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Ministry of Higher Education
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**The Effect of Using Technology on
the Levels of Satisfaction of Pre-service
EFL Student Teachers**

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Key Words: Integrating Technology into Education, Satisfaction, Course Content, Instructional Strategies, Communication Tools, Received Feedback, and EFL Student Teachers.

Abstract

This study investigated the effects of e-course instruction on female pre-service EFL student teachers in the College of Education at Taibah University in terms of levels of satisfaction with: course content, instructional strategies, communication tools, and received feedback.

The study sample consisted of 40 female pre-service EFL student teachers who were assigned to control and treatment groups based on their responses to demographic information sheet. Control group participants (n=20) received traditional face-to-face classroom instruction, and treatment group participants (n=20) received e-course instruction. The study instruments included a rubric for evaluating a class-related academic website; and a survey for measuring learner levels of satisfaction (i.e., course content, instructional strategies, communication tools, and received feedback). Results of the scatter-plot graphs and the General Linear Model Univariate analysis indicated adequate sample size and selection, normality population distribution, moderate linearity, and similar relationships between the covariate and the dependent variable for both study groups. The inferential statistics Analysis of Covariance (ANCOVA) tests were selected at alpha level of 0.05 of significance.

The results of ANCOVA tests reveal that the effect of the e-course instruction on learner perceptions of all levels of satisfaction were statistically significant in favor of the treatment group except for the effect of the e-course instruction on learner satisfaction with received feedback. Moreover, the results of Eta Squared also indicate large effect size values of the e-course instruction on only three dependent variables associated with learner perceptions of satisfaction with: course content, instructional strategies, and communication tools.

Recommendations based on these findings include: (a) pre-service student teachers should be required to take some online teacher training courses so as to encourage the use of online educational delivery systems, (b) formal courses that prepare pre-service student teachers to use online instructional practices should be added to teacher training curriculum, and (c) higher education institutions should use learner satisfaction data to make positive changes in campus environments in order to create settings that are more conducive to learner development. In this sense, satisfaction may be considered indicators of higher education institutions' responsiveness to learner needs and a measure of effectiveness, success, and vitality.

فاعلية استخدام التقنية على مستويات الرضا لدى الطالبات المعلمات بقسم اللغة الإنجليزية

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الكلمات المفتاحية: استخدام التقنية في التعليم، مستويات الرضا، محتوى المقرر، الإستراتيجيات التدريسية، أدوات التواصل، التغذية الراجعة، الطالبات/المعلمات بقسم اللغة الإنجليزية.

المستخلص:

هدفت الدراسة الحالية إلى التعرف على أثر استخدام مقرر إلكتروني على مستويات الرضا فيما يُعزى إلى المتغيرات التالية: محتوى المقرر، الإستراتيجيات التدريسية، أدوات التواصل، والتغذية الراجعة بين الطالبات/المعلمات بقسم اللغة الإنجليزية بكلية التربية بجامعة طيبة. وبلغت عينة الدراسة (٤٠) طالبة/ معلمة من قسم اللغة الإنجليزية، أُختيرن من خلال إجابتهن على استبانة المعلومات الأولية. دُرست المجموعة الضابطة (٢٠) طالبة بطريقة التدريس التقليدية، بينما دُرست المجموعة التجريبية من خلال المقرر الإلكتروني. صُممت أدوات الدراسة التالية: قائمة لتقويم الموقع الإلكتروني التربوي، استبانة لقياس مستويات الرضا عن محتوى المقرر، والإستراتيجيات التدريسية، وأدوات التواصل، والتغذية الراجعة.

وأظهرت نتائج تمثيل الرسوم البيانية لتخطيطات الانتشار، واختبار تجانس ميل الانحدار مؤائمة فرضيات كلٍّ من حجم العينة، التوزيع الطبيعي والخطّي، وأخيراً العلاقة بين المتغير المصاحب والمتغير التابع لكل مجموعة من المجموعتين. وعليه، أُختير أسلوب تحليل التباين المصاحب (Analysis of Covariance [ANCOVA]) كأحد أساليب الإحصاء الاستدلالي لاستخراج النتائج عند مستوى دلالة (٠,٠٥).

وأظهرت نتائج تحليل التباين المصاحب أن هناك فروق ذات دلالة إحصائية في مستويات الرضا عامة وكذلك مستويات الرضا عن كلٍّ من: محتوى المقرر، والإستراتيجيات التدريسية، وأدوات التواصل لصالح المجموعة التجريبية. ولم تظهر النتائج فروقاً دالة إحصائية لمستوى الرضا عن متغير التغذية الراجعة. وأشارت نتائج مربع إيتا (Eta Squared) إلى زيادة حجم تأثير المقرر الإلكتروني على جميع المتغيرات التابعة المرتبطة بمستويات الرضا ما عدا مستوى الرضا عن التغذية الراجعة.

وأوصت الدراسة إلى ضرورة: (أ) تدريب الطالبات/المعلمات قبل الخدمة من خلال تقديم برامج إعداد متخصصة على شبكة الإنترنت، (ب) كما ينبغي تضمين مناهج برامج إعداد المعلمات/ الطالبات قبل الخدمة دورات متخصصة تهيئهن لهذا النوع من التعلم، (ج) على مؤسسات التعليم العالي أن تستخدم البيانات المحصلة من الدراسات المتعلقة بالتفاعل والرضا لفهم وتطوير وتغيير بيئة التعلم الجامعي؛ وبالتالي إيجاد بيئة تعلمية أكثر ملائمة لتنمية المتعلم. وعليه، يمكن اعتبار التفاعل والرضا مؤشرات تحدد مدى استجابة المؤسسة التعليمية لاحتياجات المتعلمين، ولقياس مدى فاعلية ونجاح وحيوية تلك المؤسسة.

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Introduction

The advent of technology and the widespread adoption of advanced technological measures have led to a new digitalized era both in the academic and business worlds by providing unique alternatives for reaching larger audiences than ever before possible. Technology in this digitalized era is creating new living environments, influencing ways of thinking and knowledge acquisition, and reshaping educational and social aspects of people's lives (Chen, 2005; Ladores, 2005). The past twenty years have witnessed the integration of telecommunication and digital technologies in teaching and learning. Distance education (DE) is one of these global technology advancements (Rosenfeld, 2005).

Distance learning (DL) is much older than might be believed. The late 1800s and early 1900s were filled with correspondence courses. In the early 1900s, radio was the dominant DE medium. Television brought predictions of major changes in education through DL; beginning in the 1970s in the United States, many universities offered courses to large groups of learners via televised lectures, sometimes supplemented by small group meetings with teaching assistants. Some lectures were eventually sent to individual homes via cable television; learners completed assignments in the same manner as correspondence learners. Interactive video created opportunities for learners to ask questions and participate in some discussions, but for most of the 1980s technological limitations dictated a heavy reliance on lectures. In the 1980s, the popularity of personal computers (PCs) opened doors for computer-assisted instruction (CAI) to become a major medium of instructional delivery (Abdullah, 2004). Significant developments in telecommunication technology in the late 1990s, particularly the Internet and World Wide Web (WWW), strongly influenced the way instruction was created and disseminated (Davidson, 2005).

