E-LEARNING VERSUS BLENDED LEARNING IN ACCOUNTING COURSES

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E-learning provides opportunities for developing countries like Egypt that expect a promising future in its educational process from the use of modern information and communication technologies. The aim of this research is to investigate and identify factors that influence the use of e-learning in accounting education and to assess students' attitudes toward and acceptance of accounting e-learning and their perceptions of the effectiveness with respect to quality of instruction, interaction, and learning outcomes compared to traditional classroom instruction. A questionnaire was used to gather data for the research. The results show that there is a positive correlation between student satisfaction and quality of blended learning. In addition, it shows that learning outcomes, higher interaction between student-faculty/student-student, efficiency and effectiveness of instruction and course administration, and student assessment and feedback are positive indicators for the level of quality of blended learning approach.

INTRODUCTION

E-learning was introduced in 1995. It was called Internet-based training, then Web-based training, then online learning, and finally e-learning.

E-learning refers to the use of information and communications technology (ICT) to enhance and support learning and to effect the construction of knowledge with reference to individual experience, practice, and knowledge of the learner. Advances in communication and computer technologies have provided great opportunity for universities and a constant demand in developing countries to improve their teaching and learning processes by incorporate increasing levels of technology into the design and delivery of their curriculum. These new technologies allow for more flexibility in learning and a wider reach for education in many countries worldwide (Salawudeen, 2010).

The Internet is portrayed as an education delivery platform enabling students to receive and interact with educational materials and to engage with teachers and peers in ways that

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previously may have been impossible (Sigala, 2002). E-learning can be self-paced or instructor led and includes media in the form of text, image, animation, and streaming video and audio. The focus is on Internet education and distributed learning; it shifts from a teaching-centered environment to a learning-centered environment; to learners rather than students in a classroom; and to learning facilitators rather than instructors (Jensen & Sandlin, 1997).

E-learning can offer innovative solutions to problems facing conventional education in Egypt. It will ease overloaded classes in Egyptian colleges, high prices of traditional textbooks, transportation problems, need for continued education and specialized training, interaction with the international educational community, and the enhancement of the level of national education.

Business education is a very rewarding area in which to teach; thus, both the opportunities and the threats of Internet-based education should be considered by accounting educators. In addition, students should be encouraged to take responsibility for their own learning and come to higher education with a wide variety of skills, backgrounds and expectations. The overall objective is to develop students' capacity for self-directed learning.

Arab Academy for Science, Technology and Maritime Transport (AASTMT) student perception about e-learning is that it provides a positive learning environment: good teaching, clear goals and standards, appropriate workload, appropriate assessment, emphasis on independence, and the development of critical thinking skills. However, not all of this can be achieved without quality assurance, which is a key factor in the strength, improvement, and quality of higher education.

LITERATURE REVIEW

Poon (2013) investigated the use of blended learning to enhance students' learning experiences from an institutional perspective. Students' experiences and perceptions of blended learning as a delivery method were examined. The study suggests that institutions that intend to implement blended learning must be realistic about the investment of time, effort, and resources required for development and implementation.

Wong (2012) conducted a survey of first-year accounting students to gauge their attitudes toward e-learning and their perceptions of the effectiveness of online options. The results indicate that students strongly support traditional approaches of teaching, as they ranked the delivery of face-to-face lectures as the most effective in assisting their learning and potentially affecting their assessment outcomes, closely followed by face-to-face tutorials.

Chen, Jones, and Moreland (2010) examined online and traditional classroom students' perceptions of instruction and course administration, student-faculty interaction, and student-student interaction based on survey responses. They found that online students perceive high quality instruction and learning, as well as quality interaction with the instructor and other students. Shroff and Vogel (2010) assessed the effect of blended learning on perceived individual student interest, utilizing a blend of online and face-to-face discussions. Results from the study suggest that there was no statistical difference in subjects' perception of interest in both the online and face-to-face discussions utilizing a blended learning approach.

Mohidin, Jaidi, Sang, and Osman (2009) stressed working in groups, as these enabled accounting students to foster greater participation with colleagues, inculcate self-confidence, and enhance leadership ability. Farrell (2008) emphasized teamwork as the best method of preparing accounting students for participation and relevance in the workplace. Jones and Chen (2008) reported that MBA accounting students in blended learning sections had more positive group work experiences and more positive perceptions of instructor feedback compared to students in traditional classroom sections.

Lai (2008) assessed the state of technology readiness of professional accounting students in Malaysia, to examine their level of Internet self-efficacy, to assess their prior computing experience, and to explore if they are satisfied with the professional course that they are pursuing in improving their technology skills.

Kavanagh and Drennan (2007) advised that accounting teaching models should place greater emphasis on students' professional accounting competencies rather than basic traditional accounting skills. Zakaria and Iksan (2007) stress the need for intensive group work and practical assignment as the best method for grooming student accountants.

Grandzol (2004) investigated MBA students' responses to blended learning and traditional delivery methods, but found inconclusive evidence about learning outcomes as measured by examination scores. The students' perceptions in terms of enthusiasm, preparation, grading, and clarity of instruction were similar for the two sections. Vamosi, Pierce, and Slotkin (2004) examined students' satisfaction and perceptions in an undergraduate accounting principles course. Their results suggested that students were less satisfied with distance learning, which they considered less effective in the delivery of course materials compared to learning in a traditional classroom. Hodson (1988) argued in favor of teaching accounting students ability to identify and solve unstructured problems in the business world using multiple information sources.

RESEARCH OBJECTIVES

The study had three main objectives:

1. Identify status and factors that most influence the adoption of e-learning in Egypt.
2. Assess the technology readiness of students at AASTMT—College of Management and Technology to ascertain personal attitudes, perceived usefulness, satisfaction and ease of use of the blended learning system.
3. Investigate the quality of blended learning accounting courses.

