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# E-teaching Skills among Faculty Members of Prince Sattam Bin Abdulaziz University (PSAU), Saudi Arabia

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**KEYWORDS** Distance Education. Electronic Teaching (E-Teaching). Faculty Members. Prince Sattam Bin Abdulaziz University (PSAU)

**ABSTRACT** This research aimed at identifying the level of practice of electronic teaching skills among the faculty members of PSAU and detecting the effects of the following research variables:Teaching Load, Students Number, and Teaching Experience, through surveying (153) faculty member in PSAU in 2020. The results showed that the faculty members agreed that e-teaching skills are highly practiced in technology, design, and management fields in PSAU. The results also proved that there were no statistically significant differences to (design and management fields, and overall skill) according to the 'Teaching Load' variable. There were also statistically significant differences to (the technology field) according to the 'Teaching Load' variable in favor of those with 'lighter teaching load with administrative duties'. However, there were no statistically significant differences to (design and management fields, and overall skills) according to the 'Student Number' variable.

## INTRODUCTION

With the rapid developments that the world is witnessing today, the need has arisen to develop various teaching strategies to keep pace with the current developments. Many new teaching methods have emerged, including electronic teaching (e-teaching) method, which was referred to by Nyazi (2019) as "an open distributed educational environment that uses educational tools enhanced by web technologies to facilitate the building of learning and knowledge through interaction and purposeful behaviors.

There have been previous experiences of using technology in education in some countries, such as the USA, Singapore, Canada and Korea. In 1990, in the USA, the Times School started its activity to experiment distance learning by relying on satellites to provide its educational services, and in 1994 it launched its first website on the Internet (Mukhlis 2014: 204). In 1993, the Singapore Ministry of Education, in cooperation with the National Computer Board (NCB), adopted a project to connect the education/schools to the Internet. In 1993, the beginning was in a Canadian university, where students have collected and arranged some educational resources on the Internet/network that is the (School Net) project. In March 1996, the launch was announced for the "Kid Net" project to introduce the Internet in Korean primary schools, and then the project expanded to include middle and high schools and then universities (Al-Sultan and al-Fantoukh 2001).

Also, the International Society for Technology in Education (ISTE) offers a framework for the responsible use of technology, information and software systems, and for the development of positive attitudes for students towards technology applications that support collaboration and lifelong learning in personal and productive tasks. Since 1990, ISTE has provided several standards for the use of technology in education for both the teacher (NETS*T) and the student (NETS*S) and they are constantly updated. These standards work to improve education, enrich professional practice, and provide positive models for a sustainable digital learning environment (Pescetta 2011).

A trend that has recently gained a lot of attention by educators is the e-teaching approach, as teaching staff and students have a positive view towards the use of technology in teaching, in line with global education systems that have shifted to the use of IT in teaching and have converted traditional classes into virtual classes (Al-Baz 2013). With the emergence of that trend, many educational institutions have sought to implement modern e-teaching systems, with the aim of producing educational outcomes that have positive attitudes towards teaching and learning processes (al-Bunyan 2019).

E-teaching is "a set of procedures and activities that the teacher performs during his explanation and clarification of the lessons, and in which he uses the modern technology tools, such as computers, and audio and video conferences, in order to deliver knowledge and facts in a more interactive environment as efficiently as possible" (Al-Baz 2013: 119). Abdulaziz (2015: 73) defines e-teaching as "one of the forms of teaching that based on using the capabilities, tools, systems and programs of computer technology and the international network of information, and it can be used in delivering, managing and evaluating learning content in more than one way, with a continuous interaction process - synchronous and non-synchronous - between teacher, learner and learning content". Also, Habib (2017: 204) defines e-teaching as "the processes that the teacher performs to create the largest possible contact and interaction between the recipients/learners on the one hand, and between them and the educational material on the other hand, using the computer multimedia."

E-teaching process, as shown from the previous review, emphasizes the need for faculty members to possess e-teaching skills, which according to the official website of the National Center for E-learning (2020) include the following fields:

***Technology****:* It means mastery of computer skills, which is the ability of a faculty member to create files, deal effectively with teaching systems, and use tools of communication with students, such as e-mail and virtual classes.

***Design:*** It is the practices related to designing electronic courses or using ready-made courses licensed by education service providers, so as to achieve educational competencies and goals and link them to various course activities, including tests, discussion, research, assignments and other requirements for measuring educational objectives, the evaluation and the continuous improvement of the e-course.

***Management:*** It includes the faculty member's ability to constantly communicate with his/her students, and his/her ability to follow up and control the progress of the educational process, and to follow up the development of students, by actively involving students in the learning process, and finally his ability to evaluate his/her students objectively.

