

Exploring Instructional Practices in E-Learning Programs at Saudi Universities

Ibtisam Alhasaf¹, Raymond A Dixon²

¹Shared Services, AlUla, Kingdom of Saudi Arabia

²University of Idaho, USA

ABSTRACT: E-learning has become a fundamental component of higher education worldwide, with Saudi universities increasingly adopting digital learning environments. This study explores faculty perceptions of instructional practices in e-learning programs at Saudi universities, focusing on interactive activities, student engagement, and assessment methods. A qualitative research approach was employed, using semi-structured interviews with faculty members from various institutions. The findings indicate that faculty members utilize a variety of interactive tools, such as discussion forums, live chat applications, and group projects, to enhance student engagement. However, challenges persist in effectively integrating multimedia elements. Assessment strategies primarily rely on quizzes and traditional exams, while some faculty incorporate project-based evaluations and peer reviews. Internet connectivity issues remain a significant barrier, affecting students' performance in online assessments. The study highlights the need for comprehensive faculty training programs to enhance the use of modern educational technologies and improve student interaction, ultimately contributing to the overall quality of e-learning in Saudi universities.

KEYWORDS: E-learning, instructional practices, Saudi universities, student engagement, assessment methods, interactive learning.

I. INTRODUCTION

E-learning has been gaining popularity and acceptance worldwide (Downes, 2005). Almost all contemporary educational institutions implement some form of e-learning in one way or another (Marchisio, Rabellino, Spinello, & Torbidone, 2017). We are using the term e-learning as the "innovative approach to education delivery via electronic forms of information that enhance the student's skills, knowledge, or other learning performance" (XaymoungNhoun et al., 2012, p. 843). A glaring example of such a trend is the Massachusetts Institute of Technology (MIT) open courseware program that aims to make educational information, including course books, quizzes, assignments, and lecture notes, available to students around the globe without even the need for registration (MIT, 2020). This project is the first of its kind, where a world-class university allows access to all those who wish to learn, without any prerequisites or fees. However, e-learning is a relatively new concept with a lot of skepticism in certain regions of the world. Moreover, there are also concerns about the level and quality of education that can be imparted to the students when not in a traditional classroom (Yamani, 2014).

Saudi Arabia has established 42 colleges and universities across the country with new technological infrastructure. These universities in the Kingdom of Saudi Arabia are playing an essential role as leaders in teaching and learning by significantly increasing their focus on e-learning approaches. The advancement in technology and rising costs of human and other resources have also necessitated these universities to shift to e-learning and blended learning environments, with several introducing e-learning environments to some of their degree and vocational programs in the past decade. However, the physical distancing protocols due to COVID-19 drove the need for e-learning environments in all educational disciplines (Alobathani, 2021).

While many universities in Saudi Arabia understand the needs and benefits of e-learning, some institutions are still not prepared for the challenges associated with e-learning. Unfortunately, some universities have achievement gaps in their e-learning programs and some faculty members are not effectively utilizing technology in their courses (Al-Sarrani, 2010). Because e-learning programs involve much larger class sizes and competencies among designers and learners differ to a greater extent (Martin, Budhrani, Kumar, & Ritzhaupt, 2019), the demand for new pedagogies in learning at different levels has increased significantly in e-learning settings.

Almalki (2011) stated that several issues face the successful implementation of e-learning in Saudi universities. One is a lack of skills in pedagogical and e-learning instructional designs. Another issue was the inability of websites designs to increase students' interaction with course content and interaction among students. According to Lebel, Olshain, and Weiss (2005), ease of

Instructional Practices in E-learning Programs at Saudi Universities

use of technology and practical accessibility of e-learning courses determine students' completion rates. Additionally, students who are not used to taking ownership of their learning are more prone to a lack of motivation for e-learning courses.

Advocates of the multimedia social sciences curriculum at Medgar Evers College convey that "multimedia courseware holds students' interest better than typical college course materials do. Students who were interviewed said they enjoyed the feeling of being proactively involved in the material" (Fitzgerald & Olsen, 1993, p. 41). However, most online learning courses for higher education in Saudi universities tend to be very text-based rather than incorporating multimedia tools. Instructors assume that a text-heavy environment is the best way for higher education learners (Alsadhan, Alhomod, & Shafi, 2014), ignoring that visualization is a powerful tool for comprehension. Blackboard is the most dominant Learning Management System (LMS) in Saudi higher education (Alebaikan & Troudi, 2010). However, many faculty members consider it a complex system. They view the producing and posting of instructional materials, recording lectures, and uploading multimedia presentations as challenging tasks (Bayaga & Alghamdi, 2016).

Most studies emphasize the need to implement e-learning models properly. Because learners come from different backgrounds with a variety of skills and competencies, the accessibility of those courses must be simple enough for learners to follow and yet robust enough to achieve the learning outcomes set forth. Further research needs to be conducted to explore fundamental techniques used in KSA for interactive activities, multimedia, and assessment. It is imperative to investigate faculty existing practices and their ability to engage students in the designing of course to ensure quality in Saudi higher education e-learning environments.

1.1 Purpose of the Study

The purpose of this study was to explore the perception of university faculty members in KSA about their teaching practices in e-learning environments and determine the extent to which their strategies reflect best practices in terms of interactivity, engagement, and assessment. The following research questions guided this study:

1. What kind of interactive activities do faculty members use to ensure the active engagement of students in e-learning environments in Saudi universities?
2. How do faculty members in Saudi universities assess and evaluate students' academic performance in e-learning environments?