RESEARCH HYPOTHESES

The study tested two hypotheses:

1. Students are more satisfied with blended learning courses and perceive them as an appropriate alternative to the traditional face-to-face approach.
2. The achievement of learning outcomes, higher interaction between student-faculty/student-student, efficiency and effectiveness of instruction and course administration, and student assessment and feedback are indicators for the level of quality of blended learning approach.

E-LEARNING AT HIGHER LEARNING INSTITUTIONS

E-Learning Definitions and Approaches

E-learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. E-learning is defined as "E-learning is the delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media. The electronic medium could be the Internet, intranets, extranets, satellite TV, video/audio tape, and/or CD-ROM" (Koohang & Harman, 2005, p. 77).

According to Farhat (2013), there are three e-learning approaches:

1. The synchronous approach involves geographically dispersed interaction of students with instructors and with each other at the same time via the Web.
2. The asynchronous approach allows the participant to complete web-based training without live interaction with the

instructor. It is an embedded learning where information is accessible on an own pace self-help basis, 24/7.

3. The blended method involves the integration of traditional classroom face-to-face learning experiences with online learning experiences (Garrison & Kanuka, 2004).

Advantages of E-Learning

Many benefits can be derived from e-learning (Farhat, 2013; Jensen, & Sandlin, 1997; Omidinia, Masrom, & Selamat, 2011):

- E-learning can help reach out to the masses. Because of global access, the classroom may be the world. Learning service delivery will become more ad hoc and on demand at any time.
- Learners can study wherever they have access to a computer and Internet disintermediation by being able to connect learners and teachers directly.
- It affords the opportunity for information to be stored in various mediums and formats over long periods and accessible over long distances.
- Cultures can be shared through e-learning.
- Electronically mediated education allows matching the goals of specific parts of the curriculum to the available and emerging technology.
- The content can be repeated until the trainee understands it. Computers have infinite patience in teaching that entails drill and repetition.
- Flexibility of e-learning is being learning available for anyone, anytime, anywhere (Broadbent, 2000).
- E-learning provides different media for education delivery (Andersson, 2008). It can make compelling and interesting with multimedia. Technologies offer new dimensions of combining audiovisual aids, animated graphics, et cetera to text for understanding difficult concepts.
- E-learning allows students to experience interactive learning. It promotes collaborative learning, thus resulting in a more engaging and richer learning experience.
- Internet driven, web-based instruction is viewed as cost effective for institutions and time effective for the learner (Dibiase, 2000), since the information can be accessed at any time from any location that has an Internet connection (Annetta, 2004).
- E-learning encourages students to access worldwide information without the constraints of time and location for self-directed learning.
- Different learning styles are addressed and facilitation of learning occurs through varied activities.
- It enables the teaching material to be customized, easily and regularly updated, and instantly available to all learners.
- Successfully completing online or computer-based courses develops critical thinking, builds self-knowledge and self-confidence, and encourages students to take responsibility for their learning.

Disadvantages of E-Learning

E-learning system is not without limitations, which may include:

- It does not require physical attendance, which could reduce social and cultural interaction. Learners may feel isolated or miss social interaction due to lack of teacher feedback, technical difficulties, and time management (Cornell, 1999), since the instructors and instructions are not always available on demand. They may become bored with no interaction (Alkharang & Ghinea, 2013), so it is not suitable for unmotivated or poor learners with poor study habits. In addition, teachers may feel a sense of diminished control over the course (Annetta, 2004). E-learning initiatives require considerable investment in both information technology infrastructure and staff compared to conventional education. Staff and student development for

using new technologies is required (Raimi, Towobola, Kolade, & Fadipe, 2011).
- Learners need to have access to resources such as computers, Internet, and software (Alkharang & Ghinea, 2013). Slow or unreliable Internet connections can be frustrating.
- Some courses can be difficult to simulate. It is important to know the merits and demerits of e-learning to enable learners make decisions with learning software selection as well as online distance learning programs' structure and selection (Aginam, 2006).
- Internet and distance learning requires not only new kinds of resource support and alliances but also new policies and guidelines with respect to continuously evolving intellectual property rights (Jensen & Sandlin, 1997).

Challenges in E-Learning in Developing Countries

There are many ICT implementation challenges that need to be overcome in order to enhance the effectiveness of e-learning in higher learning institutions:

- In developing countries, where educational institutions depend on limited resources of governmental to get and support the infrastructure and determine policies, institutional support plays a crucial role in the acceptance of e-learning (Lubis, Ariffin, Muhamad, Ibrahim, & Wekke, 2009).
- Lack of awareness among students and their parents of the effectiveness of e-learning. Many institutions fail to integrate ICTs into teaching and learning because they are using ICTs to replicate traditional practices, content, and control (Ehrmann, 1995).
- Lack of e-content, inadequate infrastructure, connectivity limitations, and slow downloading creates frustration among learners and affects the ease of learning. Thus, technical support is an important part of the implementation and integration of ICT in education systems. It includes issues like installation, operation, maintenance, network administration, and security (Sife, Lwoga, & Sanga, 2007).
- A large segment of the population is computer illiterate. This hinders the introduction and implementation of e-learning.
- Online learning requires a high degree of self-motivation. Learners may find it difficult to change from the traditional learning mode to the new e-learning mode.
- Most e-learning content is in English, which is not the language of many developing countries such as Egypt.
- Administrative support and commitment of the top management in providing the conditions, such as ICT policy, incentives, and resources are critical to the successful integration of ICTs into teaching and learning processes (Sife et al., 2007). For the integration of ICTs to be effective and sustainable, administrators themselves must be competent in the use of the technology, and they must have a broad understanding of the technical, pedagogical, administrative, financial, and social dimensions of ICTs in education (Dwyer, Ringstaff, & Sandholtz, 1997).
- The processes involved in e-learning courses should be aggregated with the tasks of design, delivery, and assessment often carried out by different teams.
- Course teams should increasing the formalization of the communication and coordination channels by establishing formal and frequent meetings either face to face or online.