Online education can be defined as an innovative form of DE that delivers instruction to a remote audience, using computer networks as the main medium. The general purposes of online education are to: (a) increase access to education for individuals living far from schools at all levels, (b) remove barriers of time and space, and (c) develop a cost-effective approach to providing interactive learning opportunities for

adults (Jung, 2001). The features of online DE provide rich opportunities for developing flexible, individualized instruction for distance learners, using the Web as a primary delivery mode (Liu, 2003; Calvin, 2005). Learners can use online DE tools to exchange and retrieve information, data, images, audio, and video. In addition, two or more participants can communicate in real time, allowing learners to exchange ideas and interact with one or more peers or instructors at the same time. These changes are providing a new communication platform with more and better options for virtual instructors and learners (Hsu, 2004).

Primarily driven by social change, the transition to online DE is creating a paradigm shift in the way colleges and universities view teaching and learning processes (Levy, 2003).

As new technologies have emerged, higher education institutions have responded by implementing online DE—more recently referred to as e-learning or online learning (Kosak et al., 2004). Ranges of offered courses have also increased, with colleges and universities responding to needs for more flexible and high-quality courses demanded by societal, technological, and educational changes (Sandford, 2002).

The interest and acceptance of distance education in many developed and some developing countries have increased recently due to the development of new information and communication technologies (ICTs), the rapidly wide-spreading use of the Internet, and the need to bring wider opportunities to learners in the form of flexible and open learning systems. For example, online DE enrollments at the University of Maryland, University College, have increased from 4% of the total enrollments in 1997 to 64% in 2002 (approximately 64,000 students) (Wise et al., 2004). Distance education in the State University of New York system has grown from 1995-1996, with 8 courses and 119 students, to over 1,500 courses and 38,000 students in 2000-2001 (Fredericksen et al., 2000). The Illinois Virtual Campus offered 3,000 e-courses in 2004 and has increased their course offerings to over 4,000 in 2006.¹ Similarly, the California Virtual Campus catalog contained 4,400 courses in 2004 (Wise et al., 2004) and has increased the course offerings to approximately 6,400 in 2006.²

In the developing Arab countries, there has recently been an increase in the number of higher education institutions in order to meet demand for education, growing populations, and governmental commitments to make higher education as accessible as possible. However, most of the Arab countries have not yet met the needs of all learners desire to achieve their goals, mostly because the increase in learners' enrollments have not been accompanied by sufficient increase in resources. Moreover, faced with the challenges of providing flexible enrollment and lifelong learning access, higher education institutions in the Arab countries have so far been unable to meet newly emerging societal demands. In response, some countries are adopting radically new visions that rely heavily on modern ICTs—that is, distance education.

¹ <http://www.ivc.illinois.edu>

² <http://www.cvc.edu>

Having succeeded in providing accessible opportunities, it is hoped that online DE can alleviate current pressures on post-secondary institutions in the Arab region (Mohamed, 2005).

In Saudi Arabia, universities are moving forward in their attempts to deliver online DE courses. For example, King Abdulaziz University, King Saud University, King Faisal University, King Fahd University, and Om Al Qura University have integrated online DE programs into their educational systems. According to the stated objectives of two national projects—Watani³ and Aafaq⁴ (the Future Plan for University Education in the Kingdom of Saudi Arabia)—the adoption of online distance learning programs in all Saudi universities and colleges within the next decade has to be implemented.

As one of those higher education institutions, Taibah University in Al Madinah Al Munawwarah is encouraging instructors to design, publish, and teach via websites. One positive step toward achieving this goal is establishing a special “Deanship of Distance Learning” to monitor and support the university’s digital expansion. The instructors are encouraged to design their own educational websites or design their courses using some of the technical systems offered by the University such as “Moodle”⁵ or “Jusur”⁶ systems. One of the first attempts is the design of an academic website meant to serve the pre-and in-service needs of EFL teachers, graduate and post-graduate learners, and all others involved in English language instruction. This effort is part of the growing popularity of online teacher programs at Saudi Universities as well as a response to the substantial increase in the enrollment of pre-service EFL student teachers attending Taibah University.

Educators are working to provide good professional development programs that meet the basic needs of pre-service EFL student teachers. Professional development systems are being designed for the specific purpose of helping pre-service EFL student teachers grow and learn as new paradigms create changes in terms of best practices (Wildner, 1999). To this end, Connors (2006) argues that:

If pre-service EFL student teachers are not given adequate opportunities to learn, they may have little chance of meeting the ever-increasing demands placed upon them. For this reason, professional development for pre-service EFL student teachers is increasingly considered a critical component of improving future generations (p. 6).

Few attempts have been made to study variables that affect instructors and learners' acceptance and adoption of online DE tools and methods, including learners' perception of levels of satisfaction. Since the levels of satisfaction are considered key elements of learners' success and effective teaching in face-to-face classroom settings, research attention needs to be given to the same variables regarding instruction via online courses (Hew & Cheung, 2003; Abdullah, 2004; Blayney & Freeman, 2004).

³ <http://www.watani.org.sa/new/English/A/A1.htm>

⁴ http://aafaq.kfupm.edu.sa/default_en.asp

⁵ <http://moodle.org/login/index.php>

⁶ http://elc.edu.sa/jusur/english/?un_id=

Satisfaction with learning experience has been determined as a critical factor combining the perceived educational value of communication in online environment (Matsuda & Kato, 2003; Weber et al., 2004; Bold, 2005; Fogerson, 2005). Learners' levels of satisfaction are also important in DE technology. In this regard, Stokes (2001) indicated that high levels of learners' satisfaction reflect: (a) learners' willingness to continue in the course, (b) learners' greater motivation, (c) better learning outcomes, and (d) augmented interaction and communication. In contrast, learners who: are not satisfied with various types of technology, have poor instructor utilization of technology and weak delivery of course material using distance learning technology, and/or are given limited feedback, will likely perform poorly in online environment and will seek alternative educational delivery methods.

Statement of the Problem

Based on what had been mentioned above concerning the importance of satisfaction in classroom setting, the researcher, as an instructor in the College of Education, had noticed the weakness of undergraduate EFL student teachers, more specifically the seventh and eighth levels, in interacting and communicating with their instructors and peers inside the language classrooms. Although pre-service EFL student teachers -at these levels- are about to start their future career as teachers in the intermediate and secondary school levels, most of them face some sort of difficulties in communication. They appear reluctant to participate in course content and unwilling to take the challenge to interact by asking questions, giving comments, sharing ideas, and responding or giving feedback. The researcher also noticed that the absence of oral communication in the classroom reflects the dissatisfaction from the part of the learners that may be a result of their fear of instructor; peer frequent interruption; shyness of committing mistakes in pronunciation and language structure; lack of timely feedback from the instructor and classmates; and/or lack of encouragement to participate in classroom activities.

In order to support her observation, the researcher explored the pre-service EFL student teachers' perceptions of the satisfaction through a survey questionnaire that contains 4 questions about their personal opinions of their face-to-face learning environments. The questions explore their satisfaction with the course content, instructional strategies, amount of communication, and the received feedback.

A pilot study was conducted with 239 participants in two sections of the *Methods of Teaching English (I)* course. The participants were assumed to be similar to the sample population of the study. They were in the sixth level (n=222) and seventh level (n=17) students. Their grade point average (GPA) is ranging from A students (n=36), B students (n=91), C students (n=100), and D students were only (n=12).