1.2 Theoretical Framework

While the Community of Inquiry (CoI) concept was used first by early pragmatists C.S. Peirce, John Dewey, and Jane Addams (1916), the subsequent theory was developed by Anderson, Garrison, and Archer (2001). It is a theoretical framework that is comprised of well-known approaches for designing the best learning experience for the online environment. This framework characterizes a procedure for developing meaningful, deep (i.e., collaborative-constructivist) learning practice and experience via the formation of three interdependent constituents – cognitive, teaching, and social presence (Shea, Richardson & Swan, 2019). It posits that teaching presence, social presence, and cognitive presence are significant constituents for providing an interactive and successful educational experience in online learning environments (Fiock, 2020). Anderson et al. (2019) developed CoI instructional strategies for instructors, online course developers, and instructional designers to use in teaching online courses. According to Cleveland-Innes, Garrison and Vaughan (2018), this framework is used to create an effective and cooperative online learning environment for knowledge construction. *Social Presence* refers to the participant's capability to recognize the community, purposefully communicate in a believing environment, and form interpersonal relations by reflecting their personalities. *Cognitive Presence* refers to the degree to which students confirm and develop meaning via discourse in a critical Community of Inquiry and sustained reflection. *Teaching Presence* refers to the facilitation, direction, and design of social and cognitive procedures to realize individually meaningful and worthwhile learning outcomes educationally (Garrison, Anderson & Archer, 1999). Each of these presences has indicators and categories. The importance of CoI lies in the fact that, despite its critical stated objectives of intellectual autonomy, it is fundamentally communal and social in nature. (Shea, Richardson & Swan, 2022).

CoI can effectively be used as a framework in e-learning. It allows the learners to engage and collaborate so that their social and cognitive skills can be improved, and they can effectively complete their tasks (Shea, Richardson & Swan, 2022; Stewart, 2019). This framework helps to understand the complexities of technology and build a learning environment for the students to address the challenges they face in learning and education. CoI is found to be effective in blended and online learning experiences and assists teachers in providing practical solutions to encourage learners to gain education and improvise their skills.

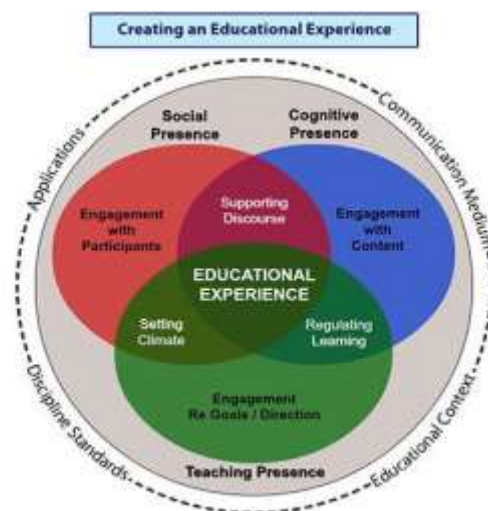


Figure 1. A Community of Inquiry (CoI) Theory. Reprinted from *Building bridges to advance the community of inquiry framework for online learning*. Shea, Richardson & Swan (2022)

II. LITERATURE REVIEW

2.1 E-learning in Saudi Arabia Universities

In recent years, the Kingdom of Saudi Arabia has been paying special attention to e-learning. The kingdom set up a national headquarters to facilitate the expansion of e-learning throughout the kingdom. The center was set up in Riyadh in 2005, and it has been continuously updated and improved since then. The establishment of the National Center for e-learning and Distance Learning (NELC) shows the resolve of the government to promote e-learning, and it started much earlier than other regional governments (NELC, n.d.). The site has manuals for e-learning controls, developing e-learning skills, and an online education plan in case of global emergencies like that of the recent coronavirus.

However, a study by Chanchary and Islam (2011) showed that about 73% of the students interviewed across Saudi Arabia still preferred attending university classes to studying online. This shows that students in the kingdom are not ready to forgo an opportunity to visit the university, as it holds a special place in their cultures and societies. The university is not just a place to get a degree and education, but for students and teachers, their universities hold great sentimental value, and there is perceived prestige and honor in attending a university. To remedy this, most universities in the country have adopted a model for tertiary education that combines parts of e-learning and traditional lecture systems to produce a blended model that is currently very popular among students (Aljaber, 2018). E-learning is supplementing and enhancing traditional learning modules in Saudi Universities, which helps students become more accustomed to using digital technology.

One thing that is observed lacking in universities is that teachers, as well as students, are skeptical about e-learning system, and teachers are particularly averse to taking the extra time to teach their pupils about e-learning modules (Bassam, 2012). The already confused students are left to explore the e-learning technology themselves, which takes a considerable amount of time and effort and discourages the students in the long run. The reason behind this, according to Bassam (2012), is the lack of instructor-student interactions in a distributed learning environment. The government of Saudi Arabia is keen on pushing e-learning, distance learning, and other forms of modern study techniques into the top Saudi universities. The government does this to promote the spread of education so that remote areas have access to modern education; increasing the standing of the Saudi universities in the world. But doing so hurriedly and without proper administration training has created resentment among administration, faculty and students (Alshumaimeri & Alhassan, 2010; Bassam, 2012).

In a case study from Qassim University, Al-Masaud and Gawad (2014) tried to explore the impediments to the advancements of e-learning in Saudi universities. It was found that faculty, as well as students, had low computer proficiency and could be considered computer illiterate. Moreover, there were challenges of increased workload and regular follow up with students (Al-Masaud & Gawad, 2014). Low computer literacy is compounded by language barriers imposed by the weak understanding of English (Al-Asmar & Khan, 2014).