Abdelraheem (2006) points out that e-learning faces increased challenges in almost all the universities of the Arab states. These challenges are summarized as follows:

- ICT infrastructure: generally, Arab countries score below world averages on all connectivity indicators.

- Culture, leadership and e-learning strategy: there is a need for a culture that will embrace e-learning with strong leadership.
- Leadership support: efforts toward using technology for learning have not been sustainable because many leaders have underestimated the complexities of the interactions between e-learning and the working environment, and how difficult it is to change people's attitudes about what learning events are and what they can be.
- Local content: there are few relevant applications for the general population. Few organizations use the Web to deliver significant quantities of information or to carry out transactions with their user base.
- Copyright issues: there is a lack of awareness of copyright issues.
- Special skills: there is a need for instructors who have the special skills and talents to deal with e-learning.

Despite the progress and steps taken in Egypt to disseminate information technology in the education sector there are major challenges to the adoption of e-learning:

1. Students may lack the discipline required for self-paced learning. In addition, few in Egypt know what e-learning is really about, or how it can be used to improve the quality and reach of education.
2. The salaries of academic staff are very low, and their workload allocation leaves little time to prepare for teaching, which has a direct impact on the average quality of graduates.
3. The working environment in most faculties does not appear to be conducive either to innovative teaching or to carrying out research. Office spaces are not sufficient or adequately used.
4. The large number of students that a lecturer has to deal with.
5. The share of public spending devoted to the educational sector is low.
6. There is no mandatory retirement age, resulting in more senior faculty members and fewer junior teaching staff to meet the teaching needs of students.
7. The environment at most universities does not foster research productivity or innovation by staff members. The main incentive to initiate and publish research is to fulfill the two formal promotion requirements rather than to produce quality and innovative research.
8. There is no empowerment for students in all educational levels through an active educative system where scholars can choose the courses they would like to study.
9. The financial support for the faculty member, since they find that selling their books is one of most important sources of income and no clear policy about the financing operation of e-learning.
10. Focusing on equipment rather than training, concentrating on copying current education curricula on CDs rather than modifying them to match modern technologies.

According to Shahid (2005), to bring e-learning benefits to Egypt some issues should addressed:

1. A national strategy and plan for e-learning programs where government has to play the lead role in partnership with academicians.
2. In development of ICT infrastructure, both government and the private sector have to contribute, building partnerships and cooperation in the process.
3. Developing expertise in e-learning teaching modalities.
4. Ensuring quality of the e-learning materials, government institutions, and academicians.
5. In developing locally relevant content, local communities, government, and development partners have direct roles to play.
6. Ensuring copyright and intellectual property issues.

7. Promotional campaign to make students fully aware of e-learning regarding technical aspects and technological support services provided to them in the courses in which they enroll.

E-learners should possess the following characteristics:

- Being able to learn independently and view learning positively.
- Being able to make the best use of their time, have self-discipline, and enjoying working alone most of the time.
- Being able to clearly express themselves in writing.
- Having good computer and Internet skills.
- Having the need for knowledge, but incapable of attending traditional training or education.
- Being adept at solving problems.

EGYPT E-LEARNING PROGRESS

In 1999, a new Egyptian Ministry of Communications and Information Technology (MCIT) was established. The ministry's national plan main objective is to create a strong, exportable information technology industry in Egypt. By 2005, the national plan was being revised through the Egyptian Information Society Initiative, it focus on e-learning applications aimed at spreading knowledge and information using electronic means through the Internet.

With regard to e-learning, the framework includes the development of policies to ensure that ICTs are integrated into education and training at all levels, including teacher development, curriculum development, institutional administration and management, and in support of lifelong learning. It involves collaboration between private sector education service providers, network operators, data centers, content providers, local and international companies, and educational institutes. To remove language barriers, content providers are being encouraged to supply Arabic educational content through e-libraries nationally and regionally.

The E-Learning Competence Center was founded in 2004 by the Ministry of Communications and Information Technology in cooperation with Cisco Systems. The E-Learning Competence Center is Egypt's leading organization in e-learning, with a track record of developing and delivering a wide array of state-of-the-art e-learning courses, web communications and e-content; setting and disseminating the quality standards of e-learning; providing best practice research and expert consultancy in e-learning, and engendering the first wave of facilitators and e-trainers into the market.

In addition, in 2009 the National E-Learning Centre (NELC) began to use the e-learning objects system in e-course production. The concept of learning object is based on the use of a full interactive environment, which makes the learning operation more exiting and effective due to the huge number of multimedia, assessment, and other facilities given to the user. The objectives and strategies of the NELC are to provide an e-learning infrastructure and a range of e-learning tools to defined, high quality specifications and provide information, training, and support for staff and students in the use of e-learning tools and facilities in collaboration with the universities.

These centers are able to develop pedagogically sound e-courses that fully utilize the potential of ICTs in an interactive way; the staff of each center include a center director, instructional designer, e-content developers, graphics designers, and subject matter experts. The NELC monitors the progress of the university centers and develops national standards. The university centers are networked with the NELC through the Egyptian Universities Network.

BLENDED LEARNING SYSTEM

E-learning suffers from a lack of social interaction between learners and instructors,

although it may increase access flexibility for students and educators. Blended learning came along to solve this problem. The main component that differentiates blended from face-to-face instruction and e-learning is the use of more than one delivery method, which includes the use of computer-based instruction that can be implemented in a traditional classroom-based format (Shroff & Vogel, 2010).