Faculty members' e-teaching skills also include the understanding of electronic methods, technical skills, electronic communication skills; and the experience of electronic content, active learning, management, leadership, teaching, effective response, multimedia technology; and also include classroom fit, technological competence and the application of education policy. E-teaching skills also include guiding students towards e-learning, learning management system skills, basic principles of educational design and teaching methods (Albrahim 2020). E-teaching practices include: Small classrooms, providing clear course instructions, implementing experiential learning, ensuring inclusiveness and full access to educational opportunities, applying reflection in teaching, appropriate communication, integrating video technology in learning and teaching processes based on the previous best practices, defining course standards, ensuring student participation and the support of faculty members in e-teaching (Chalwell 2020).

The importance of e-teaching is evident in allowing the designer to choose everything related to the presentation of the study-material and its content in terms of elements. The designer is the one who chooses words, expressive images, voices that refer to some parts of the content, video clips, and the way of the progression in the study content (al-Hamshari 2016). E-teaching also ensures interaction between students and faculty members and their tools, which leads to the generalization of distinguished experiences and the development of the teaching process.

Therefore, officials and educators in all countries of the world, both developed and developing, called for conducting research and studies, holding conferences and seminars, and submitting proposals and recommendations to develop and follow new trends in university educational process, such as distance and virtual education; and many universities in the Kingdom of Saudi Arabia (KSA) have turned to activate e-teaching skills.

## Problem of the Study

Notwithstanding the constant endeavor by the KSA to develop education and introduce

modern technologies in the field of teaching in general and in university in particular, many obstacles to the development of the teaching system in Saudi universities have emerged, especially with regard to e-teaching. al-Juhani (2016) and al-Oqab (2019) studies indicated that universities in the KSA have some problems with training faculty members on the use and application of e-teaching skills, which made it necessary to improve e-teaching skills of university faculty members.

The world today has experienced sudden events and fluctuations that have changed the course of life in all its areas, such as the current conditions of the Coronavirus pandemic, which forced educational institutions to turn towards online teaching. This helps us to raise the importance level of e-teaching and to demonstrate its advantages to everyone by realizing it, experimenting with it, using its available software and applications, and knowing its strengths and weaknesses. If we carefully consider the present situation, its multiple technological trends, its new capabilities, and its spectacular technological changes in a short time, this may be a turning point leading to what is beyond, and a vision and a glimpse into the future of what the educational process will be like later.

The success of e-teaching depends on the level of faculty members' practice of e-teaching skills and on their ability to deliver instruction to students through this modern type of teaching. PSAU has taken the initiative to improve e-teaching skills of faculty members by holding several specialized training courses, streaming video clips, and providing round-the-clock support by the Deanship of Information Technology and Distance Education.

The researcher through working at the university noticed the lack of a list for e-teaching skills that enables faculty members to employ these skills in teaching, which negatively affects the success of the educational process, and leads to the graduation of a generation not interested in e-teaching and its practice in education. This is what was indicated by some previous studies (Hamayel 2006; Mosleh 2013; al-Sa'adoun 2016; Suleiman 2019), which confirmed that there are many problems in the application of e-teaching. Saha's study (2020) also indicated that the COVID-19 crisis has had an impact on university education and members; that led to distancing, the shift to e-teaching in universities, and the cancellation of all university activities. Also, Draissi and Young's (2020) study confirmed that, COVID-19 posed a challenge for universities that is embodied in their continuation to overcome the difficulties they face, the increased student independence in the new teaching methods, the shift to online teaching methods, and the online assessment of students.

Given the importance of the "measurement of faculty members' mastery of e-teaching skills", this was a major motivation for choosing to conduct the current study, which aims to answer this main question: "What are the e-teaching skills that the faculty members at PSAU possess?" which branches to the following questions:

1) What is the level of practice of e-teaching skills among faculty members at PSAU in the field of technology?
2) What is the level of practice of e-teaching skills among faculty members at PSAU in the field of design?
3) What is the level of practice of e-teaching skills among faculty members at PSAU in the field of management?
4) Are there statistically significant differences at the <0.05 level in the arithmetic means of the level of practice of e-teaching skills among faculty members at PSAU due to the basic variables (Teaching Load - Students Number - Teaching Experience)?

**Importance of the Study**

1. This study may contribute to that the use of e-teaching skills is suitable with the 21st century's requirements, such as blended learning.
2. This study can provide the teaching staff and researchers with knowledge of e-teaching skills.
3. This study may benefit faculty members in the self-evaluation of their online teaching performance.
4. The results of this study may benefit those responsible for e-learning in identifying the faculty members' weaknesses with the purpose of improvement and development and their strengths with

the purpose of enhancing them among faculty members in Saudi universities.