King Saud University (KSU) was the first university to be built, and the first that started providing e-learning services to its students. KSU provides e-learning modules to its students, but faced difficulties providing complete courses or degrees program online (Saha, 2015). The reason for this is students and professors themselves don't trust the e-learning mechanism, as they see it still needing much work and development. Online courses also have a lack of support from senior administration who fear it would reduce the standard of the degree programs (Aljaber, 2018).

Instructional Practices in E-learning Programs at Saudi Universities

2.2 Interactive E-learning Environments

The early adoption of e-learning environments in Saudi Arabia triggered instructors' concerns because it did not involve much interaction. Alebaikan and Troudi (2010) stated e-learning environments in Saudi universities were only translated from traditional classes with a significant lack of student to student and instructor to student interactions. Learners' boredom, disengagement, and passive learning were evident in e-learning programs (Zhang et al., 2004) and this made it challenging to create and make available full online programs in Saudi universities (Saha, 2015).

Universities are also funding educational centers where both e-learning courses, as well as blended learning methods (a combination of traditional in-class learning and e-learning), are provided (MacDonald & McAteer, 2003). One of the reputed universities in Saudi Arabia, King Khalid University, encourages its students to opt for e-learning courses as an effective way of instruction within the institution. The University believes that they are widening the knowledge horizon of their students through e-learning. The integrated learning method used at King Khalid University allows students to be close to their traditional learning methods while learning in a virtual environment (Al Zumor, Al Refaai, Bader Eddin & Aziz Al-Rahman, 2013), allowing for a smooth transition to e-learning methods.

2.3 Assessment and Evaluation Methods in E-learning

Measurement, assessment, and evaluation are necessary for e-learning educational systems. There are various concepts and philosophies on what to measure and evaluate and how to do it in e-learning systems (Kear al., 2016). As part of online class planning, instructors need to make some choices about the types of assessment used. There are two main types of assessment used in education today, formative and summative assessments (Ko & Rossen, 2017). The formative assessment is "part of the instructional sequence, for the purpose of measuring progress and giving appropriate feedback, not grade" (Ko & Rossen, 2017, p. 74). It is "a tool for assessing the status of teaching and learning efforts while they are underway" (Dell'Olio & Donk, 2007, p. 49). Formative assessment comes in different forms and can be formal or informal. Examples of formal formative assessments are homework, checklists, and quizzes while informal assessments include observation and asking questions of the students within the classroom (Dunn & Mulvenon, 2009). Summative assessment is "a graded assignment or test that takes place at the end of an instructional sequence or as a final assessment of the course" (Ko & Rossen, 2017, p. 74). It is "a tool for determining a final grade or summary" (Dell'Olio & Donk, 2007, p. 49).

Faculty members must ensure that their assessment and evaluation techniques provide a fair assessment of individuals taking e-learning courses. One of the major concerns in having fair assessment techniques is the training and development of faculty members who design e-learning courses (Conrad & Opena, 2018). The knowledge of effective teaching techniques and assessment methods tailored to those teaching techniques are important. The quality of the education provided in an e-learning format has to be maintained for it to have positive outcomes for learners. Conrad and Opena (2018) provided some of the most effective assessment methods used in e-learning. They include e-portfolios, journals, projects, and discussion boards.

III. METHODS

3.1 Research Design

A generic qualitative design was undertaken in this study. Generic qualitative inquiry investigates people's attitudes, opinions, or beliefs about a particular issue or experience (Kennedy, 2016). The generic qualitative inquiry may be viewed as an approach that refuses to claim allegiance to a single established methodology. People's subjective opinions, attitudes, beliefs, or experiences of things in the outer world cannot be measured in the statistical sense, and any study of people's subjective "take" on actual external happenings and events requires qualitative methods (Aronson, 1994). A generic qualitative approach was adopted to achieve the study's aim of having a deeper understanding of faculty members' practices that affect e-learning success in Saudi Arabia.

3.2 Participants

Purposive sampling was used, that is, participants who have knowledge or experience in the studied area were targeted for the study (Sandelowski, 1995). Because e-learning is a relatively new approach in Saudi universities, as it was scaled back and has remained on the periphery between 2013 to 2019, it was difficult to find faculty members with personal experiences of teaching online. Snowballing, a technique where research participants recruit other participants for a study (Evans & Rooney, 2019), was used to find faculty member meeting the criteria.

A total of 17 uniquely qualified faculty members were obtained. The sample included a mixture of women and men, teaching in a variety of Saudi universities in the capacity as professors, associate professors, assistant professors, and lecturers. All the participants were in either full-time or part-time employment. According to Percy, Kostere, and Kostere (2015), "a small, non-representative, but the highly informed sample can provide rich information about the topic" (p. 79).

3.3 Data Collection

Approval was granted by the Institutional Review Board (IRB). An informed consent form explaining the rationale and purpose of the interviews and assuring participants of anonymity and confidentiality was sent to each participant.

Instructional Practices in E-learning Programs at Saudi Universities

Semi-structured interviews using closed-ended and open-ended questions were conducted. The initial questions were derived from the research questions, with more probing questions being asked as the interview progressed. A semi-structured interview format allowed the interviewer to generate follow-up questions about best practices and challenges. The schedule was divided into three areas of inquiry, and the interviews lasted, on average, around 60 minutes.

The interview questions were translated from English to Arabic because the study participants were native speakers of the Arabic language. Interviews were recorded and written notes were also taken during the interview. The recordings were then transcribed verbatim in preparation for analysis. To confirm the accuracy of the translation, the Arabic version of the interviews was reviewed by an expert at the Department of Linguistics and Translation Studies at King Saud University.