Blended Learning Definitions

Blended learning is a practical framework that encapsulates a range of effective approaches to learning and teaching. It encourages the use of contemporary technologies to enhance learning, and the development of flexible approaches to course design to enhance student engagement (Queensland University of Technology, 2011). Blended learning has been defined as:

- Learning using a variety of instructional modalities, it is the use of two or more styles of content or context delivery or discovery.
- Blended learning is the effective integration of various learning techniques, technologies, and delivery modalities to meet specific communication, knowledge sharing, and information needs.
- Combining any form of instructional technology with face-to-face instructor-led training such as web-based technology to accomplish an educational goal.

Advantages of Blended Learning Courses

Blended learning is a way of meeting the challenges of tailoring learning and development to the needs of individuals by integrating the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning (Thorne, 2003). Blended learning benefits students and institutions in many ways, such as:

- Greater flexibility of time, responsibility, and control to students for their learning.
- Increased flexibility of access to learning that reinforces the student's autonomy, reflection, and powers of research.
- Ensure continued ease of access to curricular materials and instructional/learning processes.
- Blended courses help instructors to identify best practices to engage students and encourage them to be active participants in the course through developing online learning environments that provide opportunities for interactive and collaborative learning.
- It facilitates improved learning outcomes, effective use of resources, and student satisfaction. Thus, blended courses have higher success rates and lower withdrawal rates than their comparable face-to-face courses and fully online courses.
- It enables students to become more motivated and involved in the learning process by enhancing their commitment and perseverance.
- Creating a community of inquiry beyond the classroom allows learners to connect and collaborate with their peers and to create a learning environment that integrates social, cognitive, and teaching elements in a way that will precipitate and sustain critical reflection and discourse.
- Blended learning focuses on optimizing achievement of learning objectives by applying the “right” learning technologies to match the “right” personal learning style to transfer the “right” skills to the “right” person at the “right” time.

Challenges to Blended Learning Courses

The use of blended learning can pose challenges for students and universities:

- Additional funding needed to support the technological infrastructure and increased demands of advanced learning technologies.

- Students may have difficulty with more sophisticated technologies.
- Students may assume that fewer classes mean less work, and have inadequate time management skills.
- Students may experience a lack of motivation and accepting responsibility for personal learning.
- Students may feel isolated due to the reduced opportunities for social interaction in a face-to-face classroom environment.
- Lack of university support for course design, which involves deciding what course objectives can be achieved through online learning activities, what can best be accomplished in the classroom, and how to integrate these two learning environments.

E-LEARNING OR BLENDED LEARNING ACCOUNTING COURSES

Accounting serves as a language of business for both internal and external communication. The accounting curriculum should enable students to acquire business knowledge to deal with the dynamic business environment (De Lange, Jackling, & Gut, 2006).

Blended learning accounting courses instructional designers should take into their account learning goals and desired outcomes as guides when they describe the links between selection of technological platform, instructional strategies, and the learning objectives of the course.

Accounting educators need to address the expected shift in accountants' skills by developing courses and teaching models that are more interdisciplinary and analytical in their orientation (Howieson, 2003).

Accounting stresses the development of decision-making skills to solve business issues through various activities in which students learn how to identify problems, investigate issues, generate and evaluate possible solutions, and make reasoned decisions.

Accounting education emphasizes the importance of teaching accounting students problem-solving skills. Kavanagh, Hancock, Howieson, Kent, and Tempone (2009) defined problem solving as the ability to apply theory to practice, as well as critical analysis and thinking skills. Mohamed and Lashine (2003) defined critical thinking as the ability to reach justifiable conclusions to questions that cannot be answered definitively and where all relevant information may not be available.

Teaching of accounting should enable students to develop the necessary communication and business skills. Communication skills are concerned with the ability to transfer and receive information easily (Ballantine & Larres, 2009). Students need to develop central skills as self-awareness and the ability to reflect on their experience. Accounting educators should ensure that clear goals and standards allow students to know where they headed and thus encourage them to take responsibility for their own learning (Abraham, 2006).

Interpersonal skills also included in accounting learning are the ability to interact with and influence different kinds of people from different backgrounds and with different value systems, and to negotiate work collaboratively.

Blended learning develops students' academic skills by fostering their self-discipline and self-reliance, more responsibility and independence in learning, helps them learn to trust their own judgment more, and acquire the skill of time management.

A fully distant learning environment affects collaborative accounting learning, as students do not participate as much as in a face-to-face environment. It is important that lecturers listen to students and take account of student perceptions. It is essential to promote a collaborative culture in which students create and share knowledge rather than acquire it passively in isolation. Mohidin et al. (2009) stated that by working in groups, accounting students fostered greater participation, self confidence and leadership ability.

DeSanctis and Gallupe (1987) define group support systems (GSS) as an integrated com-

puter based systems that facilitate the solution of semistructured or unstructured group problems. Group support systems are text-based communication, tools that have positive effects on collaborative work. According to Vogel and Nunamaker (1990), group support systems have been acknowledged as supporting group processes, such as the generation of alternative ideas, sharing of ideas, communication, planning, negotiation, problem solving, consensus building, and decision making in both face-to-face and dispersed business meeting environments (O'Connor, Bronner, & Delaney, 1996).

Effective monitoring, evaluation, and impact assessment remain a priority for the development of e-learning accounting courses. To assess student understanding of the technical tools, quizzes developed for various chapters in the textbook to illustrate how managers use accounting in business decisions, students have worked in groups to discuss complex, real life case studies.

Quality in Blended Learning Accounting Courses

The issue of quality of higher education institutions and e-learning environments depends on a range of factors relating to student support, instructor, curriculum, instruction, technology used, instructional and learning design, institutional mission, resources of the institution, faculty characteristics and support, and student learning outcomes.