**Objectives of the Study**

1. To identify the level of practice of e-teaching skills among faculty members at PSAU in the fields of technology, design and management.
2. To show the effect that the (Teaching Load- Students Number - Teaching Experience) variables may have on the e-teaching skills of faculty members at PSAU.

**The Limits of the Study**

The current study is limited by the following:

- The study was limited to a sample from faculty members ofPSAU in the academic year 2020.
- The study was limited to identifying the level of practice of e-teaching skills among faculty members of PSAU.

**Terms Used in the Study**

***Teaching Skills***

Sabry (2002: 535) defined 'teaching skills' as "the set of skills that a teacher should have in order to be able to perform teaching process successfully and effectively. Teaching skills include skills of teaching planning, teaching implementation and teaching evaluation".

The researcher of this study defines 'teaching skills' procedurally as "the pre-teaching skills possessed by a faculty member, such as planning, implementation and evaluation skills."

***E-teaching (Also Called E-learning)***

al-Hamshari (2016: 95) defined 'E-teaching' as "a process in which the learner interacts with the content of the lesson in many and varied ways: listening, reading, dealing with and examining content, engaging in activities, responding to questions, and sending text messages to the instructor through forums or live chat."

The researcher defines 'E-teaching' procedurally as "providing educational content through modern communication technologies and their networks, and using multiple e-teaching techniques such as: online and virtual classes, with the aim of delivering knowledge in an interactive environment and with the highest degree of efficiency."

**Literature Review**

The researcher was able to gain access to a number of studies related to e-teaching, among them al-Saif (2009) study, which indicated that the obstacles impeding faculty members from their possession of e-teaching competencies represent in many administration and teaching loads, discrepancy of academic subjects time table with training programs provided inside and outside the university, and difficulty of designing the e-courses. It also concluded that there are no differences attributed to variables of academic degree and experience in teaching.

The study by Hanafi and others (2010) showed the effectiveness of a program based on models, an electronic achievement test and a note card on the knowledge aspect and the practical performance of e-teaching skills. Yassin and Molhem's (2011) study also found that there are no differences related to the difficulties of e-teaching attributable to the variables of gender, academic qualification and years of experience. al-Ajrami's study (2012) concluded that there are no differences in the degree of acquisition of e-teaching competencies due to the variables of scientific specialization or years of experience.

al-Ghamdi's study (2012) confirmed that there is a deficiency in the effectiveness of the admission and registration system, the electronic courses system, the electronic test system and the learning and communication management system in the distance learning system. It also confirmed that there are statistically significant differences at the 0.05 level in favor of the College of Arts and Female Students. al-Sa'adoun's study (2016) concluded that the faculty members at Al-Baha University possess a medium level of technical skills and their actual use of e-teaching tools was of a moderate degree.

The study by Suhail and Mosleh (2016) aimed at measuring the e-teaching skills of faculty members at Al-Quds Open University in the State of Palestine, and it concluded that there

are differences among the faculty members in favor of females, the College of Administrative and Economic Sciences, experience of 3 years and above, and the Master's qualification. Walters et al.'s (2017) study concluded that faculty staff reported high levels of satisfaction with the accessibility of their e-courses and the electronic support they receive with regard to e-teaching, and that they reported lower levels of satisfaction with the effectiveness of electronic communication tools in e-teaching environments.

al-Zaboon and al-Rawahinih's study (2018) found that faculty members at the University of Jordan have a medium level of using the skills of e-teaching, and that the skills of using computer and Internet and those related to the use of e-teaching tools were ranked firsts. The study by Webster (2018) found that faculty skills related to e-teaching from the students perspectives include communication, engagement, knowledge of academic contents and electronic classroom organization, and that faculty skills related to e-teaching from faculty perspectives include collaboration, teaching ability, and technology use.

al-Otaibi and al-Qaramitti's (2019) study showed that there were differences in the extent to which teachers employ e-learning strategies in favor of experienced secondary school teachers. al-Jahmi's study (2019) concluded that Web 2.0 applications were of effectiveness in developing academic achievement of the knowledge aspects of e-teaching skills among students of the Faculty of Education and the Faculty of Industrial Education at Suez University. al-Uqab's study (2019) also reached that the requirements for the development of faculty members' technical skills to prepare them for e-learning environment received an "agree" response.

The study by Martin et al. (2019) found that the roles of online faculty are as follows: Facilitator, who assumes to the following roles: create a welcome video, include early activities to enhance students' comfort in using technology, check in with students regularly, be present in discussion forums, and use questions, discussion posts, and online meets in the assessment; and Course Designer, who assumes to the following roles: establish learning objectives, use active learning and align course design to the delivered content; and Course Manager, who assumes to the following roles: provide content through video, online lecture etc., encourage students' attendance and reason on e-courses design.