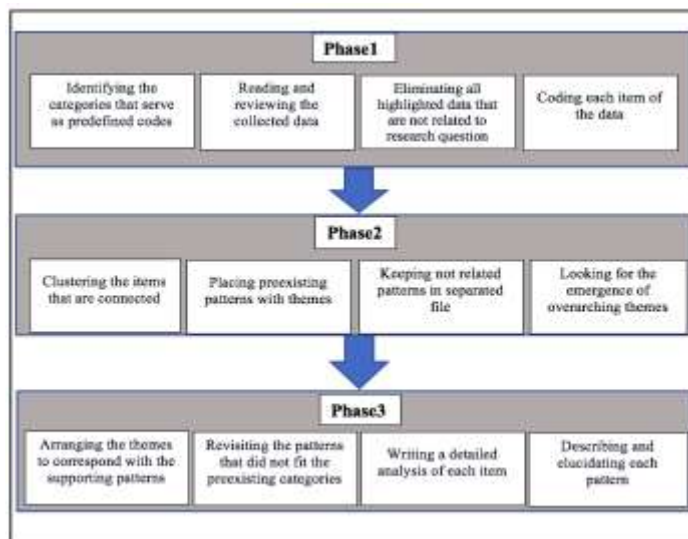


Figure 2. The Three Phases of Analysis

3.4 Data Analysis

Thematic Analysis was used to analyse the data. Thematic Analysis is described as “a search for themes that emerge as being important to the description of the phenomenon” (Fereday & Muir-Cochrane, 2006, p. 82). It is an approach of identifying and encoding patterns of meaning in primary qualitative research (Braun & Clarke, 2006; 2013). Miles and Huberman (1994) summarized qualitative analysis into three processes which need to be followed: data reduction, data display, and conclusion drawing. Thematic Analysis employs inductive approaches in the analysis of this study data. The initial themes are predetermined from the research questions and the existing literature. An inductive approach is then used to look for patterns across the data and to make sense of these patterns by theorizing about them. The transcribed data were analysed following the twelve steps process as suggested by Percy, Kostere, and Kostere (2015). The process is organized in three main phases. Although these twelve steps can be concurrent and followed in any order, many of them were conducted sequentially rather than concurrently (Figure 2).

IV. RESULTS

4.1 Research Question One

What kind of interactive activities do faculty members use to ensure the active engagement of students in e-learning environments in Saudi universities? Two categories emerged in relation to the first research question. They included interactive activities practices and instructors’ and students’ communication.

4.1.1 Interactive activities practices

Participants had very favorable opinions of using interactive activities in their online classes. All participants were using web tools and virtual learning environments, such as Blackboard and Google Classroom, to improve interactive communication and collaboration between students and teachers. In addition, participants reported that they usually prefer to involve students directly in producing learning content by employing, for instance, blogs or podcasts. Participant faculty also foster discussion and debate among students in different ways, such as, *“Reciprocity in comments, collaborative writing, joint work on projects, and discussion board on Blackboard, etc.”* (Participant 9)

They also used several live chat apps such as Telegram and WhatsApp before, during, and after the lecture to generate discussion among students in large classes, *“these live chat apps support the uploading and sharing of different documents, videos, audio, and all Microsoft file formats.”* (Participant 8)

Instructional Practices in E-learning Programs at Saudi Universities

The participant faculty focused on motivating students to interact throughout the course. Most of the participants mentioned the use of teamwork assignments in different ways to implement cooperative and collaborative learning. One of the respondents commented,

When dealing with a large class, I always divide the students into small chat rooms within Zoom or Blackboard. Each group is given an axis to criticize and analyze, and then we meet again in the main chat room to discuss their results and conclusions. Sometimes, I ask them to create a group on any live chat app in the case of any technical lockdown. (Participant 8)

Four of the participants noticed that the students' interaction during the lectures highly increased when it involved teamwork. This strongly suggests that students are more motivated when their peers acknowledge them. One respondent commented,

I have been using teamwork profusely since the start of pandemic to take on independent learning responsibilities, and I can see how team-based learning activities increase students' interaction through how they try getting to know each other and face communication challenges. (Participant 11)

The educational institutions have all the required tools and apps to set up collaborative projects, such as wikis, chat rooms, forums, blogs, social media, YouTube, etc. *"The universities have quite good technical facilities to employ and provide equitable and quality education"* (Participant 3). Most universities aim to take additional steps, such as *"providing video and audio recordings of actual physical lectures"* involving interactions between faculty and students, and *"digital capture of a faculty's PC during the lecture, as well as writings on whiteboards"* to improve the educational experiences of students.

The participants underlined the effects of field trips as a motivator activity. They believed that field trips would expose students to real-world experiences. A faculty from special education programs mentioned:

Taking students on field trips to disability centers to observe the cases is essential. In some cases, if the students cannot visit the site, the instructor interviews the employees and some patients at the center and broadcasts it online for the students to view in real time. (Participant 1)

4.1.2 Instructors' and student's communication

Participants highlighted the substantial role of building relationships with students and then promoting their interaction in e-learning classes. One participant said, *"teacher-student interactions and relationships are very important in the virtual environment"* (Participant 7). One of the features of the Saudi e-learning system is how students interact primarily with their instructors. One participant who studied in the US said, *"the student in US usually contact his instructor only via email or meeting through office hours, but in our Arabian culture, instructors are always welcoming any contact in any time, while we are not required to do"* (Participant 9).

The theme that emerges for the first research questions is instructors are adopting discussion, peers review, and live chat apps to promote and enhance interactive activities in e-learning.

4.2 Research Question Two

How do faculty members in Saudi universities assess and evaluate students' academic performance in e-learning environments? The second research question generated two categories: instructors develop different assessment approaches and internet connection issues.