Main issues in e-learning include the quality of instruction, lack of quality e-content, hidden costs, misuse of technology, and the attitudes of instructors, students, and administrators. Each one of these has an effect on the overall quality of distance learning as a product. The challenges to quality assurance raised by electronic learning included how is this distance learning is monitored when the instructor does not have face-to-face contact with a student, and how well learning can be assessed when there is limited control over the circumstances in which it takes place.

Improved learning is the ultimate goal of blended learning. For a successful and effective blended learning accounting course, attention should paid to the following major quality aspects:

- Provide accounting technical knowledge and understanding of procedures and terms of accounting.
- Alignment with the learning objectives that should be made known to students so that they have a full understanding of what is expected of them.
- Enable application of accounting knowledge.
- The course incorporating different levels of difficulty and diverse modes should be used to cater for students with different aptitudes and abilities.
- Admission requirements and procedures.
- Structure and management of the delivery system.
- Quality of instructional materials used for teaching and promotion of learning.
- Student support services.
- A range of student assessment practices can used to track learning progress such as essays, group discussion, case studies, projects, and fieldwork that allow student contact with the business world.
- Availability of adequate human and material resources for the operation of the program.

STUDY METHODOLOGY

The 15-week accounting course was designed as a blended learning course for the purpose of this study. The online component was delivered using the asynchronous course management system (e-class) (using Moodle service available on the AASTMT site). E-class included course description, course schedule, course content, assignments, online quizzes and self-evaluation assessment exercises,

relevant library reference materials for background information, and announcements.

In this blended learning environment, the students have both the opportunity to meet each other and the instructor. In the face-to-face sessions students were provided with an in-class orientation to the online portion of the course. The online environment was used to create active learning opportunities for students that helped them engage with challenging concepts and provide self-assessment, self-paced learning time, and self-reflection opportunities.

Students can log onto the Moodle from anywhere and read and download course material and assignments. The blended course assignments focused on active-learning exercises that emphasized practical application complemented with textbook readings. Students were provided with feedback and correction weekly. Students could interact with the instructor and with each other by e-mail or Moodle, where they can post their comments regularly and generate ideas with other students while the instructor moderates the procedure. The instructor encourages students' online interaction and participation and tied this to grading. Students' evaluation was based on their interactive online and in-class participation, submitting online assignments, and on three exam papers during the semester.

Questionnaire Design

A questionnaire with two sections was developed to collect data from students at the Arab Academy for Science, Technology and Maritime Transport, College of Management and Technology accounting classroom to assess students' attitudes, usage intentions, readiness and their perceptions of the effectiveness, usefulness, and ease of use of online options. Analysis of the results helps to identify the aspects that can supports blended learning system.

The first section in the questionnaire assesses the students' perception and satisfaction. It evaluated students' satisfaction with the blended learning course. The second section assesses the blended learning quality aspects from the students' perceived interaction and collaboration with each other and the instructor, the learning outcomes, the instruction and course administration, and the assessment and feedback.

Participants in this study were 108 blended learning accounting students. The response rate was high: 83%. To examine the two hypotheses in this study, students who consented to take part in the study filled out an 82-item blended learning experience questionnaire. Students responded on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Table 1 summarizes the list of explanatory variables examined by the first and second hypotheses, their definitions, and the number of questions used to test each variable.

RESULTS AND DISCUSSION

From the SPSS statistical analysis, the Cronbach's alpha reliability coefficient of the satisfaction scale was 89.1, indicating that the instrument was reliable. This result shows satisfactory internal consistency of the measurement scales.

The statistical data analysis for section one in the questionnaire supports the first hypothesis. As shown in Figure 1, the results indicate that 39.8% (*agree*) and 31.5% (*strong agree*) of the students much prefer blended learning system where they have both face-to-face and online lectures, along with tutorials. Students were quite satisfied with the overall blended learning experience. Satisfied students are more motivated and are more likely to accomplish their learning goals. Students in the sample tested seemed to have quite positive perceptions of their interaction in this blended learning course.

The statistical data analysis for section two in the questionnaire supports the second hypothesis. As show in Figure 2, the results indicate that 39.8% (agree) and 25% (strong

TABLE 1
Definitions of Variables Tested in the First and Second Hypotheses

Hypotheses	*Variables*	*Definitions*	*Questionnaire*
First hypothesis	Student satisfaction	It is the consequence of the expectations and experiences of the subject and blended learning course.	Satisfaction and perception aspect is measured by 27 questions.
	Student perception	Student performance in face-to-face and online courses relies on student perceptions of their learning experiences including: how well or how much they have learned.	
Second hypothesis	Learning outcomes	Learning outcomes are Concise measurable statements of a learning achievement and expressed in terms of what the learner expected to know, understand and be able to do on completion of the program/course. Outcomes usually expressed as knowledge, skills or attitudes.	Blended learning quality aspects are measured by 55 questions as follows: • Learning outcomes aspect: 6 questions. • Student-instructor, student-student interaction and collaboration aspect: 20 questions. • Instruction and course administration aspect: 19 questions. • Assessment and feedback aspect: 10 questions.
	Student-instructor, student-student interaction and collaboration	Collaborative learning commonly illustrated when groups of students actively engaged and work together to search for understanding, meaning or solutions or to create an artifact or product of their learning.	
	Instruction and course administration	Education instructions and administrators organize and manage the administration, support systems and activities that facilitate the effective running of an educational institution.	
	Assessment and feedback	Assessment is a process of gathering information, which tells staff not only about student problems and difficulties but also about their competencies, how they have gone about their learning and what they have achieved. Feedback defined as information communicated to the learner that intended to modify the learner's thinking or behavior for improving learning.	

agree) of accounting students perceived improved overall performance and learning outcomes from the blended learning environment and better understanding of accounting knowledge, procedures, terms, and principles. In addition, students were more satisfied as they perceived many other benefits from the blended learning environment: immediate feedback, motivation for taking responsibility for their own learning, learning at their own pace, and increased learning flexibility.