The results of Awiabah and Saleh's (2020) study showed that there is an adaptation to the Covid-19 crisis and an acceptable willingness to distance learning, and that the students prefer supports that have an asynchronous reaction, but the level of interaction was low and varied between different levels of study and specializations. However, access to the Moodle platform required a huge support. The results also show that there are material and human obstacles that limit students' interaction with the activities available on different platforms.

Yulia's study (2020) has demonstrated the importance of the use of variety of strategies to increase the smoothness and improvement of online education. The Basilaia and Kvavadze's (2020) study found that the transition between traditional and online education was successful, and that the system and the skills that were acquired by teachers, students and school administration staff can be used in the post-epidemic period in various cases, through increasing the effectiveness of the group teaching or increasing the students' independence work and their acquisition of new skills. al-Azzawi's (2020) study confirmed that the online education is still recent experience and needs strategic plans, field studies, and continuous assessment and evaluation to come up with realistic and tangible outcomes. Jones's (2020) study concluded that a professional development program provides faculty members in the online environment with the understanding and skills to develop engaging online courses and provides faculty members who are using online teaching with a formal training and support. It also concluded that there is a direct impact of the faculty members' continuing to enhance teaching skills in the online environment on empowering their students to gain an education and developing positive social change for their communities.

By investigating the previous studies that dealt with e-teaching, the following became clear:

- E-teaching has gained a considerable attention by many researchers, and research and studies have confirmed its importance and positive impact on the education process.
- The current study agreed with previous studies in the aim, which is to address e-teaching skills.

- The current study is consistent with the studies by al-Sa'adoun (2016), al-Zaboon and al-Rawahinih (2018), al-Otaibi and al-Qaramitti (2019), al-Uqab (2019), Awiabah and Saleh (2020), Yulia (2020), Basilaia and Kvavadze (2020), and al-Azzawi (2020) on the novelty of the e-teaching experience, and on the need for more training in e-skills and their application to university faculty members.
- Some previous studies such as (al-Hanafi et al. 2010), al-Ghamdi (2012), al-Ajrami (2012), Suhail and Mosleh (2016), Walters et al. (2017), Webster (2018), al-Jahmi (2019), Martin et al. (2019), and Jones (2020) have recommended the positivity of e-teaching. al-Saif's (2009) study and Yassin and Molhem's (2011) study also confirmed that there are obstacles to e-teaching.

## METHODOLOGY

The researcher used the descriptive survey approach, which according to al-Assaf (2012: 179) is defined as "the approach in which all members of the research population or a large sample of them are questioned, with the aim of describing the studied phenomenon only in terms of its nature and existence degree, and do not go beyond that, for example, to studying the relationship or deducing the causes". It is considered one of the most appropriate approaches to the current study, as it based on describing the actual reality of the phenomenon, then analyzing the results and building conclusions in light of the current reality.

### Study Population

The population of the current study consisted of all faculty members at PSAU, who are (1662), during the year 2020.

### The Study Sample

A random sample of (153) faculty members was selected, during the year 2020.

### Characteristics of the Study Individuals

A number of key variables were identified to describe the individuals of the study, which are: (Teaching Load - Students Number = (number of students per division) - Teaching Experience = years of teaching experience). The characteristics of the sample individuals according to these variables are given in Tables 1, 2 and 3

#### *1) Teaching Load*

**Table 1: The distribution of the study individuals according to the 'Teaching Load' variable**

| *Teaching load* | *Frequency* | *Percentage* |
|---|---|---|
| A full teaching load | 102 | 66.7 |
| Lighter teaching load with administrative duties | 51 | 33.3 |
| Total | 153 | 100 |

#### *2) Students Number/Per Division*

**Table 2: The distribution of the study individuals according to the 'Students Number' variable**

| *Students number* | *Frequency* | *Percentage* |
|---|---|---|
| 20 male/female students or less | 39 | 25.5 |
| 20-50 male/female students | 84 | 54.9 |
| more than 50 male / female students | 30 | 19.6 |
| Total | 153 | 100 |

#### *3) Teaching Experience*

**Table 3: The distribution of the study individuals according to the 'Teaching Experience' variable**

| *Teaching experience* | *Frequency* | *Percentage* |
|---|---|---|
| 10 years or less | 63 | 41.2 |
| From 10 to 20 years | 90 | 58.8 |
| Total | 153 | 100 |

### Study Tool

After reviewing the National Center for E-learning website, the literature, and previous studies related to the subject of the current study, and in light of the study's data, questions and objectives, the study tool (the questionnaire) was constructed, which consisted in its final form of two parts. The next part is an explanation of how the study tool was built, and the procedures followed to verify its validity and consistency:

***The First Part of the Questionnaire:*** It contains the primary data of the study individuals, which are: (teaching load - students' number - teaching experience).

