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Paths the Saudi Educators in Higher Education Exercise for Professional Development to Use Instructional Technologies

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مستخلص الدراسة:

تشهد الجودة في التعليم للمؤسسات التعليمية بالمملكة العربية السعودية نموا متزايدا في السنوات الأخيرة. يعود ذلك التركيز في جودة التعليم الى افتراض ارتباطه الوثيق والايجابي بالتنوع الاقتصادي والنمو المستدام. ولتحسين جودة التعليم في جميع مستوياته، اتخذت الحكومة السعودية تدابير مختلفة لدفع مؤسساتها التعليمية لتبني استخدام التقنيات التعليمية الحديثة. ولإلقاء الضوء على ذلك تهدف الدراسة الحالية على توضيح ما هي الخيارات التي يقوم بها التربويون السعوديون في التعليم العالي لتطوير أنفسهم مهنيا لاستخدام التقنيات التعليمية المختلفة ذات الصلة، وما مدى كفاءة مثل هذه الخيارات، وكذلك التعرف على فاعلية دمج التقنيات التعليمية في التعليم التقليدي السائد كاستراتيجية في التدريس. استخدم الباحث المقابلات الشخصية مع أربعة أعضاء من هيئة التدريس كأداة لهذه الدراسة واشتملت المقابلة على خمسة أسئلة، كما تم استخدام أداة ثانية وهي الملاحظات المنظمة من قبل الباحث والتي أجريت في ثلاثة من الكليات بمؤسسات التعليم العالي لمعرفة مدى تأثير استخدام أو عدم استخدام التقنيات التعليمية على العملية التعليمية. كشفت نتائج الدراسة على أن معظم التربويين السعوديين يلتحقون بورش عمل وندوات فاعلة لتطوير كفاءاتهم المهنية لدمج استخدام تقنيات التعليم في التدريس. كما أظهرت النتائج أن تقنيات التعليم تساعد التربويين في التدريس بشكل فعال.

الكلمات المفتاحية: المملكة العربية السعودية، التعليم العالي، تقنيات التعليم، التطوير المهني، ورش العمل، الندوات.

Abstract

Saudi Arabia's emphasis on the quality, of education that is prevalent in its educational institutions, has quality has grown tremendously in recent years. The primary reason for this robust emphasis on education's quality is the presumption that education's quality is associated positively and strongly with economic diversity and sustainable growth. To improve education's quality at all its tiers, the Saudi government has taken different measures that include issuing of policy direction to its educational institutions to persuade or push their faculties to adopt modern instructional technologies. This qualitative study intended to find 1) *what options do the Saudi educators in higher education exercise mostly to professionally develop themselves to use various relevant instructional technologies*, 2) *how efficient these options are*, and 3) *whether the incorporation, of instructional technologies in conventional teaching strategies, make conventional teaching strategies efficient or not*. The results, of the qualitative study that are based on four interviews and three structured observations as a sample of the current study, reveal that most of the Saudi educators attend workshops and seminars to develop professional competencies to use instructional technologies. The results also show that instructional technologies help educators in teaching effectively.

Keywords: *Higher-education, Instructional Technologies, Professional Development, Modern Teaching, Workshops, Seminars, Saudi Arabia, and Qualitative Study.*

Introduction

Since the unveiling of the 2030-Vision by the crown prince Muhammad Bin Salman on 25th April of the year 2016, the Saudi state is emphasizing the education sector robustly and inventively (KSA.gov, 2020). The primary goal of this vigorous and innovative emphasis on Saudi Arabia's education sector is to improve education's quality at all its levels, especially at the higher-education level. Its reason is that the Saudi state now acknowledges this fact strongly that without improving education's quality at Higher Education level, it cannot transform its economy from an oil-dependent economy to a knowledge-based economy (Nurunnabi, 2017; Amirat & Zaidi, 2020).