The inclusion of face-to-face sessions within blended courses provides students with continuous access the instructor, receives immediate support, guidance, and management of the course as they lack fully online learning skills. In addition, the results reveal that assessment and feedback are a central part of the learning process and are strongly related to blended learning quality as they are used to improve it and it should be linked to the aims and objectives of course design.

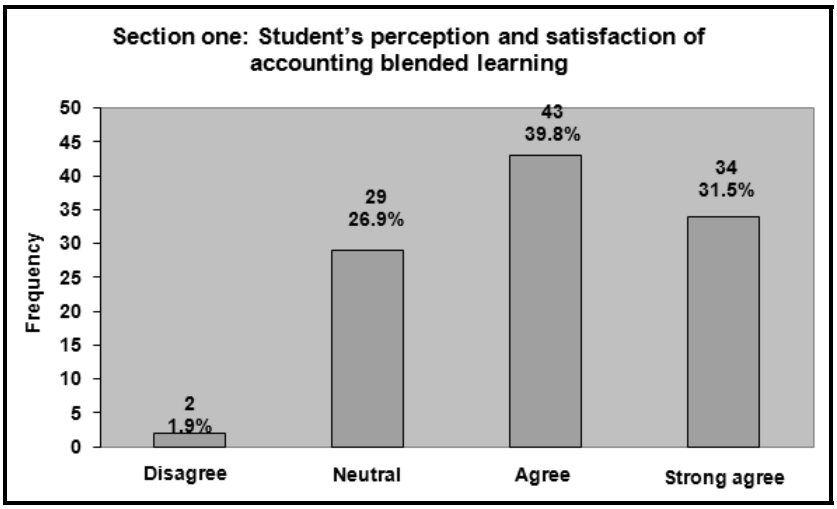

FIGURE 1
Section 1: Students' Perception and Satisfaction of and Satisfaction With Accounting Blended Learning

The results of this study highlight the students' perception of the blended learning environment as one that requires more responsibility. Online students are motivated learners with strong self-discipline and are comfortable in expressing themselves in writing**.** They can access computers and have experience with word processing, navigating the Internet, and saving, uploading and downloading files.

The descriptive statistics and the mean shown in Table 2 indicates that students believe that using blended learning interactive technologies helps them to increase learning productivity, promote the development of communication skills, and improve their understanding of accounting course content.

Table 3 shows that student-instructor and student-student interaction and collaboration affect quality of blended learning. Students consider this the most important aspect when evaluating the quality of learning (mean 3.89) then comes second equally, the learning outcomes (mean 3.75) and the instruction and course administration (mean 3.75).

The mean value of all the variables presented in Tables 2 and 3 is greater than 3.5, which indicates higher student satisfaction and perception for the quality of blended leaning.

The correlation analyses shown in Tables 4 and 5 identified a significant positive association between students' satisfaction, course interaction and communication, course design, the blended learning environment, learning outcomes and assessment, and timely feedback.

CONCLUSION

Many efforts have been made so far in the field of e-learning by many private and public Egyptian institutions like the NELC and the E-Learning Competence Center, but still there is much required from them and from all educational institutions. Higher educational institutions in Egypt should implement e-learning or blended learning systems, especially after the evolution of ICTs and the increased costs of and demands on education, as well as the overloaded classes.

The purpose of this study was to report the findings of the adoption of a blended learning approach for the delivery of accounting courses. The results of the study suggest that students consider the blended approach to be a

