study is (1) to examine the relationships between preservice foreign language teachers’ technology competencies and beliefs, online learning readiness, and online learning experiences and preferences, and (2) to investigate preservice foreign language teachers’ experiences and preferences related with online learning and online learning environment.

Method

A case study design was used to examine the relationships between preservice teachers’ technology competencies and beliefs, online readiness and online learning experiences and preferences. For this purpose, a specific undergraduate course, “Instructional Technology and Material Development” was selected, and the preservice teachers taking the course formed the subjects of the study. A survey technique was used to collect the relevant data. Below, the detailed description of the subjects, the procedures, the data collection and analysis are presented.

A total of 99 (30 males and 69 females) third year Foreign Language Education Department’s students who took “Instructional Technology and Material Development” course during the fall semester of 2004-2005, at Middle East Technical University in Turkey formed the sample of this study. Prior to this study, the students took two introductory courses on computer applications, and they had the basic knowledge and skills on the basic computer applications.

The purpose of Instructional Technology and Material Development course is to help preservice teachers gain knowledge and skills in a variety of instructional technologies, and in developing and evaluating technology based instructional materials (HEC 1998). In line with the course goals, NET-Class online learning management system (LMS) was integrated into this course and designed as blended course in the Fall term of 2004-2005 academic year. At the beginning of the study, the preservice teachers were given a four-part “Preservice Teachers’ Technology Beliefs and Competencies Survey” to determine their background variables, technology skills and competencies, computer-information technology beliefs, and stages of adoption of technology. The survey was adapted from Brush (2000) and Christensen (1997) and Bulu (2003). Additionally, “Preservice Teachers’ Readiness for Online Learning Survey” was administered in the beginning of the study to find out preservice teachers’ online readiness and use of online learning systems. The first part of the survey was adapted from Lynch (2003), and the second part was adapted from Miltiadou and Yu (2004). Then the students received a blended course which was traditional classroom instruction supported with

online learning environment. Students were not given any paper-based document but online lecture notes, and assignments. During this period, the students and the course instructor communicated through the online learning management system in regard to individual assignments, group projects, and announcements. At the end of the semester, the students were given "Online Learning Experience and Preferences Survey" to investigate their experience and preferences of online learning. The survey was originally developed by Informatics Institute at Middle East Technical University. For this study, some changes were made in the original survey, and some new items and two open-ended questions were added.

The data gathered through the questionnaires were analyzed by descriptive and inferential statistics. First descriptive analysis of the items in three questionnaires in terms of means and percentages were carried out. Second, sub-scale scores were calculated for each category under three questionnaires. Then the relationship between technology competency, online readiness, and online learning experience and preferences scores were analyzed through a correlation coefficient test. The data collected through open-ended questions were subjected to content analysis. As Miles and Huberman (1994) and Yildirim and Simsek (2005) stated, content analysis was performed to search for meaningful themes in the data and to assign descriptive codes to describe the data in a meaningful way. For this purpose, the answers for open-ended questions were entered into computer files for each question. Second, the entered data were coded to classify and organize the data. Third, themes were identified in order to arrange the codes in a meaningful and consistent way, and then the codes were grouped under the main themes. Finally, the coded data were explained under these main themes, and then the interpretation and discussion of the results were presented.

Results

Descriptive Results on Technology Competencies, Online Learning Readiness, and Online Learning Experiences and Preferences

The results of the study showed that preservice teachers' perceived technology competency ($M=3.16$) is at the level of "I can do this independently," and majority of the subjects ($M=3.31$) "agree" in importance of technology integration in education. Majority of the preservice teachers in this study perceive themselves at "familiarity and confidence" level in stages of adoption of technology. Similarly, the subjects feel ready for online learning "most of the time" ($M=3$). They perceive that they are "somewhat confident" ($M=3.2$) in online technologies. In regard to their online learning experiences, they "agree" with the statements that they find the online learning management system effective ($M=3.77$) and online learning experience beneficial ($M=3.61$).