For the improvement in education's quality at all its tiers, Saudi Arabia's education ministry has directed all the public schools, colleges and universities to 1) make their curricula relevant and 2) improve the methods/strategies that their educators traditionally use to transfer information/knowledge to the students (Alenezi, 2017). Most of the methods, which the public educational institutions are adopting to transfer their curricula-related information/knowledge efficiently to their students, are based on technology as it is a popular perception that technology makes transmission of knowledge to the students simple and effective (Tashkandi & Al-Jabri, 2015). For instance, the public schools-colleges-universities in Saudi Arabia are now increasingly devising and employing such teaching methods/strategies for effective transmission of information/knowledge to the students that use technologies such as projectors, tablets, interactive whiteboards, augmented reality (AR), and Learning Management System (Alenezi, 2017).

Since most of the educators in public colleges and universities are not very proficient in using modern instructional technologies to transfer their subject related information to their students, most of the educators in public colleges and universities are now acquiring competencies to use modern instructional technologies (professional development) (Mulhim, 2014).

Though it is known that the educators in Saudi Arabia are acquiring competencies to use relevant and modern instructional technologies for effective or high-quality teaching; however, it is not clear what means/platforms they are emphasizing to realize this goal. This research paper is an exercise to learn 1) what means/platforms the Saudi educators mostly emphasize to acquire that knowledge and skills (professional development) that are necessary to use different teaching-enhancing technologies, 2) how effective these means/platforms are in attaining the proficiencies that are needed to use modern instructional technologies for effective teaching, and 3) how helpful the modern teaching/instructional technologies are in transferring subject-related information to the students.

Literature Review

Several studies have found that there exists a strong and positive correlation between a country's sustainable economic growth and quality of education provided at its secondary and post-secondary educational institutions (Nazarenko & Khronusova, 2017; Raja & Nagasubramani, 2018; Ratheeswari, 2018). For instance, Joan Manuel F. Mendoza, Alejandro Gallego-Schmid, and Adisa Azapagic (2019) found that higher-education institutions are strategic agents in supporting sustainable development (Mendoza, Gallego-Schmid, & Azapagic, 2019). Similarly, the study by Roberta Comunian, Abigail Gilmore, and Silvie Jacobi (2015) inferred that higher education's quality is directly and strongly correlated with innovation that is prerequisite for a robust and creative economy.

Generally, countries take several kinds of measures to improve education's quality in their educational institutions (Arum, Roksa, & Cook, 2016; CoE, 2014; Eggins, 2014). Most of these measures, the systematic scrutiny of relevant literature reveals, are financial and administrative. For instance, to improve education's quality in public-run educational institutions, a state usually increases the funding and administrative autonomy of these public-run educational institutions as such increases eventually translate into an improvement in education's quality.

The methodical and thorough study of the subject (quality of education) reveals that states are not relying on financial and administrative strategies/measures only to improve education's quality in their educational institutions but also devising policies and suggesting changes for the mentioned effect (sizeable improvement education's quality) (Alghamdi & Holland, 2020). For instance, several states have suggested their educational institutions to direct their educators to integrate the latest instructional technologies in their teaching methods/strategies (Saltman & Means, 2018). This suggestion is based upon the *presumption* that the latest instructional technologies make teaching result-oriented and effective.

The systematic review of the relevant literature to learn about the authenticity of the aforementioned presumption reveals that the presumption is well-grounded in facts. For instance, AR. Saravanakumar (2018) asserts that Information and Communication Technologies (ICTs) not only help educators in gaining their students' attention (attentiveness) but also help them in developing their students' understanding about a topic (Saravanakumar, 2018). Similarly, the study by Karthik Muralidharan, Abhijeet Singh, and Alejandro J. Ganimian (2019) found that well-structured and technology-aided teaching programs can improve education's quality immensely and in a very brief period.

Based on this presumption, Saudi Arabia has also directed its public educational institutions to *push* their educators to adopt instructional technologies for effective teaching (Albugami & Ahmed, 2015; Alghamdi & Holland, 2020). However, the scrutiny of the literature reveals that educational institutions in Saudi Arabia are not pressing their educators to incorporate instructional technologies in their teaching methods/strategies as the incorporation requires professional development that is mostly a long, costly, and disruptive process.