***The Second Part of the Questionnaire:*** It consists of (56) phrases, distributed to 17 skills of three fields. Table 4 shows the number of the questionnaire phrases, and how they are distributed among the fields.

A Likert triple scale was used to obtain the responses of the study individuals according to the following degrees of agreement: (Strongly Agree- Moderately Agree –Slightly Agree), and this scale is then expressed quantitatively by giving each of these responses a score, as follows: Strongly Agree = 3, Moderately Agree = 2, Slightly Agree =1.

To determine the rang of the three Likert scale categories, the range was calculated by subtracting the minimum score from the maximum score (3–1 = 2), and the result was divided by the maximum score of the scale (2 ÷ 3 = 0.67), then this value was added to the minimum score in the scale (1) to determine the upper limit for the first category. The length of the range was used to obtain an objective judgment on the arithmetic mean of the study sample responses after they were statistically treated.

**A) The Study Tool Validity**

The researcher verified the validity of the study tool through:

***1) Verifying the Apparent Validity***

To verify the extent of the apparent validity of the questioner, and to make sure that it measures what it was designed to measure, it was presented in its initial form to a group of 5 arbitrators specialized in the subject of the study; these arbitrators were asked to evaluate the quality of the questionnaire in terms of its ability to measure what it was prepared for, and to judge its suitability for the aims of the study, by determining the clarity of the phrases, their affiliation to the axis, their importance, and their linguistic correctness. Arbitrators were also asked to express their opinions in terms of modification, deletion, or addition to the phrases. After taking their opinions and reviewing their notes, the necessary amendments that agreed upon by the majority of the arbitrators were made, and then the questionnaire in its final form has worked out.

***2) Verifying the Internal Consistency Validity***

To find out the degree to which each of the questionnaire phrases is related to the overall score of the axis, Pearson's Correlation Coefficient was calculated. Results showed that the value of the correlation coefficient between each of the phrases with its axis is positive and statistically significance at (0.01) level.

**B) The Study Tool Consistency**

The Cronbach's alpha coefficient (á) was used to verify the consistency of the study tool. Results found that the tool is highly reliable.

***Statistical Processing Methods***

Several appropriate statistical processing methods were used through the (SPSS) program, by which the following statistical measures were calculated: frequencies, percentages, weighted means; arithmetic means, and standard deviation.

## RESULTS AND DISCUSSION

*The answer to the main question (What are the e-teaching skills that the faculty members at PSAU possess?)*

To determine what e-teaching skills that faculty members at PSAU have, the arithmetic mean of the dimensions/fields of e-teaching skills were calculated and faculty members' levels of e-teaching skills were determined. Table 4 shows the overall results of these dimensions.

From Table 4 it is evident that the study individuals were strongly agreed with the practice of faculty members at PSAU for e-teaching skills with an arithmetic mean of (2.67 out of 3), and the arithmetic means ranged between (2.83-2.50). Given that the detailed arithmetic means for the phrases of the dimensions ranged between (2.83-2.50), these are within the "Strongly Agree" category. The 11$^{th}$ Skill, "Observing university policies and regulations in designing the course", came with an arithmetic mean of (2.83 out of 3), and ranked

**Table 4: The study individuals' responses to the dimensions of e-teaching skills of faculty members at PSAU**

| *S. No.* | *Dimension of skill* | *Arithmetic mean* | *Standard deviation* | *Rank* |
|---|---|---|---|---|
| 1 | 1st skill | 2.57 | 0.41 | 14 |
| 2 | 2nd skill | 2.8 | 0.322 | 3 |
| 3 | 3rd skill | 2.75 | 0.48 | 6 |
| 4 | 4th skill | 2.66 | 0.355 | 11 |
| 5 | 5th skill | 2.73 | 0.361 | 7 |
| 6 | 6th skill | 2.8 | 0.297 | 2 |
| 7 | 7th skill | 2.6 | 0.419 | 13 |
| 8 | 8th skill | 2.67 | 0.473 | 10 |
| 9 | 9th skill | 2.61 | 0.565 | 12 |
| 10 | 10th skill | 2.55 | 0.573 | 15 |
| 11 | 11th skill | 2.83 | 0.306 | 1 |
| 12 | 12th skill | 2.69 | 0.394 | 8 |
| 13 | 13th skill | 2.69 | 0.506 | 9 |
| 14 | 14th skill | 2.75 | 0.315 | 4 |
| 15 | 15th skill | 2.51 | 0.414 | 16 |
| 16 | 16th skill | 2.75 | 0.448 | 5 |
| 17 | 17th skill | 2.5 | 0.416 | 17 |
| E-teaching skills of faculty members at PSAU | | 2.67 | 0.28 - | |

the first, while the 17th skill, "Objectively and fairly evaluate students", came with an arithmetic mean of (2.50 out of 3), and ranked the last.