4.2.1 Different Assessment Approaches

Since assignments and feedback played the most crucial role in e-learning, most participants pointed to tests, projects, weekly tasks, exams, discussions, and participation as their primary assessment methods. For most universities, 60% of the grade is based on participation, projects, and midterms, while 40% of the grade is for the final exams (Participant 2, 4, 5, 11, 7, 13, 14, 15). Participants use both formative and summative assessments depending on course objectives and the type of assessment used. Students are required to participate in weekly tasks, discussion board, and projects. Participant 13 found a unique way of using formative assessment in evaluating students in the discussion board.

I use an evaluation strategy called 3-2-1; the student is required to list three themes or concepts learned during the unit, two unanswered questions, and one idea the students intended to share with others. This strategy helps me to determine how much of the unit's content the students have retained and how I can improve the next unit.

Another participant used the discussion board differently; *"when the lecture finishes, I ask students to write a short narrative about what they have learned about a particular topic covered in class. This is not only an assessment tool, but I use it also as a feedback tool"* (Participant 17).

Assessment involves project work, and weekly tasks are adopted to develop students' skills, behaviors, and confidence necessary for success in their projects; *"It is essential to design work projects that help learners to analyze, evaluate, and extrapolate their plans, conclusions, and ideas.* (Participant 6) *"A great assessment tool to give feedback and deep evaluation that reflect content knowledge and additional skills."* (Participant 12)

Instructional Practices in E-learning Programs at Saudi Universities

4.2.2 Tests and quizzes

Tests and quizzes are considered traditional assessment tools, but they are excellent tools to engage students in their studies when combined with technology. The results of this study indicated that tests and quizzes are the most popular tools to evaluate learners in e-learning. Participant 3 said, *"I always use tests and quizzes as canonical tools to assess students' level of learning because other assessment tools initially slow down e-learning processes."* Another participant from Human Sciences College (Participant 14) added,

Many students register for online courses to avoid exams and quizzes, but I intentionally use them because of two reasons: First, I believe that knowledge should have some level of difficulty in order to be remembered well later. Second, tests, quizzes, and exams help in providing feedback to guide future learning.

Questions are designed differently according to the lecturer and what suits their assessment approach. *"In my quizzes, I preferred to use different forms of questions depending on the goals of the book chapters.... objective questions such as multiple choice, true and false, matching, fill-in-the-blanks, hotspots, and essay questions that are usually used in final exams"* (Participant 1). *"Objective questions save the instructor's precious time and provides flexibilities of time for the student"* (Participant 10). *"I use multiple choice and true-false questions to measure student knowledge as well as a source for a post-test discussion"* (Participant 16).

Essay-type questions are mainly used by a few participants. This type of assessment questions requires students to express their opinions and beliefs on specific topics; *"in my view, to evaluate higher-level students, this type of question encourages critical thinking, and it is the best way to test their overall comprehension of a topic"* (Participant 5). *"I like to use essay questions most in my tests although they are harder to evaluate because I like when I give my students opportunities to create the answer instead of choosing it"* (Participant 15). Participant 2, however, saw some disadvantages in using open-ended or essay-type methods in e-learning. *"Essay questions prompt students to explore their thoughts, feelings, and opinions, but they require a longer time for students to think, organize, and compose their answers."* Participants further indicate the format of essay questions:

The selection of questions is random. The system chooses five questions for the student from the question bank, and the student picks three to answer. The student can answer the questions open-book style, but the questions are not direct, so the student is required to brainstorm to answer correctly and cover all parts of the question. (Participant 12)

A Zoom meeting with the instructor is offered in case any students face difficulties during the test.... (Participant 8)

4.2.3 Internet connection issues

Another factor to consider is the extent of familiarity with the use of the internet for education in a culture where the web is not widely used for education. With e-learning being implemented in the education sector is relatively recent in KSA, *"many students were faced with technical challenges"* (Participant 17).

Students face problems when submitting their assignments and exams due to internet issues or an overload on the site. Some participants stated,

"students sometimes faced problems submitting exams because of poor internet connection" (Participant 4).

"There are many students trying to submit a 60-question exam at once. For those who were unable to submit, I had to redo the exam for them or extend the time of submission" (Participant 16).

"There are many students who live in villages where the internet infrastructure is not good. This caused many problems in the first semester of online learning. However, we still needed to assess and evaluate the students" (Participant 10).

Weekly tests were given to students to help them adapt to the nature of online testing. Objective questions were later utilized more often than essay questions to reduce the chances of an overload on the site. One participant mentioned, *".... assessment with objective questions is a good option for students participating in online learning and accessed entirely from home."*

The theme that emerged for the second research quest is instructors primarily used tests and quizzes in assessment, and students often faced technical problems completing assessments because of poor internet infrastructure.

V. DISCUSSION AND CONCLUSION

5.1 Promoting and enhancing interactive activities

The main elements of CoI theory are Social Presence, Cognitive Presence, and Teaching Presence. Social Presence is the participant's capability to recognize the community, purposefully communicate in a believing environment, and build interpersonal relationships (Boston, Díaz, Gibson, Ice, Richardson, & Swan, 2009). The results indicated that 98% of respondents are using student-driven discussion boards, peer reviews, weekly Q&A boards, and live chat apps during online classes as interactive techniques. These interactive techniques help learners to project themselves socially and emotionally and perceive other learners as real people. According to Boston and associates, *"affective expression is the ability of online learners to project themselves through text-based verbal behaviors such as para-language, self-disclosure, humor, and other expressions of emotion and values"* (2009, p. 68). Most faculty use these discussion tools to capture the same type of interactions in the traditional classroom, increasing students' motivation. CoI supports the design of online courses (synchronous, asynchronous, or blended) as active learning environments that require interaction among students and instructors. This encompasses facilitating, via

Instructional Practices in E-learning Programs at Saudi Universities

technology, dialogue between faculty and students and between students and their classmates (Vesely, Bloom, & Sherlock, 2007). Discussion activities are among the general and distinctive features of distance learning materials that help active learning and encourage students to research and interact during the learning process.