Even though educational institutions in Saud Arabia are not pushing their faculties much to develop competencies to use relevant instructional or teaching technologies so that they may use them during their teaching to make their teaching effective, educators in Saudi Arabia have begun professionally developing themselves to use pertinent instructional technologies as they recognize that sooner than later, technology will become a central element of teaching in Saudi Arabia.

Research Questions

The research questions, which this qualitative study intends to answer, are the following:

General Research Question 1: What options do the Saudi educators exercise in higher education mostly to develop such professional competencies that allow them to use particular instructional technologies efficiently?

General Research Question 2: How effective the means/options/platforms are that the Saudi educators in higher education emphasize mostly to develop such professional competencies that are essential to exploit/use modern instructional technologies?

General Research Question 3: How effective modern instructional technologies are in making teaching effectual? (**Note:** To answer the devised general research questions, the researcher will select and emphasize that research method, which is most suitable.)

Research Methodology

The number of research methods or paradigms that the researcher can emphasize for answering the devised research questions is three. One such research method is a qualitative research method, which is based on the methodical examination of that evidence or data that is non-numeric (qualitative) (Ezzy, 2013). The other research method that can help in getting answers to the developed research questions is a quantitative research method, which is based on the inferential analysis numeric data (Mellinger, 2016). The third research option, which the researcher can emphasize to answer the devised research questions, is a mixed research-method; it is such a research method that uses both qualitative and quantitative research techniques to answer the research questions. Since the evidence or data required to answer the devised research questions must be rich as the research questions are intricate and loaded, the researcher will use a qualitative research method to answer the devised research questions. Generally, it is not easy to analyze qualitative data as it has such information in large chunks that is not needed or required. This is one of the reasons why it is refined before its analysis (Opdenakker, 2006.)

Instruments to Gather Evidence

Two different instruments the researcher used to gather that evidence or data that was required to answer the devised general research questions. For instance, the researcher used semi-structured interviews with open-ended questions as a data-collection tool to gather that evidence or data, which was needed to answer the General Research Question 1 and General Research Question 2. However, to gather the

information that the researcher needed to answer the General Research Question 3, the researcher used not only *semi-structured interviews* as a data-collection instrument but also the structured observations (Denzin & Lincoln, 1994; Billups, 2019).

Strategy to Draw the Sample

To draw the sample for those Saudi educators in higher education, who have professionally developed themselves only recently to use the latest instructional technologies to teach their students efficiently, the researcher will use *the snowball sampling technique*. The reason for using this non-probability sampling technique to draw the sample for this study is that it allows researchers to draw an accurate sample in a very short period.

Sample Size

The number of interviews and structured observations that the researcher conducted and undertook (respectively) to gather the relevant/authentic data was five (5) and three (3) respectively. The number of interviews for this research exercise may seem small but in actuality, it is not. For instance, the systematic review of similar qualitative studies revealed that three (3) to four (4) interviews would be enough to gather that data/evidence that was needed to answer the devised research questions appropriately (Dworkin, 2012).

How Research Participants Were Contacted?

Opened-ended questions for the Semi-structured Interviews

1. For how long have you been teaching at this level (college/university)?
2. Is your method/strategy of teaching conventional or based on instructional technologies? (validation question)

3. What mean/source/platform did you emphasize to acquire that knowledge and skill that were necessary to use those modern technologies that presumably made teaching effective?
4. Was the mean/source/platform efficient that you emphasized to acquire that knowledge and skills that were essential to use those different teaching-related modern technologies that presumably make teaching effective?
5. Did you require time in acquiring proficiency to use different modern technologies in class environment for teaching-related purposes?
6. What kind of challenges did you face in acquiring proficiency to use different modern technologies in class environment for teaching-related purposes?
7. Did the incorporation of modern technology in your teaching method/strategy make your teaching effective?
8. What is your opinion about the technology-based strategies? Are they more effective than the conventional teaching strategies in transferring subject-related information to the students?