When estimating the percentage of the questions regarding their perception of face-to-face classroom satisfaction, the participants reported their dissatisfaction with the stated objectives, supplementary materials, activities associated with the course content delivered by the instructors. Their

responses indicated 27.2% were satisfied, 45.2% were dissatisfied, and 27.6% were satisfied to some extent with the fourth question. Concerning satisfaction with instructions, procedures, techniques, and activities used by the instructor to introduce the course content, the questionnaire results reported that 30.5% of the participants were satisfied, 43.5% were dissatisfied, and 25.9% were satisfied to some extent with the question. Satisfaction with the amount of communication with peers and instructor in a form of dialogues, discussions, and posing questions indicated that 28.9% of the participants were satisfied, 40.2% were dissatisfied, and 31% were satisfied to some extent with the question. The last question was regarding learners' satisfaction with the received feedback on assignments, quizzes, classroom activities, and midterm exams reported that 30.1% of the participants were satisfied, 40.6% were dissatisfied, and 29.3% were satisfied to some extent with the question. The questions 4-7 reflect learners' satisfaction with the content, the instructional strategies, amount of communication, and the received personalized and/or group feedback. Based on the percentage of the responses, it seems that the pre-service EFL student teachers were dissatisfied with their face-to-face learning environments.

Hence, the current proposed research investigated the effects of an e-course setting on the levels of satisfaction of female pre-service EFL student teachers in the College of Education at Taibah University in Al Madinah Al Munawwarah.

Purposes of the Study

Based on the above discussion and background, the primary purpose of the present research is to investigate the effect of e-course on these four levels of satisfaction (a) course content, (b) instructional strategies, (c) communication tools, and (d) received feedback as perceived by female pre-service EFL student teachers in face-to-face and e-course treatments.

Research Questions

In harmony with the purpose of the study, the following main research question was posed:

- 1. What are the effects of e-course instruction on female pre-service EFL student teachers who are primarily taught in a face-to-face classroom setting and those primarily taught in an e-course setting regarding their levels of satisfaction?**

Four sub-questions were derived from the main research question:

- 1.1. What are the effects of e-course instruction on female pre-service EFL student teachers who are primarily taught in a face-to-face classroom setting and those primarily taught in an e- setting course regarding their satisfaction with course content?**

- 1.2. What are the effects of e-course instruction on female pre-service EFL student teachers who are primarily taught in a face-to-face classroom setting and those primarily taught in an e-course setting regarding their satisfaction with instructional strategies?
- 1.3. What are the effects of e-course instruction on female pre-service EFL student teachers who are primarily taught in a face-to-face classroom setting and those primarily taught in an e-course setting regarding their satisfaction with communication tools?
- 1.4. What are the effects of e-course instruction on female pre-service EFL student teachers who are primarily taught in a face-to-face classroom setting and those primarily taught in an e-course setting regarding their satisfaction with received feedback?

Significance of the Study

The significance of the present research appeared in its attempts to:

1. Provide insights into the perception of levels of satisfaction variables that will help Saudi educators understand how female pre-service EFL student teachers indicate their satisfaction.
2. Provide knowledge and experiences to be used for making decisions regarding the current and future online education programs and courses at Taibah University. The results of the study may also be useful for establishing similar e-courses at other Saudi universities.
3. Help online instructors make informed decisions to facilitate online distance learning and promote learners' perception of levels of satisfaction with online settings.
4. Contribute to the existing body of research and provide a theoretical source for investigating levels of satisfaction in regard to online pre-service student teacher preparation programs.

Definition of Terms

a. Online Course/E-Course

According to [Abdullah \(2004\)](#) the term refers to "at one end of the spectrum of "Web-enhanced" these include classroom-based teaching supplemented by lecture notes posted on a Website or by electronic communication such as e-mail. At the other end of the spectrum, materials may be made available and interactions occur exclusively through networked technologies" (p. 9).

In the current study, the terms online course and e-course will be used interchangeably to designate courses offered online in which enrolled female pre-service EFL student teachers interact with the instructor and peers. E-course is the course offered to female pre-service EFL student teachers and include classroom-based content posted online through asynchronous (academic website, e-mail, and discussion group) and synchronous (text/voice chat room).

b. Learner Satisfaction/Online Satisfaction

Shockley (2005) refers satisfaction to "an individual's perceived comfort level and feelings regarding the effectiveness of web-based course environments" (p. 6).

In the current study, the term satisfaction refers to the levels of satisfaction of online DE and face-to-face female pre-service EFL student teachers regarding the following variables: (a) course content, (b) instructional strategies, (c) communication tools, and (c) received feedback. In both settings, similar variables were examined by means of a questionnaire designed for this specific purpose.

c. Course Content

Calvin (2005) defines course content as the term that includes "course learning objectives, course goals, content themes, teaching methods, illustrations, work quality expectations of the instructor, learner participation and attendance requirements, assignments, tasks, text, planned interactions, pedagogical framework for the course design, modeling and provision of appropriate cognitive strategies for the course, assessment and evaluation, technical assistance available, and the course environment or medium" (p.11).

The researcher defines face-to-face content for the current study setting as course goals, course learning objectives, content topics, teaching methods, planned instructional strategies, assignments, and tests. The face-to-face content course content is to be captured in text-based format (a textbook) and delivered via the instructor in face-to-face classroom. It is designed to help learners develop proficiency in a skill or gain knowledge about: *Teaching of Vocabulary* and *Teaching of Grammar*.

d. Instructional strategies

Barrera and Liu (2005) define instructional strategy as "a set of systematic activities used by a teacher that contains explicit steps to achieve a specific student outcome. This set of steps must be replicable by another individual in order to be considered a strategy" (p.6).

The researcher of this study defines instructional strategies operationally as teaching/learning techniques. Instructional strategies include pre-instructional activities, presentation of information, practice, application of activities, feedback, and assessments. They are based on stated goals as well as the course content to be taught in order to systematically move all learners toward clearly defined learning objectives and expected outcomes.

e. Communication tools

Williams & Debren (2006) in their presentation of *Lots of cool communication tools*, state that "in a digital world, students need to learn to use the tools to master the learning skills that are essential to everyday life and workplace productivity....use digital technology and communication tools to access, manage, integrate and evaluate information; construct new knowledge; and communicate with others in order to participate effectively in society" (p. 1).

According to the researcher of the current study, communication tools are either asynchronous or synchronous. They depend on the classroom setting. For example, asynchronous communication tools include academic website, e-mail, and discussion group; while synchronous communication tools include text/voice chat room. The aims of communication tools are to enable fluid communication among distributed female pre-service EFL student teachers and help them to engage together in interactive learning environment at both e-course and face-to-face settings.

f. Received feedback

According to [Richards et al. \(1999\)](#), in their *Dictionary of Language Teaching & Applied Linguistics*, define feedback as "comments or information learners receive on the success of a learning task, either from other learners" (p.137).

The current study considers feedback as an interaction between the learners and the instructor or among the learners themselves, personalized or group, oral or written, asynchronously or synchronously which aims at increasing the quality of the online DE experience.

Review of Literature

1. Online Learning Satisfaction

Learner satisfaction influences learner motivation, which is an important psychological factor in learner success ([Bolliger & Martindale, 2004](#)). As the use of digital technologies in university courses increases and earns the respect of learners, educational institutions, and investors ([Thurmond \(2003\)](#)), learner satisfaction has emerged as a key issue, since the combination of satisfaction and blended learning serves as the foundation for learner acceptance and repeated use ([Hara & Kling, 1999](#)). As [Lorenzo and Moore \(2002, p. 4\)](#) note, "a vital aspect of any education is to ensure that learners are satisfied with their educational experience. Online learners, like customers, are satisfied when they receive responsive, timely, and personalized services and support, along with high-quality learning outcomes."