Teaching Presence refers to the design, facilitation, and direction of social and cognitive procedures toward individually meaningful educational outcomes (Anderson et al., 2019). Anderson and associates (2019) believe that "presence" is a social phenomenon that manifests itself through the sharing of ideas, information, and opinions between instructors and students. Participants in this study use group or individual websites where students could write about various topics or current affairs. Using individual or group blogs in an online course allows students to get ideas from class, share materials with others, and invite outside contributors through the blog. Assignments that involve a group of students contributing to a single blog or discussion board improve collaborative knowledge building. Thus, interactive online tools help nurture a constructive learning environment for students so they learn to value how their peers contribute to their knowledge.

A surprising finding from this study is that instructors had positive experiences in different tasks and activities that engaged their students to think about important concepts, skills, and knowledge they needed to master. Because students in SA have less experience doing online programs, the expectation was that students would be less engaging and motivated in such an environment. However, the connection or bond between students and their professors in SA is strong, and this may compensate for and explain the active engagement despite the challenges with the technology. In addition, 15 faculty named more than eight digital tools to enable students to form deep connections, exchange knowledge, and make classes more interactive. Saudi faculties encouraged dialogue amongst their students, and participants indicated they ensured students could interact with them during the lecture by opening discussions, asking questions, and asking for clarification. This reciprocal learning permits students to interact, share knowledge, and teach each other for better learning (Powell & Cody, 2009).

5.2 Assessment and Internet Infrastructure.

Results show that participant faculties in higher education institutions use small projects, weekly tasks, discussion boards, and quizzes for formative assessment. They also use tests for summative assessment in their online courses. The interviews reveal, however, that faculty rely primarily on quizzes and tests as the most common tools to evaluate students' performance. This finding partly supports previous literature that faculties use an examination system as the only assessment technique in Saudi universities (Alsadaawi, 2010). Faculty develop different quizzes and test types such as multiple-choice, fill-in-the-blanks, true and false, and matching, which agrees with the findings of Almosa and Alzahrani (2022). Through these different forms, instructors can give constructive feedback to students, improve the learning process, and encourage progress. In addition, tests and quizzes can be utilized as a feedback method for students, and the grades awarded can be used as feedback for the instructor and course coordinator to take corrective actions in their instruction.

Participants mentioned that they use quizzes and tests because of the large class size of their online courses. Online quizzes are ideal assessment tools for measuring learning outcomes across a large audience (Colman, 2022). Quizzes and tests, in their own right, are also practical and powerful tools to promote ongoing learning. When quizzes and tests are paired with technology, they are excellent tools for engaging student learning (Tsai, 2009). Different types of summative assessments, such as quizzes and final exams, summarize students' progress, typically with a percentage or letter grade (Dell'Olio & Donk, 2007). Studies agree that efficient classrooms rely on constructivist strategies for learning (see Powell & Cody, 2009). Through these formative assessment opportunities, students can solve problems by extending and re-conceptualizing (accommodating) knowledge in new contexts to understand abstract theories and applications. With the use of the principles of constructivism, instructors can develop topics for discussion forums where students get a chance to do open-ended communication. They create an environment where individuals learn to integrate reactions, experiences, opinions, and interpretations through respectful discussion (Gu et al., 2020; James et al., 2022).

Participant faculties in Saudi universities provide frequent opportunities for feedback and testing. They instruct students to read online publications, news, and articles to discuss the required material with the class, share resources with others, and draw outside participants. Designing discussion prompts and diving deep into active discussions provides peer-review opportunities to reflect on what they are learning and how they will use this knowledge in the future (Honebein, 1996). This approach helps students enhance their research, communication, and collaboration skills and encourages strong relationships among themselves. Despite the variety of participants' responses to the assessment's techniques, no one mentioned conducting an assessment relevant to the course's objectives or clearly outlining it to students through logically organized instructions. In e-learning, assessments should reveal how well students have learned what instructors want them to learn. For this to occur, assessment tools and learning objectives need to be aligned carefully and connected to each other (Towns, 2009). Stating objectives that are linked to class content helps instructors implement classroom assessments clearly and identify how each assignment will contribute to successful learning outcomes. In addition, faculty members of higher learning institutions must provide clear and precise instructions about their assessment plans to students. These instructions need to contain what students are supposed to do, when, where, and the nature of assignments. Some of the most effective assessment methods include e-portfolios, journals, projects, and discussion

Instructional Practices in E-learning Programs at Saudi Universities

boards (Conrad & Opena, 2018) because they can showcase the competency of students throughout the length of the course, and students tend to get more engaged in activities which last much longer than a daily or weekly assignment.

Several years ago, Ali and Magalhaes (2008) identified the lack of good technology infrastructure as one of the four significant barriers to e-learning in non-English speaking countries. Another study conducted to identify the e-learning variables that influence the uses and success of e-learning implementation in Saudi higher educational institutions found infrastructure and technology dimension as the most significant among sixteen factors as perceived by respondents (Quadri et al., 2017). This study also confirmed that some students have low-quality internet access and face technical problems when completing online assignments. Infrastructure and technology play a major role in the quality of the e-learning experience and are fundamental to the successful implementation of e-learning. To successfully implement e-learning, higher education institutes in SA need to ensure they have the appropriate hardware, software, internet connectivity, and technical support system.