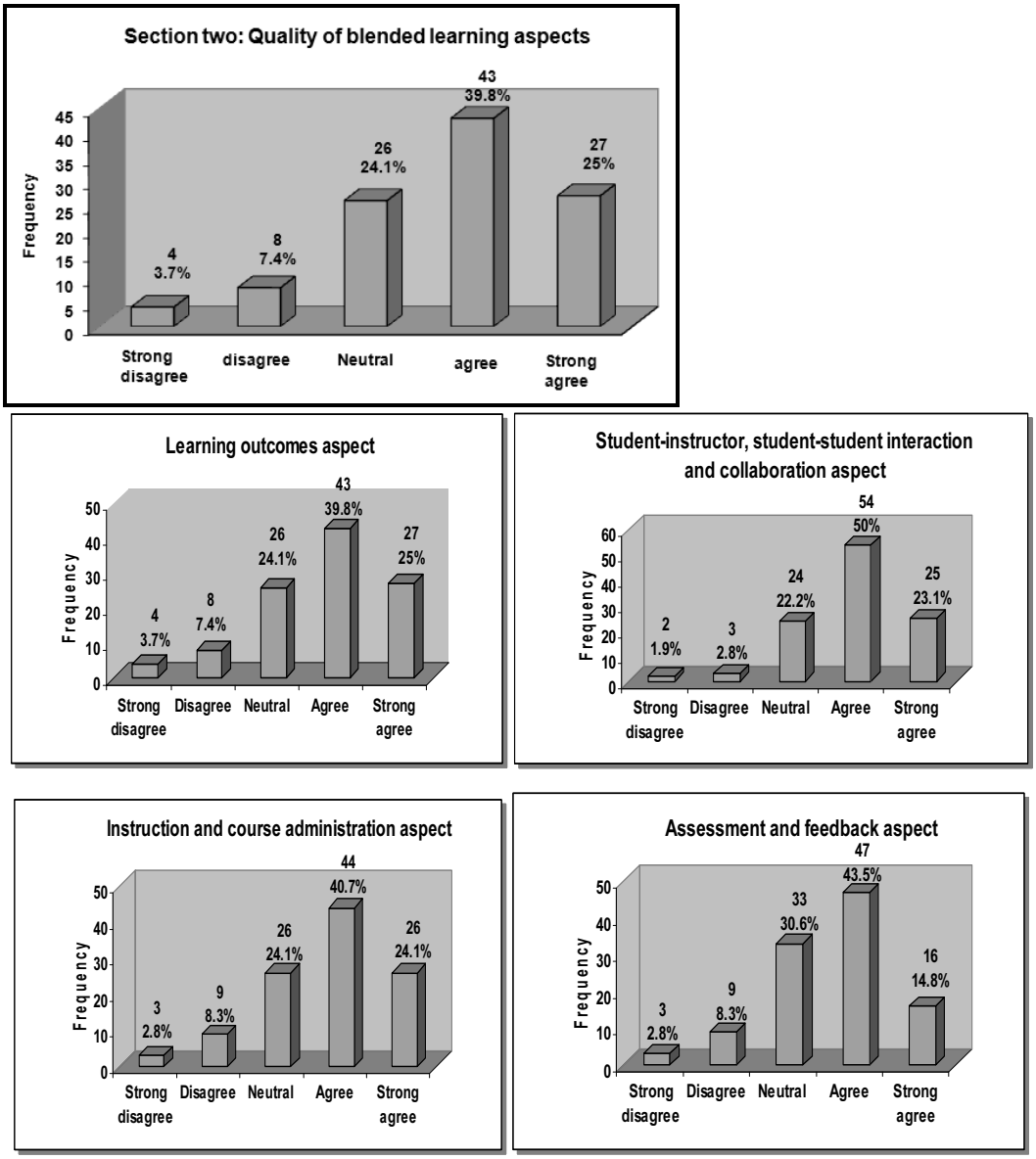

FIGURE 2
Section 2: Quality of Blended Learning Aspects

TABLE 2
Descriptive Statistics

	N	*Mean*	*SD*
Student's perception and satisfaction of blended learning	108	4.0093	0.81453
Quality of blended learning aspects	108	3.7500	1.03332

TABLE 3
Descriptive Statistics: Quality of Blended Learning Aspects

	N	*Mean*	*SD*	*Rank*
Learning outcomes aspect	108	3.7500	1.03332	2
Student-instructor, student-student interaction, and collaboration aspect	108	3.8981	.85314	1
Instruction and course administration aspect	108	3.7500	1.00582	2
Assessment and feedback aspect	108	3.5926	.93766	3

Note: *All mean values are on a 5-point scale, anchored on 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), and 5 (*strongly agree*).

TABLE 4
Correlations Between Student's Perception, Satisfaction, and Quality of Blended Learning

		Student's Perception and Satisfaction of Blended Learning	*Quality of Blended Learning*
Student's perception and satisfaction of blended learning	Pearson Correlation	1	.680
	Sig. (2-tailed)		.012
	N	108	108
Quality of blended learning	Pearson Correlation	.680	1
	Sig. (2-tailed)	.012	
	N	108	108

TABLE 5
Correlations Between the Four Aspects of Quality of Blended Learning

		Learning Outcomes Aspect	*Student-Instructor, Student-Student Interaction, and Collaboration Aspect*	*Instruction and Course Administration Aspect*	*Assessment and Feedback Aspect*
Learning outcomes aspect	Pearson Correlation	1	.619	.654**	.610
	Sig. (2-tailed)		.001	.001	.001
	N	108	108	108	108
Student-instructor, student-student interaction and collaboration aspect	Pearson Correlation	.619	1	.701**	.629
	Sig. (2-tailed)	.009		.000	.006
	N	108	108	108	108
Instruction and course administration aspect	Pearson Correlation	.654**	.701**	1	.799
	Sig. (2-tailed)	.001	.000		.001
	N	108	108	108	108
Assessment and feedback aspect	Pearson Correlation	.610	.629	.799	1
	Sig. (2-tailed)	.001	.006	.001	
	N	108	108	108	108

Note: **Correlation is significant at the 0.01 level (2-tailed).

positive innovation. The findings show an overall positive student attitude toward and satisfaction with the blended learning course and acceptance for responsibility of their learning, but they need direct support and development for their time management skills. Students prefer the blended learning environment rather than fully online learning, as they perceived that student-instructor as well as student-student interaction and collaboration are important issues in the quality assurance of learning.

RECOMMENDATIONS

In order to cope with the increasing trend in using blended learning, some recommendations AASTMT should consider:

1. It should have a clear and articulated mission and/or strategic plan focus on the relevance of the blended learning programs and courses.
2. It should sustain adequate financing to provide e-learning courses that meet generally accepted norms for quality. It should have updated curriculum and design of instruction to offer quality e-learning.
3. The students should be provided the needed advising, equipment, facilities, technical support, and instructional materials to pursue e-learning.
4. It should sustain a comprehensive system for the evaluation of e-learning educational effectiveness in relation to student learning and achievement, and link the student outcomes to the degree it meets its e-learning educational mission and goals.
5. Blended learning can be successfully implemented only if learners have sufficient training and knowledge of, and are ready to use, the newly introduced technology.
6. Accreditation agencies should modify existing or develop new standards and processes to ensure the quality of distance learning.
7. Obtaining student feedback about their perceptions of blended learning environment on a timely and systematic basis is important for continuous improvement.
8. The AASTMT-CMT administrative structure, appropriate policies and procedures, interdepartmental communications, and updated technical infrastructure should provide a supportive system for delivery of online curriculum.