This result is explained by the fact that the faculty members at PSAU are keen on implementing the university's rules and regulations, especially as they are an example for their students, which has enhanced their observance of the university's regulations in education and evaluation, and in designing and implementing e-courses.

This result is consistent with that of al-Sa'adoun's study (2016) and Webster's study (2018) regarding faculty members' technology skills, their perceptions of e-teaching and their actual use of these skills.

This result also agrees with that of al-Ghamdi's study (2012), which demonstrated the effectiveness of the communication management system in a distance learning system. It is also in accordance with al-Azzawi's study (2020), which indicated the need for continuous assessment and evaluation to come up with realistic and tangible outcomes.

*The answer to the first question (What is the level of practice of e-teaching skills among faculty members at PSAU in the field of technology?)*

To determine the level of practice of e-teaching skills among faculty members at PSAU in the field of technology, the arithmetic mean of the dimensions of technology field skills were calculated and their practice levels of e-teaching skills in the field of technology were determined. Table 5 explains the overall results of these dimensions.

**Table 5: The study individuals' responses to the level of practice of e-teaching skills in the field of technology**

| *S. No.* | *Dimension of skill* | *Arithmetic mean* | *Standard deviation* | *Rank* |
|---|---|---|---|---|
| 1 | 1st skill | 2.57 | 0.41 | 3 |
| 2 | 2nd skill | 2.8 | 0.322 | 1 |
| 3 | 3rd skill | 2.75 | 0.48 | 2 |
| First Field: Technology | | 2.70 | 0.310 | - |

It is clear from Table 5 that the arithmetic mean of the study individuals' responses in the field of technology was (2.70 out of 3), which indicated that the study individuals were "strongly agreed" with that the faculty members at PSAU highly practice e-teaching skills in the field of technology. It is also found that the arithmetic means for this field's phrases ranged between (2.80 - 2.57), these are within the "Strongly Agree" category. The 2nd skill came with an arithmetic mean of (2.80 out of 3), and ranked the first, while the 1st skill came with an arithmetic mean of (2.57 out of 3), and ranked the last.

This finding is explained by the fact that faculty members at PSAU are keen to learn about the advancements in their specialties through the means of technology, which increase their use of Internet browsers. This finding is consistent with those of al-Jahmi's (2019) and Yulia's (2020) studies, which showed the importance of using technology to increase the smoothness and improvement of online education. This finding is also consistent with those of the studies by Walters et al. (2017), al-Zaboon and al-Rawahinih (2018), and al-Azzawi (2020), which clarified the level of possessing skills of using e-learning tools by the faculty members, and showed that there is a need for continuous assessment and evaluation to come up with realistic and tangible outcomes. This finding also agrees with those of studies of al-Ajrami (2012), Suhail and Mosleh (2016), and Awiabah and Saleh (2020), which showed that there is an adapta-

tion and willingness to distance learning, with differences in levels of learners, and also between faculty members in teaching experience and specialization.

*The answer to the second question (What is the level of practice of e-teaching skills among faculty members at PSAU in the field of design?)*

To determine the level of practice of e-teaching skills among faculty members at PSAU in the field of design, the arithmetic mean of the dimensions of design field skills were calculated and their practice levels of e-teaching skills in the field of technology were determined. Table 6 explains the overall results of these dimensions.

**Table 6: The study individuals' responses to the phrases of the field of design**

| *S. No.* | *Dimension of skill* | *Arithmetic mean* | *Standard deviation* | *Rank* |
|---|---|---|---|---|
| 1 | 4th skill | 2.66 | 0.355 | 7 |
| 2 | 5th skill | 2.73 | 0.361 | 3 |
| 3 | 6th skill | 2.8 | 0.297 | 2 |
| 4 | 7th skill | 2.6 | 0.419 | 9 |
| 5 | 8th skill | 2.67 | 0.473 | 6 |
| 6 | 9th skill | 2.61 | 0.565 | 8 |
| 7 | 10th skill | 2.55 | 0.573 | 10 |
| 8 | 11th skill | 2.83 | 0.306 | 1 |
| 9 | 12th skill | 2.69 | 0.394 | 4 |
| 10 | 13th skill | 2.69 | 0.506 | 5 |
| Second Field: Design | | 2.69 | 0.298 | - |

It is clear from Table 6 that the arithmetic mean of the study individuals' responses in the field of design was (2.69 out of 3), which indicated that the study individuals were "strongly agreed" with the practice of e-teaching skills in the field of design. It is found that the arithmetic means for this field's phrases ranged between (2.83 - 2.55), these are within the "Strongly Agree" category. The 11th skill came with an arithmetic mean of (2.83 out of 3), and ranked the first, while the 10th skill came with an arithmetic mean of (2.55 out of 3), and ranked the last. This finding is explained by the fact that the faculty members at PSAU are keen on implementing the university's rules and regulations, especially as they are an example for their students, which has enhanced their observance of the university's regulations in education and evaluation, and in designing and implementing e-courses.