Since learner satisfaction addresses the effectiveness of online DE programs, the factor should be included in all program evaluations to assist instructors and program administrators in their assessments of learning applications ([Hao, 2004; Williams, 2004](#)).

A review of the literature identified individual studies on this topic, but failed to uncover theories aimed at explaining learner satisfaction. [Johnson et al. \(2000\)](#) compared grades, learner satisfaction, instructor ratings, and course quality between the online and face-to-face classroom versions of the same graduate level course, and found similar positive ratings for both. Learner satisfaction and instructor support ratings were marginally higher among the face-to-face classroom learners, but not at a statistically significant level. [Lim \(2001\)](#) found a relationship between computer self-efficacy and satisfaction among

adult online DE learners. For the purpose of creating a predictive model for adult learner satisfaction and future participation in online DE, Lim examined years of data on computer use, frequency of computer use, computer training, Internet experience in classes, and participation in e-course workshops as measures of computer and Web experience. The results indicate statistically significant relationships between computer self-efficacy and course satisfaction—a negative correlation between frequency of computer use and workshop participation and a positive correlation between computer use and Internet experience. In the overall predictive model, computer self-efficacy had the highest linear correlation with intent to take future e-courses. Lim's study indicates a general association between computer experience and/or previous experience with e-courses and overall satisfaction with online DE among adult learners. However, the results do not clearly state if computer and Web experience correlate to satisfaction with content that is learned in a course.

DiBiase and Dutton (2004) analyzed instructor time input for eight courses over a three and a half year period and found evidence showing a strong correlation between enrollment and the amount of instructor effort, with ramifications for learner satisfaction. The researchers found that instructor effort dropped by 12% in response to a three-fold increase in course enrollment. To test their assumption of a corresponding decrease in learner satisfaction, they compared satisfaction data from learners in each of the eight courses at the end of three semesters. Results from an analysis of course evaluation data demonstrated no discernable decrease in learner satisfaction as long as increased enrollments were matched by increased efficiency. DiBiase and Dutton also observed that the efficiency and scalability of an instructor-led, asynchronous e-course varies with the pedagogical approach employed, level of support provided, stability of the subject matter, and knowledge and experience of the instructor.

During a three-year quasi-experimental study of three Masters computing courses, Connolly et al. (2007) investigated the extent to which teaching and learning were enhanced when an online format was used instead of a face-to-face classroom structure. Key issues were finding observable differences in (a) learner performance as measured by end-of-module grades/marks; (b) coursework and exam performance in technically-oriented modules; and (c) dropout rates, learner satisfaction and faculty satisfaction. Results from an analysis of data collected for 4,684 module enrolments, 269 online learners, 796 part-time learners, and 3,619 full-time learners show that the online learners consistently performed better than the face-to-face learners and the part-term learners outperformed the full-time learners. Results from a qualitative analysis of learner and staff perceptions indicate that both groups were satisfied with online content delivery. The dropout rate for online learners was lower than for face-to-face classroom learners; no significant difference in performance was noted between the theoretical and practical study components.

2. Online versus Face-to-Face Learning Satisfaction

No standard exists for comparing online DE and face-to-face instruction in terms of learner satisfaction. From the literature it appears that comparisons are generally made based on the particular interests of the institution or researcher in question. The results of individual studies are summarized below.

[Serban and Fleming \(2000\)](#) conducted a study on behalf of Santa Barbara Community College (SBCC) to measure learner opinions regarding their experiences with e-courses, and found that most learners believed that SBCC e-course delivery was highly responsive to their needs and preferences. Learners generally praised the format flexibility, course quality, and instructor feedback. Over two-thirds (68%) of the respondents indicated that they liked e-courses equally or better than on-campus classes, 73% indicated that they would take another online class, and 21% were inclined but not positive that they would repeat the online format. At the University of Central Florida, [Sole and Lindquist \(2001\)](#) conducted a study to determine learner perceptions and satisfaction with online coursework, working with a hypothesis that “the use of Web-based strategies would result in a high level of connectedness and satisfaction” (p.134). Responses to a questionnaire administered to 113 learners in a critical care elective course following their final examination indicate that the learners in the face-to-face classroom section were more satisfied with the course than their online counterparts, but course satisfaction ratings were high for both groups.

[Maki and Maki \(2002\)](#) investigated variables that might affect learning and satisfaction in online and lecture versions of introductory psychology courses, and found that year in college (i.e., freshman to senior), major, and learner personality factors were accurate predictors of performance in both online and classroom courses. Differences among instructors were stronger predictors of performance in lecture courses than in e-courses. Enjoyment of class discussion was negatively related to e-course performance. Variables shown to have a positive association with course satisfaction in both course formats included smaller workloads, better scores on examinations, a preference for working independently, and knowing what to expect on tests. Instructor characteristics and enjoyment of class discussions influenced satisfaction among face-to-face learners but not online learners.

According to a report from the U.S. National Center for Education Statistics (NCES), 22.7% of American undergraduates who participate in online DE courses report being more satisfied with those courses than with face-to-face classroom courses, 47% report liking both online DE and face-to-face courses equally, and 30% were less satisfied with their online DE options. According to these statistics, work is required to improve the quality of online DE courses and programs. The report authors believe such improvements and greater satisfaction require a stronger focus on learner needs ([Creighton & Hudson, 2002](#)).

[Richardson and Swan \(2003\)](#) studied the role of social presence in online DE environments and its relationship to learner perceptions of learning and satisfaction with instructors. The participants were 97 participants who had completed online DE courses at Empire State College in the spring of 2000.

Responses to an end-of-semester course survey indicate that participants with high overall perceptions of social presence also scored high in terms of perceived learning and satisfaction with their instructors. Those same social presence perceptions also made significant contributions to a predictor equation for overall learning perceptions. Gender accounted for some of the variability in perceptions of social presence; age and number of college credits earned did not account for any of the variability.

In summary, the studies reviewed in this section indicate that satisfied online DE learners learn more easily, are less likely to drop out of their classes for non-academic reasons, are more likely to take additional e-courses, and recommend online DE course to others.

3. Factors Affecting Online Learner Satisfaction

Factors identified as affecting learner satisfaction with online learning experiences can be placed in categories such as instructor/instruction, infrastructure, support system, content and assessment quality, and peer support (Hara & Kling, 1999; Carr, 2000; Bower, 2001). The current study has claimed responsibility for other variables related to the level of satisfaction that need to be further examined to determine the effectiveness of online DE to those factors which represent the level of satisfaction. The following sections contain discussions of four variables that will serve as the focus of this study regarding online learner satisfaction: *course content*, *instructional strategies*, *communication tools*, and *received feedback*.

a. Course Content

Effective course content helps learners develop skill proficiency or gain knowledge about a given topic. Content consists of course goals and learning objectives, content topics, teaching methods, and assignments. It can be captured digitally and disseminated to learners via different electronic formats. In this study, the term *course content* will be used interchangeably with *online/e-course content*. *Traditional course content* refers to text-based formats such as books, handouts, or information delivered to learners in face-to-face classroom environments.