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APPENDIX: QUESTIONNAIRE

Please rate the following statements according to the following five Likert scale as follows:

Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
1	*2*	*3*	*4*	*5*

No.	*Statements*	*1*	*2*	*3*	*4*	*5*
	Section 1: Student's Perception and Satisfaction of Accounting Blended Learning					
	Blended learning course experience has:					
1	Provide accounting technical knowledge.					
2	Enable application of accounting knowledge.					
3	Broaden and deepened my interest in accounting.					
4	Enable to judge value of accounting information.					
5	Improved my opportunity to access and use the class content.					
6	Brainstorming and finding relevant information helped me resolve content related questions.					
7	Reflection on course content and discussions helped me understand fundamental concepts in this class.					

8 Improved my ability to integrate facts and develop generalizations from the course material.

9 Online discussions were valuable in helping me appreciate different perspectives.

10 Develop student's ability to communicate clearly about the subject.

11 Provide flexibility in accessing the class content anytime and anywhere online.

12 I prefer using technology in learning.

13 Increase in student control, responsibility and ownership of learning.

14 I felt motivated and interested in course issues.

15 Helps me better understand course material.

16 I prefer extensive use of the Web, but still some face-to-face class time in other courses.

17 I have ready access to the technologies required in the course.

18 My analytical, interpersonal and time management skills have improved because of this course.

19 My computer skills have improved because of this blended learning course (using Moodle).

20 I find online class delivery of accounting materials more effective than traditional in-class delivery.

21 I satisfied with interaction with peers and instructors.

22 I found a match between actual and expected learning experiences.

23 I satisfied with advising, registration, and access to access to materials.

24 The orientation for how to learn online was satisfactory.

25 In comparison to the traditional classroom teaching, I perceive that the quality of interaction experienced with lecturers/tutors and other students in blended learning classes is much better.

26 Given the opportunity, I would take another course in the future that has both online and face-to-face components.

27 Overall, I am interested and satisfied with the use of blended learning as a teaching method.

Section 2: Quality of Blended Learning Aspects

A—Learning Outcomes Aspect

28 Instructions to students on how to meet the course learning objectives are adequate and stated clearly.

29 The learning activities promote the achievement of the stated learning objectives.

30 My blended course experience has increased my opportunity to access and use information.

31 I have more opportunities to reflect on what I have learned in blended courses.

32 Outcomes of online learning are useful for career and profession development as well as academic development.

33 Blended learning improve learning outcomes, decrease in drop and failure rates.

B- Student-Instructor, Student-Student Interaction, and Collaboration Aspect

34 The course conducted in an interactive manner.

35 The amount of actual, real-time interaction experienced between the instructor and students was sufficient.

36 The instructor was effective in motivating the students to put in their best work.

37 There are more opportunities to interact and collaborate with others in a blended course.

38 The instructor helped to keep course participants engaged and participating.

39 Instructor actions reinforced the development of a sense of community among course participants.

40 The technology component of blended course increased the amount and quality of interaction with the instructor and other students compared with face-to-face courses.

41 The instructor's answers to the questions by other students enhanced my understanding of materials.

42 I find the instructional lecture notes to be helpful in learning course content.

43 The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.

44 Combining tradition face-to-face classroom learning with blended learning approach provides students with the best quality-learning environment.

45 I feel comfortable providing my input in class discussions.

46 The instructor usually answers student's questions promptly.

47 Online or web-based communication is an excellent medium for social interaction.

48 Reading other students' on-line submissions clarified and helped me understand my ideas from a new perspective and encouraged me to investigate further sources of knowledge.

49 Online discussions help me to develop a sense of collaboration.

50 Online and face-to-face course components of this course were relevant and enhanced each other.

51 The instructor is helpful and responsiveness to students.

52 The instructor is willing to listen to student questions and opinions.

53 An online course allows for social interaction.

C—Instruction and Course Administration Aspect

54 Instructions make clear how to get started and where to find various course components.

55 Course goals and objectives/outcomes are present and explicitly stated to the students.

56 Students made aware of expectations for participation online.

57 The course Moodle site is well organized and easy to navigate.

58 Purpose of learning activities clearly presented.

59 Content sequenced and structured in a manner that enables learners to achieve the stated goals.

60 The comments from the instructor in class and through e-mails are constructive.

61 The practice assignments (individual / group case) were helpful in learning course content.

62 The web instructional materials and e-library resources are helpful and sufficient for the student to learn the subject.

63 The tools and media support the learning objectives appropriately chosen to deliver the content of the course and to guide the student to become an active learner.

64 The relationship between the instructional materials and the learning activities clearly explained to the student.

65 The instructor provided clear instructions on how to participate in course learning activities.

66 The online portion of the course integrated with the in-class portion of the course.

67 The online course contains reading list, links to appropriate e-resources and assignment information.

68 The instructor clearly communicated important due dates/time frames for learning activities.

69 Blended course let me utilize a variety of information sources to explore issues posed in this course.

70 The online course contains course information, announcements and administration details including timeline.

71 The designed on-line teaching materials made the topics interesting and helped me to learn during the face-to-face sessions.

72 When I encounter a problem with the use of the Moodle in this course, the instructor helped me with my problem in a timely and effective manner.

D—Assessment and Feedback Aspect

73 The instructor kept students informed of their progress.

74 The instructor provided feedback that helped me understand my strengths and weaknesses.

75 Provide timely feedback to students.

76 The assessment instruments selected are sequenced, varied and appropriate to the content assessed.

77 Students provided with online self-assessment.

78 Summative and timely feedback more efficiently achieved when assignments submitted electronically.

79 Information given to students about how they graded on assignments and exams stated clearly.

80 Exam questions are clear and cover all aspects of the course.

81 The instructor is concerned for student progress.

82 Assignments help in understanding course material and used in assessments.