This qualitative study has several limitations. One was using only faculty members from Saudi universities as participants. The study did not include administrators, curriculum designers, or students. The study also relied on a small sample size; therefore, reported perceptions should not be generalized to all Saudi academic institutions. In addition, findings may vary from other regions and types of higher education institutions in SA. Future research can benefit from studies to better understand the e-learning phenomenon in Saudi educational institutions. A qualitative study can investigate Saudi university students' perceptions of e-learning programs. This study may offer a better and deeper understanding of students' attitudes and thoughts about e-learning. Quantitative studies can also examine factors related to student and instructor readiness for professional e-learning programs.

REFERENCES

- 1) Al-Asmar, A. and Khan, M. 2014. E-learning in Saudi Arabia: Past, present and future. *Near and Middle Eastern Journal of Research in Education*, 1(2), 82-95.
- 2) Alebaikan, R., and Troudi, S. 2010 Blended learning in Saudi universities: Challenges and perspectives. *Alt-J*, 18(1), 49-59.
- 3) Ali, G. E., and Magalhaes, R. 2008. Barriers to implementing e-learning: A Kuwaiti case study. *International Journal of Training and Development*, 12(1), 36–53.
- 4) Aljaber, A. 2018. E-learning policy in Saudi Arabia: Challenges and successes. *Research in Comparative and International Education*, 13(1), 176–194.
- 5) Almalki, A. M. 2011. Blended Learning in Higher Education in Saudi Arabia: A Study of Umm Al-Qura University. (Unpublished doctoral thesis) RMIT University, Melbourne, Victoria, Australia. <https://researchbank.rmit.edu.au/view/rmit:14613>
- 6) Al-Masaud, K. and Gawad, A. 2014. Impediments of activating e-learning in higher education institutions in Saudi Arabia. *International Journal of Advanced Computer Science and Applications*, 5(4), 12-18.
- 7) Almossa, S. Y., and Alzahrani, S. M. 2022. Assessment practices in Saudi higher education during the COVID-19 pandemic. *Humanities and Social Sciences Communications*, 9(1), 1–9. <https://doi.org/10.1057/s41599-021-01025-z>
- 8) Alobathani, F. A. 2021 Saudi school education during the COVID-19 pandemic: The madrasati platform. *Scientific Journal of King Faisal University, Humanities & Management Sciences*, 22(2), 316–324.
- 9) Alsadaawi, A. 2010. Saudi National Assessment of Educational Progress (SNAEP), *International Journal of Education Policy and Leadership*, 5(11) 1-14.
- 10) Al-Sarrani, N. 2010. Concerns and professional development needs of science faculty at Taibah University in adopting blended learning. *Kansas State University. ProQuest Dissertations and Theses*, 217. <http://search.proquest.com/docview/603197749?accountid=8440>. (603197749).
- 11) Alsadhan, A., Alhomod, S., and Shafi, M. 2014. Multimedia based e-learning: Design and integration of multimedia content in e-learning. *International Journal of Emerging Technologies in Learning*. 9(3), 26–30.
- 12) Alshumaimeri, Y., and Alhassan, R. 2013. Current availability and use of ICT among secondary EFL teachers in Saudi Arabia: Possibilities and reality. *Journal of Educational Sciences*, 25(1), 225-238
- 13) Al Zumor, A. W. Q., Al Refaai, I. K., Eddin, E. A. B., and Al-Rahman, F. H. A. 2013. EFL Students' perceptions of a blended learning environment: Advantages, limitations and suggestions for improvement. *English Language Teaching*, 6(10), 95-110.
- 14) Anderson, T., Rourke, L., Garrison, R., and Archer, W. 2001. Assessing teaching presence in a computer conferencing environment. *Journal of Asynchronous Learning Networks*, 5(2). <https://olj.onlinelearningconsortium.org/index.php/olj/article/view/1875/706>
- 15) Anderson, T., Rourke, L., Garrison, R., and Archer, W. 2019. Assessing teaching presence in a computer commencing context. *Online Learning*, 5(2), <https://doi.org/10.24059/olj.v5i2.1875>.