This finding is in accordance with that of al-Saif (2009) study, which indicated that there are obstacles facing faculty members in designing e-courses. This finding also agrees with those of the studies of al-Hanafi et al. (2010) and al-Ghamdi (2012), which demonstrated the effectiveness of the learning and communication management system in the distance learning system and its effectiveness on the knowledge aspect and the practical performance of e-teaching skills. This finding is also consistent with those of the studies of al-Otaibi and al-Qaramitti (2019), Martin et al. (2019), and Jones (2020) regarding the extent of employing e-teaching strategies by teaching staff and their design of e-courses.

*The answer to the third question (What is the level of practice of e-teaching skills among faculty members at PSAU in the field of management?)*

To determine the level of practice of e-teaching skills among faculty members at PSAU in the field of design, the arithmetic mean of the dimensions of design field skills were calculated and their practice levels of e-teaching skills in the field of management were determined. Table 7 explains the overall results of these dimensions.

**Table 7: The study individuals' responses to the phrases of the field of management**

| *S. No.* | *Dimension of skill* | *Arithmetic mean* | *Standard deviation* | *Rank* |
|---|---|---|---|---|
| 1 | 14th skill | 2.75 | 0.315 | 1 |
| 2 | 15th skill | 2.51 | 0.414 | 3 |
| 3 | 16th skill | 2.75 | 0.448 | 2 |
| 4 | 17th skill | 2.5 | 0.416 | 4 |
| Third Field: Management | | 2.62 | 0.319 | - |

It is clear from Table 7 that the arithmetic mean of the study individuals' responses in the field of design was (2.62 out of 3), which indicated that the study individuals were "strongly agreed" with the practice of e-teaching skills in the field of management. It is found that the arithmetic means for this field's phrases ranged between (2.75 - 2.50), these are within the "Strongly Agree" category, which is embodied in the dimension of 14th skill, as it came with an arithmetic mean of (2.75 out of 3); and in the dimension of 16th skill, as it came also with an arith-

metic mean of (2.75 out of 3).The dimension of 17th skill came with an arithmetic mean of (2.50 out of 3) and ranked the last.

This finding is explained by the fact that the faculty members at PSAU are keen to communicate with their students to meet their educational needs and support their improvement, which enhance the continuous communication between faculty members and students through emails and periodic notices.

This finding is consistent with those of the studies of Yassin and Molhem (2011), al-Ghamdi (2012), and al-Otaibi and al-Qaramitti (2019), which showed the importance of e-teaching and following up on the students' progress in the course. This finding also agreed with that of the studies of Basilaia and Kvavadze (2020), in taking advantage of the system and skills during the transition from traditional to online education. This finding also agrees with that of al-Uqab (2019) study, in preparing the teaching staff for the e-teaching environment.

*The answer to the fourth question (Are there statistically significant differences at the <0.05 level in the arithmetic means of the level of practice of e-teaching skills among faculty members at PSAU due to the basic variables (teaching load - number of students - teaching experience)?)*

### *1) Differences According to 'Teaching Load' Variable*

To find out if there are statistically significant differences in the study individuals' responses according to the 'Teaching Load' variable, the Independent Sample t-test was used to explain the significance of the differences between the study individuals' responses, and the results were as shown in Table 8.

The results in Table 8 shown it clear that there are no statistically significant differences at (0.05) level or less between the study individuals' responses about (Second Field: Design, Third Field: Management, and Overall skills) according to the 'Teaching Load' variable. It is also clear through the results shown in Table 8 that there are statistically significant differences at (0.05) level or less between the study individuals' responses about (First Field: Technology) according to the 'Teaching Load' variable in favor of those with "lighter teaching load with administrative duties".

### *2) Differences According to the 'Students Number' Variable*

To find out if there are statistically significant differences in the study individuals' responses according to the 'Students Number' variable, the "One-way ANOVA" was used to explain the significance of the differences between the study individuals' responses according to the 'Students Number' variable, and the results were as shown in Table 9.