Bruce et al. (2000) note that successful deployment of content in an online learning course often requires the use of supplementary materials, special server configurations, and software that gives learners access to course content. Thus, e-course components are dictated by instructor decisions during content development—that is, choice of authoring software, special features, and strategies to track learner progress. Thurmond and Wambach (2004) suggest that clarity, simplicity, and repetitiveness in course content design may influence learner satisfaction, especially in terms of compensating for a lack of face-to-face meetings.

b. Instructional Strategies

Wang & Wang (2004) define learning environments as "complex and dynamic system[s] where people apply certain strategies and use available resources to achieve pre-determined learning goals" (p.

1443). Based on this definition, all environments have four core components: learning goals, people, resources, and strategies. These components work together to form a dynamic learning system; in a technology-based learning environment, a technology component is added to this list. As a component of a learning community, strategy refers to "any intellectual effort to use various skills, tactics and resources available consciously to achieve established goals both effectively and efficiently. Strategies may include learning strategies, instructional strategies, and management strategies" (1443). Wang and Wang add that for any particular learning activity, one or more strategies can be applied to support learning based on learner needs, interests, and preferred learning style.

Instructional strategies can include pre-instructional activities, information presentation, activities for practice and application, feedback, and assessment. All of these are based on the goal of systematically moving all learners toward clearly defined learning objectives and desired outcomes.

Online learning environments allow for a full range of interactive methodologies, and instructors are finding that in adapting their courses to online models, they are paying more attention to instructional design. As a result, in terms of quality, quantity, and patterns, learner interaction improves and satisfaction levels increase (Merrienboer, 2005; Chen, 2007). Instructors are also discovering that many online instructional strategies were not specifically developed for online learning, but instead represent online versions of face-to-face classroom strategies. In some cases these strategies are not appropriate for online educational objectives, since classroom instructors usually have greater control on information being presented. In e-courses, learners are no longer totally dependent on instructors for knowledge, and this shift requires pedagogical changes in terms of facilitating learner movement toward mastery (Walls, 2005).

c.Communication Tools

Asynchronous and synchronous CMC modes offer different capabilities for enhancing satisfaction in online learning. It seems the use of asynchronous online mode where the ability to access and communicate can meet many of the learners' needs is attainable (Hisham et al., 2004; Lim & Sudweeks, 2006). While the use of synchronous online mode seems difficult as it is expensive and needs well-developed infrastructure to transfer huge amount of data, audio and video streams simultaneously to learners at a distance (Dabaj & Isman, 2004).

Few researchers, however, have addressed online DE communication patterns in relation to learner's satisfaction. For example, Rivera and Rice (2002) conduct a useful experience that revealed several problem areas with the course delivery platform and web materials, which appear ultimately, affected the learners' level of satisfaction with the e-course. Results related to the WWW delivered course found that improvement is necessary from both the learners' and instructor's perspective. It is clear that the delivery

problems, lack of support, and the learner's prior mastery of the Internet contributed to the lower satisfaction levels.

On the other hand, other studies related to the effective use of synchronous communication tools was conducted. For example, [Guzley et al. \(2001\)](#) conducted a study in which group members were in separate locations, interacting via synchronous audio/ visual computer channels. Findings indicate an overall high level of perceived effectiveness and satisfaction with the instructional mode.

Internet-based video conferencing technology was used to support pre-service student teachers' observations of and interactions with diverse K-12 classrooms at a distance. [Lehman and Phillion \(2004\)](#) indicate that by using this technology, future teachers learned to see technology as a tool that enabled them to communicate with learners who may have had little experience of in the past. Using video conferencing in this manner is a convenient way to develop pre-service student teachers' technical skills while achieving other objectives of the teacher education program.

d. Received Feedback

In face-to-face classroom-centered courses, instructions, content, and a large portion of feedback are given orally, meaning the instructor spends less time formulating written responses. [Palloff and Pratt \(2003\)](#) note one important aspect of oral feedback: it can be communicated in a short period of time. In contrast, online class instructors must communicate their thoughts concisely via the written word, in a manner that allows all learners to clearly understand what is being communicated. This is not always an easy task, and the time commitment can be extensive ([Hara & Kling, 2000](#)), especially for instructors who truly want to provide personal, specific, and timely feedback.

[Kielty's \(2004\)](#) suggestions for improving online feedback include: (a) making detailed comments on written assignments that refer to additional sources for supplementary information; (b) returning assignments without delay; (c) making note of learners who do not participate during the first session and contacting them individually; and (d) integrating a variety of delivery systems for interaction and feedback, including one-on-one conference calls, e-mail, and computer conferencing. To this list [Ertmer et al. \(2007\)](#) add the use of peer feedback as an instructional strategy. [Hara and Kling \(2000\)](#) emphasize the need for both instructors and learners to create a "strong social presence in a written medium" (p.579), which requires time and expressive ability. Some learners may require training in this skill.

[O'Shea \(2008\)](#) found that the learners feel that the audio feedback is more useful, more personalizing, and more effective in conveying the tone and tenor of the feedback. In addition, learners feel that the nature of the feedback "personalizes" the person giving the feedback. In line with the findings of [O'Shea \(2008\)](#), the results of [Ice et al. \(2008\)](#) revealed extremely high learner satisfaction with embedded asynchronous audio feedback as compared to asynchronous text only feedback.

The present study analyzes feedback types according to specific learning and teaching environments. For instance, whether information is shared asynchronously or synchronously and the specific type of delivery mode. Other feedback-related factors to be addressed include sender and receiver type (instructor vs. peers), approach (personalized vs. collective), time (delayed vs. immediate), and style (oral vs. written).

Research Methodology

1. Subjects and Sampling

The data gathered via the demographic information sheet supported the use of a criterion sampling technique to identify students who could be placed in the treatment group—that is, students who owned computers with certain hardware and software specifications, who had sufficient Internet experience, and who had expressed a strong interest in participating in the research (i.e., signed an informed consent form). Of the 30 students who were eligible to be in the treatment group, 20 students did sign the forms and were considered the treatment group participants. Data on selected characteristics for the 20 students who enrolled in the treatment group are shown in [Table 1](#).

Table (1)
Characteristics of Computer & Internet Experience of the Treatment Group

Computer & Internet Experience		N=20	Percentage	Total	
				N	%
Taken a Computer Training Course	Never	11	55%	20	100%
	Only 1	6	30%		
	Only 2	2	10%		
	More than 2	1	5%		
Computer Experience	Intermediate	8	40%	20	100%
	Advanced	11	55%		
	Expert	1	5%		
Speed of DSL	256 KB	7	35%	20	100%
	512 KB	6	30%		
	1 MB or faster	7	35%		

While the demographic information sheet reduced the number of the eligible participants in the treatment group, the researcher took into consideration the need to form two homogenous groups in terms of grade level and GPA. To achieve this goal, the researcher selected 20 students for the control group from all other members of the accessible population (n=44) primarily based on their grade level and GPA. The 44 students would be taught in face-to-face classrooms and only the selected 20 students would respond to the pre and post research instrument.

The selected participants in the treatment and control groups were 15 students who belong to class sections A and B (taught by the one instructor) and 5 students were belong to section C (taught by another instructor). This procedure eliminated potential bias due to the effects of instructor personality.

Table (2)

Background Information for both Treatment & Control Groups

Grade Level	Treatment Group		Control Group		GPA	Treatment Group		Control Group	
	N	%	N	%		N	%	N	%
5 th	11	55%	11	55%	A	5	25%	5	25%
6 th	2	10%	2	10%	B	8	40%	7	35%
7 th	6	30%	6	30%	C	6	30%	7	35%
8 th	1	5%	1	5%	D	1	5%	1	5%

The data in Table 2 confirm the high level of homogeneity across the control and treatment groups. Each group had 20 participants, and each group had identical numbers of students at grade levels 5, 6, 7 and 8 (11, 2, 6 and 1, respectively). Each group had nearly identical numbers at the four GPA levels of A, B, C and D: 5, 8, 6 and 1 for the treatment group and 5, 7, 7 and 1 for the control group, respectively.