Related with preservice teachers' online learning experiences, some statements are striking. They strongly agreed with the statements that "accessing the course notes online was helpful for me" ($M=4.21$), and "receiving e-mails related with the course events were effective for timely communication" ($M=4.26$). Even though they found the online learning support system beneficial and helpful, they prefer face-to-face communication to online communication ($M=2.4$), and they do not prefer fully online courses ($M=2.6$). From these results it can be concluded that although the preservice teachers found the online learning experience beneficial and helpful, rather than having fully online courses, they prefer blended courses.

The data gathered from the open-ended questions are in line with these findings. One of the students stated, "I do not like online courses, but ability to reach course notes and

announcements whenever you want is helpful.” 22 preservice teachers indicated that easy access to course materials was one of the most useful features of the blended course. One of the student mentioned “the presentation of the instructor was online, so I did not have to take notes during the lessons, so I listened my instructor with more attention”. Another stated “It was useful because when I wanted to access some information about the course, I could get them easily, and it is good to have online supporting materials.” Three of the students found the online tool time saving. One of them pointed out that “well, seeing the class notes on the net was good. I think it was very helpful in the sense that it saved us all the photocopy time.” Some students found online environment efficient for learning. One of them stated that “Online courses are easy to understand, there are only the main important points, and it is a selective learning. There is no unnecessary information.” Another stated, “Online course was helpful and well designed.” Another theme withdrawn from the open-ended questions is “being informed about the course events.” Related with this theme, one student mentioned, “timely access to information and assignments” as useful. In support of this view, another indicated, “We knew what kinds of assignments we would do throughout the semester.”

The second open-ended question asked students for their recommendations and criticism for better use of the online tool. Two students mentioned about the bandwidth problem with the online system and they could not access the course web site easily from home. One of them stated that “Sometimes I could not open it from home. I do not know what the problem was but it annoyed me at times”. Another indicated, “I could not access the system most of the time.” Another important finding was that even though the student took two computer related courses before the study, and their perceived technology competency level was somewhat convenient to enroll in an online learning course, four students stated they needed some orientation related with the learning management system used in the course. One of them stated, “There are some people who do not know how to make use of online tool. So at the beginning of the semester the instructor should provide some information about it.” Another supported this view by saying that an orientation to the LMS with more practice would be useful.

Relationship between Technology Competencies, Readiness for Online Learning and Online Learning Experiences and Preferences

Regarding the relationship between technology competencies and beliefs, and online learning experience and preferences, the correlation analysis showed positive correlation (.313) at 0.05 level. Similarly there was a positive correlation (.265) between online readiness and online learning experience and preferences at 0.01 level. Additionally, positive correlation (.399) was found between technology competencies and beliefs, and online readiness of preservice teachers at 0.05 level. Accordingly, it can be concluded from this result that technology competencies and beliefs, and online readiness of preservice teachers have effect on their online learning experience and preferences.

Conclusion

The findings of the qualitative part of the study indicated that easy access to course materials, being informed about the course events, being on time related with the course events, and time saving were the most useful features of the blended course. Most of the preservice teachers found online part of the blended course beneficial for their future profession. However some of them who do not live on campus faced with technical problems while accessing to the course web site. This was one of the very important barriers as it was indicated by Muilenburga and Bergeb (2005). Another

important finding was that even though the preservice teachers' perceived technology competencies and readiness for online learning were at convenient levels to take an online course, they prefer an orientation prior to blended course. As Warner et al. (1998, cited in Smith, Murphy and Mahoney, 2003) mentioned that student's confidence in using new tools is important in benefiting from the environment. Therefore, it is essential to make sure that online learners are competent in using the online system. Another important finding of this study is the positive correlation between perceived technology competencies and beliefs, online readiness, and online learning experiences and preferences. This finding is inline with the related literature as indicated by Muilenburga and Bergeb (2005), Warner et al. (1998, cited in Smith, Murphy and Mahoney, 2003) and Smith (1999, cited in Smith, Murphy and Mahoney, 2003). Even though the preservice teachers found the online part of the blended course effective and beneficial, they prefer blended course to fully online course, and prefer face-to-face communication to online communication.

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