Results

Summaries of the Recorded Interviews

The plan was to conduct five (5) interviews to gather relevant and authentic evidence to answer the three general questions; however, because of the COVID-19 pandemic, only four (4) interviews the researcher was able to conduct. Notwithstanding, the researcher was able to gather the required information in such size that was required to answer the devised questions appropriately. In this section of the research exercise, the researcher intends provide a summary of the eight interviews that he conducted in the span of forty-seven days. All the interviews were conducted at a place and in an environment that were convenient and conducive for the interviewees (research participants).

1-Summary of Interview with Research Participant

The interviewee, who was a forty-six years old male, taught students at the college level for the last eleven (11) years. The interviewee did not begin his teaching career as a college teacher; in fact, his professional teaching career started as a Maths teacher for a public school at the age of twenty-six (26). The interviewee revealed during the answer to the first question of the interview that in the beginning, he found it quite difficult to teach his students; however, after some time, teaching became quite easy for him. In the interviewee's opinion, it was primarily due to fact that he was able to develop *good* teaching strategies to teach his students easily and effectively.

Regarding the use of technology, the interviewee revealed that he was incorporating technology in his teaching method or strategy gradually as the use of technology in teaching was supposedly associated positively with effective and simple teaching. About the pace of integrating technology in his teaching method, the interviewee divulged that the process of integrating technology in his teaching strategy was slow as he was finding quite hard to use modern technologies for very specific teaching-related ends.

In answer to question what mean/platform he emphasized to acquire relevant knowledge and skills for effective use of modern technologies for teaching-related purposes, the interviewee told that he attended workshops and *seminars* on *modern teaching* for instructional technologies-related professional development. When asked whether the interviewee emphasized other means also for the mentioned cause, the interviewee revealed that he watched videos relevant to instructional technologies on the internet also to use different teaching-related technologies effectually in class for pre-defined objectives (maintaining of schedules/transfer of subject-related knowledge).

When asked about the effectiveness of the means/platforms that the interviewee emphasized for professional development, the interviewee divulged that all the means/platforms he emphasized for the professional development were effective; both sources/means helped him greatly in developing instructional technology-related professional competencies.

To question about the time he took in acquiring the competencies that he needed to use modern technologies for teaching proficiently, the interviewee replied that it took him around four weeks to develop the *core competencies* to use modern technologies for teaching-related causes; however, the technique to use modern technologies excellently for very specific teaching-related purposes was still perfecting. The interviewee was of the view that he would need at least a year to perfect the use of modern technologies in a teaching environment for teaching-related reasons.

Regarding the efficiency of the technology-based teaching techniques, the interviewee was found little confused. For instance, the interview was not certain whether the technology-based teaching strategies were more effective or conventional. This was one of the reasons why the interviewee abstained to give a decisive or conclusive opinion about technology-based teaching strategies.

2-Summary of Interview with Research Participant

The interviewee/Research participant-2, who was a twenty-nine years old female, divulged in response to the interview's first question that she was teaching at college students for the last four years. During this period, she revealed, she devised and adopted different teaching strategies and techniques to teach her students competently. When the interviewer (researcher) asked the interviewee whether any of her

teaching techniques were based upon the use of modern technology, the interviewee told that most of her teaching strategies were based upon the use of modern instructional/teaching technologies “such as tablet and projector”.

In answer to question what mean(s) or option(s) did she emphasize to develop competency to use modern technologies for teaching, she replied that she attended a couple of seminars/workshops on the use of technology in teaching for the mentioned effect. According to the interviewee, those seminars/workshops were enough to develop competencies to use those modern technologies that supposedly make teaching simple and effectual. The interviewee did not tell much about the content and duration of the seminars/workshops that she attended.)

To question whether the interviewee faced any challenges in attaining those proficiencies required to use different modern technologies in a learning environment for teaching-related purposes, the interviewee responded that since she was a *tech-savvy*, she attained mentioned proficiencies quite easily and in a very short period. When the interviewee was asked whether she could use modern technologies with perfection to realize her different teaching-related goals, she divulged that she was still perfecting the use of modern technologies in a teaching environment to realize her primary teaching goals.