2. Instrumentation

In this research, a combination of asynchronous and synchronous delivery modes were used to present the e-course content, supplementary materials, learning activities, classroom discussions, and feedback. Although there is some evidence based on the review of literature regarding the type of effect that each delivery mode may have on the teaching/ learning process, still a combination of them makes the educational setting worthwhile. For asynchronous delivery modes, an academic website, e-mail, and a discussion group were used. Moreover, as a synchronous delivery mode, a text/voice chat room was used.

3. The Selection of Website Evaluation Rubric

The researchers designed a website evaluation rubric to evaluate the academic website used in this study. The rubric was based on information presented in Liu & Ku (2003), Bendus (2005), and Shon & Lee (2006). Its eleven variable sets were designed to gather data on the appropriateness of the website for the study goals. Item responses were given as 1 for “yes,” 2 for “no,” and 3 for “not applicable.” The main rubric variables were *usability* (15 items), *aesthetic features* (12 items), *accessibility* (11 items), *objectivity* (9 items), *credibility* (5 items), *accuracy, currency and audience* (4 items each), *support and feedback* (3 items each), and *interactivity* (2 items). A final yes/no question asked the evaluators whether they would recommend the Website for use by the instructor in the study.

4. Validity of Website Evaluation Rubric

The Website evaluation rubric was validated by nine raters responded to the request to evaluate the website in terms of reliability as a source of accurate information associated with the research objectives. The researcher made modifications to some web pages in response to their feedback. For the final question on their overall impression of the website, the nine raters (100%) unanimously stated that it was suitable for online distance education.

5. Pilot Study

The pilot study was conducted with 21 female pre-service EFL student teachers in the seventh grade enrolled in a six-hour online course over a two-week period. Procedures for administrating the pilot survey were similar to those would be applied during the actual study.

6. Satisfaction Survey

A satisfaction survey was developed to measure changes in the participants' levels of satisfaction with integrating technologies in ELT classroom. Survey statements for this specific study were developed based on a review of [Mourtos & McMullin \(2001\)](#), [Stokes \(2001\)](#), [Irons et al. \(2002\)](#), and [Lin & Overbaugh \(2007\)](#) and the teaching experiences of the researcher. All statements were phrased in positive terms. The survey's 40 items examined the effects of e-course content delivery on satisfaction levels among the treatment group participants. The satisfaction survey was divided into four sections: course content (items 1-10), instructional strategies (items 11-20), communication tools (items 21-30), and received feedback (items 31-40). Participants were asked to rate each item using a five-point Likert type scale: score (1) referred to "Strongly Dissatisfied", score (2) referred to "Dissatisfied", score (3) referred to "Neutral", score (4) referred to "Satisfied" and finally, score (5) referred to "Strongly Satisfied" value.

7. Validity & Reliability of Satisfaction Survey

Face and content validity for the demographic information sheet and the satisfaction survey were established by a panel of fourteen experts chosen based on their knowledge and experience in the field of TEFL, research design, and educational technology. The panel consisted of eleven TEFL content experts, two language experts, and one methodology expert.

Reliability for the survey was confirmed by the pilot study data, with Cronbach's alpha used as a measure of internal consistency for all survey sections by using Statistical Package for the Social Sciences [SPSS] V.16. Pilot study respondents were asked to rate their perceptions of satisfaction with the online experience. According to their feedback, Cronbach's alpha coefficients were (.83) for course content, (.93) for instructional strategies, (.88) for communication tools, and (.88) for received feedback. Finally, Cronbach's alpha coefficients was (.96) for the overall satisfaction survey.

8. Experiment Description

The study experiment was conducted in two stages. In the first "pre-treatment procedures" stage, online participants were asked to complete three tasks to ensure that they were properly registered in the online section of the course, and learners in both the control and treatment groups were asked to complete the satisfaction pre-survey. The second stage consisted of "classroom procedure design", in which the three-week instructional period was described in detail.

9. Pre-Treatment Procedures

The research experiment was conducted in two stages. The first "pre-treatment procedures" stage was started in which meetings were held with the learners enrolling in the course *Methods of Teaching English as a Foreign Language (1)* in all the three sections to explain the research experiment in detail. Learners were informed of the two chapters that would be taught as a part of the research experiment, and the duration of the study. The online learners were asked to begin the online registration process through following the given procedures.

10. Course Content, Activities & Instructional Strategies

The content of the course "*Methods of Teaching English as a Foreign Language (1)*" aims at helping future teachers who will implement Saudi Arabia's English curriculum in intermediate and secondary schools. The pre-service EFL student teachers in the control and treatment groups use the same textbook⁷ and practice the same exercises, drills, and procedures. As a result, content, activities, supplementary materials, assessment, feedback, and classroom instructional strategies were essentially indistinguishable for the control and treatment groups except for the content delivery modes and teaching method. The treatment group was taught via using a combination of asynchronous delivery modes (e-mail, an academic website and a discussion group) and synchronous delivery modes (i.e., txt/voice chat room); whereas the control group was taught in face-to-face settings.

To promote active and meaningful learning, the researcher developed a range of learning activities and established ample opportunities for learner collaboration. Classroom activities were designed based on the efforts of [Telg \(2003\)](#), [Buchanan \(2004\)](#), [Richards et al. \(2004\)](#), [Kronic & Ruic-Dimitrijevic \(2007\)](#), and [Dal-Bianco and MacSween \(2008\)](#). Activities focused on two chapters in the course textbook: "*Teaching of Vocabulary*" and "*Teaching of Grammar*", supplementary materials related to each chapter objectives, in-class activities (e.g., presentations, icebreakers, daily discussion statements), home assignments, and one test.

The researcher designed eight PowerPoint presentations consisting of techniques, exercises, and drills for teaching the course content. Detailed in-class activities were designed to enhance and stimulate

⁷ Abu-Ghararah, A. (2005). *Teaching English as a Foreign Language: Procedures, Techniques and Activities* (2nd ed.). Riyadh: Tawbah Library.

learner participation, interaction, and collaboration in both groups. Each presentation started with an "icebreaker" or "openness"⁸ activity and ended with a daily statement,⁹ procedures that promote interactive communication in the form of comments and opinions. Icebreaker activities varied according to topic—for the *Teaching of Vocabulary* chapter the researcher prepared "scrambled letters," "word derivation," and "crossword puzzle" activities. Another activity, "educational songs," gave learners opportunities to practice using new vocabulary items. *Teaching of Grammar* chapter activities included "Am I wrong?"—that is, students were asked to correct grammar errors in presented sentences.

The researcher also designed two types of home assignments to provide practice and to assess learner comprehension of the course content. The first was individual and the second was based on a peer editing strategy in which learners had to complete peer evaluation worksheets. The researcher used variations of individual, pair, and group feedback procedures, and provided both immediate and delayed feedback (written and oral). At the end of the experiment period, a single take-home exam on the course content was prepared and assigned to both control and treatment groups.