The results in Table 9 shown it evident that there are no statistically significant differences at (0.05) level or less between the study individuals' responses about (Second Field: Design, Third Field: Management, and Overall skills) accord-

**Table 8: Independent sample t-test results for the differences between the studies: Individuals' responses according to the 'Teaching Load' variable**

| *Field* | *Teaching load* | *Frequency* | *Arithmetic mean* | *Standard deviation* | *t-value* | *Significance* | *Comment* |
|---|---|---|---|---|---|---|---|
| First Field: Technology | A full teaching load | 102 | 2.66 | 0.326 | -2.126 | 0.035* | Significance |
| | Lighter teaching load with administrative duties | 51 | 2.78 | 0.263 | | | |
| Second Field: Design | A full teaching load | 102 | 2.72 | 0.303 | 1.473 | 0.143 | No significance |
| | Lighter teaching load with administrative duties | 51 | 2.64 | 0.284 | | | |
| Third Field: Management | A full teaching load | 102 | 2.65 | 0.35 | 1.531 | 0.128 | No significance |
| | Lighter teaching load with administrative duties | 51 | 2.57 | 0.243 | | | |
| Overall skills | A full teaching load | 102 | 2.69 | 0.301 | 0.941 | 0.349 | No significance |
| | Lighter teaching load with administrative duties | 51 | 2.64 | 0.232 | | | |

*The significance at the level of 0.05 and less ** The significance at the level of 0.01 and less.

ing to the 'Students Number' variable. It is also evident through the results shown in Table 9 that there are statistically significant differences at (0.05) level or less between the study individuals' responses about (First Field: Technology) according to the 'Students Number' variable.

To determine the differences between the study sample groups - (according to the students' number they had) - are in favor to any group, a Scheffer' test was used. It indicates that that there are statistically significant differences at (0.05) level between the study individuals whose students number is '20 male/female students or less' and the study individuals whose students number is '20-50 male/female students', about the (First Field: Technology), in favor of those whose students number is '20 male/female students or less'.

### *3) Differences according to the 'Teaching Experience' variable*

To find out if there are statistically significant differences in the study individuals' responses according to the 'Teaching Experience' variable, the Independent Sample T-test was used to explain the significance of the differences between the study individuals' responses, and the results were as shown in and found that there are no statistically significant differences at (0.05) level or less between the study individuals' responses about (First Field: Technology, Second Field: Design, Third Field: Management, and Overall skills) according to the 'Teaching Experience' variable.

## CONCLUSION

The current study seeks to recognize how faculty members at PSAU practice e-teaching as per three different factors: teaching load, students' size in the class, and teaching experience. Their perceptions were recorded using survey that was designed to find out how they view e-teaching fields of technology, design, and management during the COVID-19. Results found that the participants' institution has efficiently practiced e-teaching at a high level in terms of technology, design, and management. Results from inferential statistics revealed that there were not statistically significant differences in the participants" views to the moderators' variables examined in this study; teaching load, students' size in the class, and teaching experience. The participants found e-teaching interesting and enjoyable.

## RECOMMENDATIONS

In light of the results obtained, the researcher recommends designing training programs to develop e-teaching skills of faculty members. Further, teacher preparation programs should include e-teaching skills and the necessary training on them. The author also recommends providing incentives for faculty members who are more distinguished in e-teaching and providing them training on designing interactive lessons and using e-learning platforms. The author strictly recommends benefiting from the experiences

**Table 9: One-way ANOVA results for the differences in the study individuals' responses according to the 'Students Number' variable**

| *Field* | *Source of variation* | *SS* | *DF* | *MS* | *F Value* | *Significance level* | *Comment* |
|---|---|---|---|---|---|---|---|
| First Field: Technology | Between-group | 0.703 | 2 | 0.351 | 3.790 | 0.025 | *Significance |
| | Within-group | 13.907 | 150 | 0.093 | | | |
| | Total | 14.609 | 152 | - | | | |
| Second Field: Design | Between-group | 0.11 | 2 | 0.055 | 0.615 | 0.542 | No significance |
| | Within-group | 13.411 | 150 | 0.089 | | | |
| | Total | 13.521 | 152 | - | | | |
| Third Field: Management | Between-group | 0.1123 | 2 | 0.062 | 0.600 | 0.550 | No significance |
| | Within-group | 15.392 | 150 | 0.103 | | | |
| | Total | 15.515 | 152 | - | | | |
| Overall Skills | Between-group | 0.045 | 2 | 0.023 | 0.284 | 0.753 | No significance |
| | Within-group | 11.872 | 150 | 0.079 | | | |
| | Total | 11.917 | 152 | | | | |

* The significance at the level of 0.05 and less

of the developed countries in the field of programming curriculum in an interactive manner.

## SUGGESTIONS FOR FUTURE RESEARCH

Based on the findings obtained from the current study, the author suggests conducting future studies on the obstacles that limit the effectiveness of e-teaching in universities. Besides, future projects may conduct studies on ways to improve the reality of e-teaching in universities.

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