Instructional Practices in E-learning Programs at Saudi Universities

- 16) Aronson, J. 1994. A pragmatic view of thematic analysis. *The Qualitative Report*, 2, 1-3.
- 17) Bayaga, A., and Alghamdi, S. R. 2016. Use and attitude towards learning management systems (LMS) in Saudi Arabian Universities. *EURASIA Journal of Mathematics, Science and Technology Education*, 12(9). doi:10.12973/Eurasia.2016.1281a.
- 18) Bassam, A. 2012. Students acceptance of mobile learning for higher education in Saudi Arabia. *American Academic & Scholarly Research Journal*, 4(2), 1-6.
- 19) Boston, W., Díaz, S. R., Gibson, A. M., Ice, P., Richardson, J., and Swan, K. 2009. An exploration of the relationship between indicators of the community of inquiry framework and retention in online programs. *Journal of Asynchronous Learning Networks*, 13(3), 67-83. <https://files.eric.ed.gov/fulltext/EJ862358.pdf>
- 20) Braun, V., and Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- 21) Chanchary, F.H., and Islam, S. 2011. Is Saudi Arabia Ready for E-Learning? A Case Study. <https://www.semanticscholar.org/paper/3877dab7e918d3f1b769d73a57e50613fce5c46e>
- 22) Cleveland-Innes, M., Garrison, D. R., and Vaughan, N. 2018. The community of inquiry theoretical framework. *Handbook of Distance Education*, 67–78. <https://doi.org/10.4324/9781315296135-6>
- 23) Conrad, D., and Openo, J. (2018). *Assessment strategies for online learning: Engagement and authenticity*. Athabasca University Press.
- 24) Colman, H. 2023. 9 assessment methods for using online learning [infographics]. <https://www.ispringsolutions.com/blog/8-ways-to-assess-online-student-learning>
- 25) Dell'Olio, J. M., and Donk, T. 2007. *Models of teaching: Connecting student learning with standards*. Sage Publications.
- 26) Downes, S. 2005. *An Introduction to Connective Knowledge*. <https://www.downes.ca/cgi-bin/page.cgi?post=33034>
- 27) Evans, A., and Rooney, B. J. 2019. *Methods in psychological research*. Sage Publications
- 28) Fereday, J., and Muir-Cochrane, E. 2006. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5, 80-92.
- 29) Fiock, H. 2020. Designing a community of inquiry in online courses. *The International Review of Research in Open and Distributed Learning*, 21(1), 134–152. <https://doi.org/10.19173/irrodl.v20i5.3985>
- 30) Fitzgerald, M., and Olsen, H. 1993. Genesis of a multimedia social sciences curriculum. *EDUCOM Review*, 28(1), 36-41.
- 31) Garrison, D. R., Anderson, T., and Archer, W. 2000. Critical inquiry in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education*, 2(2-3), 87-105.
- 32) Gu, P., Zhang, Y., & Gu, H. 2020. Creating a technology-enhanced constructivist learning environment for research ability development in a BA Thesis Writing course. *Computer Assisted Language Learning*, 33(5-6), 538-566.
- 33) Honebein, P. C. 1996. Seven goals for the design of constructivist learning environments. *Constructivist learning environments*. <https://studentcenteredlearning.pbworks.com/f/DesignConstructivistHonebein.pdf>
- 34) James, N. M., Kreager, B. Z., and LaDue, N. D. 2022. Predict-observe-explain activities preserve introductory geology students' self-efficacy. *Journal of Geoscience Education*, 70(2), 238-249.
- 35) Kear, K., Rosewell, J., Williams, K., Ossiannilsson, E., Rodrigo, C., Paniagua, Á. S.-E., Lancho, M. S., Vyt, A., and Mellar, H. 2016. *Quality Assessment for E-learning: A Benchmarking Approach (Third edition)*. European Association of Distance Teaching Universities.
- 35) Kennedy, D. M. 2016. Is it any clearer? Generic qualitative inquiry and the VSAIEEDC model of data analysis. *The Qualitative Report*, 21(8), 1369-1379.
- 36) Ko, S., and Rossen, S. 2017. *Teaching online: A practical guide*. Routledge.
- 37) MacDonald, J., and McAteer, E. 2003. New approaches to supporting students: strategies for blended learning in distance and campus-based environments. *J. Educ. Media*, 28, 129-146.
- 38) Marchisio, M., Rabellino, S., Spinello, E., and Torbidone, G. 2017. E-learning as winning tool for supporting teaching and for enhancing the internationalization processes. *Elearning and Software for Education*, 1, 101-108.
- 39) Martin, F., Budhrani, K., Kumar, S., and Ritzhaupt, A. 2019. Award-winning faculty online teaching practices: Roles and competencies. *Online Learning*, 23(1), 184-205.
- 40) Miles, M. B., and Huberman, A. M. 1994. *Qualitative data analysis: An expanded sourcebook*. Sage.
- 41) MIT. (2020). MIT Open Courseware. <https://ocw.mit.edu/index.htm>
- 42) Percy, W. H., Kostere, K., and Kostere, S. 2015. Generic qualitative research in psychology. *Qualitative Report*, 20(2), 76-85.
- 43) Powell, K. C. and Kalina, C., 2009. Cognitive and social constructivism: Developing tools for an effective classroom. *Education*, 130(2), 241-250.

Instructional Practices in E-learning Programs at Saudi Universities

- 44) Quadri, N. N., Muhammed, A., Sanober, S., Qureshi, M. R. N., and Shah, A. 2017. Barriers effecting successful implementation of e-Learning in Saudi Arabian universities. *International Journal of Emerging Technologies in Learning (IJET)*, 12(6), 94–107. <https://doi.org/10.3991/ijet.v12i06.7003>.
- 45) Saha, N. 2015. Higher education in Saudi Arabia. *Journal of International Students*, 5(3), 317- 319.
- 46) Sandelowski, M. 1995. Sample size in qualitative research. *Research in Nursing and Health*,18, 179-183.
- 47) Shea, P., Richardson, J., and Swan, K. 2022. Building bridges to advance the community of inquiry framework for online learning. *Educational Psychologist*, 57(3), 148-161.
- 48) Stewart, M. K. 2019. The community of inquiry survey: An assessment instrument for online writing courses. *Computers and Composition*, 52, 37-52.
- 49) Towns, H. M. 2010. Developing learning objectives and assessment plans at a variety of institutions: Examples and case studies. *Journal of Chemical Education*, 87(1), 91–96.
- 50) Tsai, M. J. 2009. The model of strategic e-learning: Understanding and evaluating student e-learning from metacognitive perspectives. *Journal of Educational Technology & Society*, 12(1), 34-48.
- 51) Vesely, P., Bloom, L., and Sherlock, J. 2007. Key elements of building online community: Comparing faculty and student perceptions. *MERLOT Journal of Online Learning and Teaching*, 3(3), 234-246.
- 52) XaymoungNhoun, O., Bhuasiri, W., Rho, J. J., Zo, H., and Kim, M. G. (2012). The critical success factors of e-learning in developing countries. *Kasetsart Journal of Social Sciences*, 33(2), 321-332.
- Yamani, H. A. (2014). E-learning in Saudi Arabia. *Journal of Information Technology and Application in Education*, 3(4), 169.



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.