Classroom instructional strategies were selected based on reviews of articles by researchers such as Morehead (2001), DeBourgh (2003), Benson (2004), Abdul-Hamid & Lewis (2005), Stoilescu (2005), Junk et al. (2007), and Bacer (2008) to promote learners' interaction. In both online and face-to-face classes, instructional strategies were a mix of instructor demonstrations (i.e., lecture approach), questions and answers, and supplementary materials related to course content. Other instructional strategies in both online and face-to-face environments included learner self-directed reading, learner classroom discussions of course topics, learner presentations of course content, and peer editing.

11. Treatment Procedures

The researcher created two course plans for the "*Teaching of Vocabulary*" and "*Teaching of Grammar*" chapters. Each plan addressed course content, supplementary material and its delivery mode, instructional strategies and learning activities associated with the content. The e-course plan was designed to cover 10 online meetings over a 3-week period, with each online meeting lasting for 1 hour and 10 instructional hours total. The face-to-face course plan covered 6 meetings over 3 weeks, with each section meeting twice per week. The first meeting for each section lasted 110 minutes and the second meeting 60 minutes, for a total of 9 instructional hours per section.

12. Data Collection

⁸ "Activit[ies] designed to ease participants into a course module of instruction" (Richards et al., 2004, p.106).

⁹ Statements spoken or written by famous persons such as William Shakespeare, Allen Strik, Thomas Edison, Albert Einstein, etc.

Data were collected two times during the experiment. As stated above, the participants of the control and treatment groups completed the satisfaction pre-survey. At the end of the three-week instruction period, the researcher distributed the satisfaction post-survey to the online participants via e-mail. Paper copies of the survey were distributed in person to the control group learners in the same day; completed forms were handed in before the end of the class session.

13. Data Analysis

All data were analyzed utilizing the Statistical Package for the Social Sciences (SPSS), version 16. An alpha level of .05 was established a priori as the criteria for statistical significance.

Cronbach's alpha reliability coefficient (α) was used to test the internal consistency of the satisfaction survey. Descriptive statistics were used to organize, summarize, and describe demographic information sheet content. Appropriate statistics such as frequencies and percentages were used. Due to the nature of the research design and collected data, analysis of covariance (ANCOVA) served as the main inferential statistical tool for addressing the research questions and testing the hypotheses.

14. Results

In order to answer research questions, a component ANCOVA of differences in overall satisfaction and the four levels of satisfaction between the control and treatment groups was calculated. As shown in Table 3, the values of Levene's test was not statistically significant except for the received feedback ($p=.79, .65, .11, .18, .09$), which supports an assumption of equality of variance between the two groups.

Table (3)

Summary of ANCOVA Test for the Control and Treatment Groups

Variables	Levene's Test	Control Group		Treatment Group		F	Level of Sig.	Partial Eta Squared	Interaction with Treatment
		M	SD	M	SD				
Overall Satisfaction	.79	2.83	.90	3.94	.92	12.10	.001*	.25	Significant
Satisfaction with Course Content	.65	2.77	1.00	3.78	.97	7.33	.010*	.17	Significant
Satisfaction with Instructional Strategies	.11	2.74	1.12	4.17	1.04	16.47	.000*	.31	Significant
Satisfaction with Communication Tools	.18	2.99	1.17	4.06	1.15	8.15	.007*	.18	Significant
Satisfaction with Received Feedback	.09	2.83	1.15	3.72	1.48	4.07	.051 N.S.	.10	Not Significant

*Significant at the .05 level

N.S.= non significant at the .05 level

According to the results in Table 3, a statistically significant difference in favor of the treatment group ($M=3.94, SD=.92$) existed between the two groups on post-intervention scores for learners perceptions of overall levels of satisfaction at an alpha level of .05 [$F(1,37)= 12.10, p=.001, partial eta squared=.25$]. Moreover, the results in Table 3 indicates a statistically significant difference in favor of the

treatment group ($M=3.78$, $SD=.97$) existed between the two groups on post-intervention scores for learners perceptions of satisfaction with course content at an alpha level of .05 [$F(1,37)= 7.33$, $p=.010$, partial eta squared=.17]. Likewise, a statistically significant difference in favor of the treatment group ($M=4.17$, $SD=1.04$) existed between the two groups on post-intervention scores for learners perceptions of satisfaction with instructional strategies at an alpha level of .05 [$F(1,37)= 16.47$, $p=.000$, partial eta squared=.31] (Table 3). Based on the results of Table 3 a statistically significant difference in favor of the treatment group ($M=4.06$, $SD=1.15$) existed between the two groups on post-intervention scores for learners perceptions of satisfaction with communication tools at an alpha level of .05 [$F(1,37)= 8.15$, $p=.007$, partial eta squared=.18].

The previous results indicate that the female pre-service EFL student teachers who took the e-course had significantly higher scores than those in face-to-face classroom in terms of their perceptions of overall satisfaction with e-course and satisfaction with course content, instructional strategies, and communication tools. Moreover, the partial eta squared value of (.25, .17, .31, .18) indicate strong relationships between the pre and post-intervention scores on learners overall satisfaction and three levels of learner's satisfaction with e-course. Since no interaction occurred between the treatment and covariate (.79, .65, .11, .18, Levene's test), all the variances can be attributed to the e-course instruction.

On the other hand, the results of Table 3 indicate no statistically significant difference existed between the two groups' on post-intervention scores for learners perceptions of satisfaction with received feedback at an alpha level of .05 [$F(1,37)= 4.07$, $p=.051$, partial eta squared=.10]. Moreover, the partial eta squared value of .10 indicates a small relationship between the pre and post-intervention scores on learners satisfaction with received feedback. Although the results indicate no interaction occurred between the treatment and covariate (.09 Levene's test), the small effect size of eta squared (.10) can be attributed to the effects of other variables in addition to the effect of the e-course instruction.

Discussion of Results

In the light of the data analysis and its initial interpretations and results, the following discussion and conclusions can be stated according to (a) the literature review; (b) results from related studies; and (c) the researcher's personal observations during the research experiment period.

1. Overall Satisfaction

As indicated by the ANCOVA test results shown in Table 3, the treatment group learners had higher scores in terms of perceptions of overall satisfaction at a statistically significant level. Those learners also expressed higher levels of their overall satisfaction with the e-course, as indicated by the mean scores and large effect size value. There are several possible explanations for this finding. One possible explanation that might amplify the e-course learners' overall satisfaction is the suitability and clarity of course content

delivered via the academic website (Flash files) and discussion group (PowerPoint presentations), the multiple instructional strategies including lectures, questions & answers sessions, discussions, and summaries, and the use of the asynchronous and synchronous delivery and communication tools to introduce course content, management of e-course learner discussions, and practice content-associated activities. This interpretation finds support from [DiBiase and Dutton \(2004\)](#), who reported that e-course quality, online instructional strategies clarity, and logical material and activity arrangement are essential determinants of learner satisfaction.

However, even though both groups received the same course content, activities, instructional strategies, feedback techniques, and home assignments, and were taught by the same instructor, the face-to-face classroom learners expressed low overall satisfaction with their face-to-face course compared to the e-course learners. One possible explanation of the face-to-face learners dissatisfaction is the difficulties and challenges associated with applying some of the classroom instructional strategies such as peer editing and written group feedback due to time limits might have affected the overall satisfaction of face-to-face classroom learners.

2. Satisfaction with Course Content

The statistical results indicate a statistically significant effect of the e-course instruction on the perceptions of learner satisfaction with course content in favor of the treatment group learners. There are several possible explanations for this finding. The first explanation might be due to a combination of e-course content clarity, quality, adequacy, and suitability of the stated objectives for the determined audience. The clarity and quality of the e-course design entailed opportunities for classroom interaction via e-mails, weekly assignments, discussion group postings, chat room sessions, and presentations, all of which might foster and promote learner satisfaction. This interpretation finds support from [DiBiase and Dutton \(2004\)](#) who provide evidence of the effects of e-course clarity and quality on learner satisfaction with course content.

A second possible explanation for the positive effects of the e-course instruction on course-content satisfaction might be due to the adequacy of e-course length in terms of scheduled online sessions that increased the e-course learners' comfort with online instruction. Finally, the appropriate use of asynchronous and synchronous course delivery modes for e-course knowledge construction might have a positive effect on learner satisfaction with course content. Evidence supporting this possibility is found in [Rivera and Rice \(2002\)](#) and [Hisham et al. \(2004\)](#). These researchers have indicated that online asynchronous and synchronous delivery modes tend to maximize knowledge, support exchanges between learners, and help learners to become more satisfied with course content.

Although the control and treatment groups received the same course content, activities, instructional strategies, and feedback, the face-to-face classroom learners were considerably less satisfied with their course content compared to the e-course learners. Based on the researcher's observations, this might be due to the course content delivery mode (i.e., lecturing) and the limited classroom opportunities for communication and interaction result in minimum contact with the course content, the instructor, and peers and lead to face-to-face learners dissatisfaction.

3. Satisfaction with Instructional Strategies

Statistically higher ANCOVA scores for perceptions of satisfaction with instructional strategies were found in favor of the treatment group (see Table 3). There are two possible explanations for this result. First, it might be due to the clarity of online classroom guidelines, e-course requirements, and assessment techniques that increase learners' comfort and satisfaction. E-course learners were introduced to class guidelines via a "Very Important Points" file that included rules for sent/received e-mail messages, posted materials, text/voice chat room sign-in time, and home assignment deadlines. This explanation finds support from DiBiase and Dutton (2004), who reported imperative relationships between variety, quality, and clarity of online instructional strategies and learner satisfaction. They considered the appropriate use of instructional strategies as an indicator of learner satisfaction with online learning. Another possible explanation is tied to the multiple and continuous opportunities for online instructor to use a variety of classroom techniques such as the use of learner names, equal opportunities given to all learners for participation, directing questions to specific individuals, using a wait-time tactic, and tracking learners' progress.

Little change was found in terms of perceptions of satisfaction with instructional strategies among learners in the control group. Unlike the e-course learners, face-to-face classroom learners had to wait for scheduled class time to be introduced to a variety of classroom techniques which might have affected their level of satisfaction. The equal opportunities given to all learners for participation, directing questions to specific individuals, using a wait-time tactic, and tracking learners' progress were not sufficient due to the limited time of face-to-face scheduled classes.

4. Satisfaction with Communication Tools

The statistical results indicate a statistically significant effect of the e-course instruction on the perceptions of learner satisfaction with the communication tools in favor of the treatment group learners. There are several possible explanations to interpret this finding. First, it might be due to the integration of asynchronous (i.e., academic website, e-mail, and discussion group) and synchronous (i.e., text/voice chat room) technologies into the online classroom to support communication. Both types of communication technologies allowed e-course learners to create a collaborative virtual community in which members

shared their views and beliefs before, during, and after scheduled class sessions. The online community helped learners create a sense of belonging to a common learning effort that might have enhanced their sense of satisfaction.

A second indicator of e-course learners satisfaction with communication tools might be the suitability of the asynchronous and synchronous communication tools in this study in maximizing learning and engaging learners with multiple online resources that match their needs, expectations, and satisfaction.

A third possible explanation for heightened e-course learner satisfaction with communication tools is classroom productivity based on activities perceived as appropriate to asynchronous and synchronous communication technologies. Unless a specific delivery mode was required by the instructor to accomplish a stated objective (e.g., text/voice chat room for topics presentations), e-course learners were allowed to use asynchronous interaction to extend their participation in classroom activities using e-mail messages and discussion group postings. This flexibility might influence learner satisfaction with communication tools. This interpretation is consistent with [Lin and Overbough \(2007\)](#), who found that online learners were more satisfied with asynchronous delivery modes for classroom activities, peer interaction, and given feedback.

5. Satisfaction with Received Feedback

Although the treatment group learners perceived meaningful level of satisfaction with received feedback as they have a slight edge in mean scores over the control group, the results indicate a statistically non-significant effect of the e-course instruction on online learners perceptions of satisfaction with received feedback. One possible explanation for the statistical non-significant result is the lack of time and feedback quantity rather than the formats that were used. E-course learners were introduced to online oral and written feedback, individual and group feedback, written notes on learning progress, peer editing (reviewing), specially designed e-cards, and detailed progress reports (three reports during the three-week instructional period), and encouragement animated GIF images. In other words, the e-course learners might need more feedback than was provided. This interpretation finds support from [Ertmer et al. \(2007\)](#), who found that feedback (especially peer feedback) requires both a good deal of time and high levels of motivation.

Although the face-to-face learners received oral and written feedback on their classroom discussions, participation in classroom activities, and home assignments, mostly in the form of praise and comments on their individual efforts, they also indicated dissatisfaction with the received feedback. In face-to-face classroom, group feedback in written form was difficult when learners failed to hand in their assignments at the same time. Moreover, peer editing assignments were also challenged by time limits: activities had to be completed within the allotted class time, and face-to-face classroom learners were less persuaded than online learners to contact each other before or after class to exchange assignments for editing.

Conclusions

The researcher of this study examined the effects of an e-course on learner perceptions of levels of satisfaction. Some conclusions are derived from the results of the study:

1. The female pre-service EFL student teachers who participated in the e-course used in this research had more positive experiences with the course compared to the study participants in the face-to-face classroom setting. The results strongly suggest that e-course instruction was an effective means of helping learners visualize how to use technology for such purposes as online discussions, course activities, accessing supplementary materials, and assessment.
2. The e-course learners had positive perceptions of aspects regarding satisfaction with course content, instructional strategies, and communication tools. E-course participants indicated much acceptance and comfort on the online instructional delivery modes.
3. Participants of both e-course and face-to-face settings tended to agree there was no statistical difference regarding their perceptions of satisfaction with received feedback.
4. The e-course could be used effectively in a university environment if online female pre-service EFL student teachers are provided with a flexible course design that includes online discussion sessions, activities, supplementary materials, and different assessment techniques. Posting information online apparently was an important factor in maintaining e-course learner engagement. Moreover, it can be used effectively in university classrooms due to the integration of asynchronous and synchronous technologies into online classroom instruction.

Recommendations and Implications

Based on the study findings, the following recommendations and implications were derived:

1. Colleges of education should consider planning and offering online courses in addition to the face-to-face courses, and in the same subjects.
2. Formal courses should be introduced into teacher preparation curricula to prepare pre-service EFL student teachers to integrate ICTs and CMC into their classes.
3. Based on the results of this study, higher education institutions should use satisfaction data to evaluate, improve, and change both online and face-to-face classroom settings in order to make them more effective in terms of learner development. In this sense, learner interaction and satisfaction will serve as indicators of an institution's responsiveness to learner needs and a measure of their effectiveness and vitality.
4. Instructors need to put considerable time and effort into course preparation, guided by expectations of what constitutes good content, instructional strategies, and activities.

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