In response to query whether technology's integration in her teaching strategy improved her teaching strategy or not, the interviewee revealed that technology did facilitate her in transferring subject-related information to her students efficiently. However, she acknowledged that she could not tell for certain how much her teaching had improved because of the integration of modern technology in her teaching strategies.

3-Summary of Interview with Research Participant

The interviewee, who was a twenty-five years old male that taught General Science subject, told the interviewer (the researcher) that he was teaching at the college level for the last one (1) year. During this period, the interviewee (Research Participant-3) revealed, he amended his teaching strategy several times to make it effective or result-oriented. When the interviewer asked whether the interviewee's current teaching strategy had technology as its component, the interviewee told that technology was a central element of his teaching strategy.

To question what option(s) did the interviewee exercise to develop proficiency to use different technologies to make his teaching effective, the interviewee answered that he watched different videos online to know how different technologies were used to deliver subject-related information easily and accurately to the targeted audience/students. When the interviewer asked the interviewee for how long did he watch such videos to develop proficiency to use relevant technologies for teaching-related causes, the interviewee divulged that he watched around a couple of dozen videos for a week for the mentioned effect.

To query whether the interviewee faced any challenge in attaining proficiency to use various teaching-related modern technologies, the interviewee's response was that he did not face any challenge in attaining the proficiency for the mentioned effect as most of the teaching-related modern technologies *were* very familiar to him. The interviewee also claimed during the reply to the query that a tech-savvy person would take a very small period in developing the capability to use modern instructional technologies.

When the interviewee was asked what technologies he generally used to make his teaching effective (simple and highly result-oriented), the interview disclosed that mostly he used a projector to teach his students effectively; however, for last few months, he elaborated further, he was also using augmented reality (AR) for teaching.

About the effectiveness of technology-based teaching strategies, the interviewee was of the view that technology-based teaching strategies were far superior to conventional teaching strategies. The reason the interviewee gave for endorsing technology-based teaching strategies over conventional teaching strategies was that the technology-based teaching strategies made his teaching “simple, fun, and high-quality”.

4-Summary of Interview with Research Participant

Research Participant-4, who was a fifty-two years old male, shared with the researcher that he was teaching *mechanics* to Masters’ students for more than two decades in a public university. When asked about his current teaching strategy, Research participant-4 revealed that his current teaching strategy was very conventional and based upon his teaching experience. When the interviewer inquired whether modern instructional technologies were his teaching strategy's component or not, Research Participant-4 disclosed that he did not use technology much for teaching. The reason that the interviewee/Research Participant-4 gave for not employing technology much for learning or teaching-related reasons was that he was not very proficient at using different modern technologies/gadgets for learning or teaching-related causes.

To question whether he attempted to learn how to use modern instructional technologies for teaching-related goals, the interviewee replied that he tried to develop the competency to use modern teaching-related technologies for the mentioned effect. When asked what mean/option he emphasized/exercised to develop the competency, the interviewee revealed that he attended various workshops on modern teaching methods for the mentioned goal.

Regarding the time and effort that he needed to develop the capability to use modern teaching-related technologies, the interviewee divulged it took him much time [three weeks] and effort (several workshops) to attain proficiency to use different teaching-related tangible and intangible technologies that included projector, tablet, applications for content presentation, etc.

To question whether he faced any challenges in learning how to use various teaching-enhancing technologies or not, the interviewee answered that he faced numerous challenges in adopting modern-technologies for effective teaching. One of the challenges, the interviewee told, was to identify that learning platform that could help him in developing competency to use teaching-enhancing current technologies easily and quickly. The other challenge, the interviewee told, was to prioritize learning accurately; [*the proficiency about which technology I must acquire first*]. The third challenge, the interviewee divulged, was about the use of technologies; how different technological devices/machines/equipment I could use most efficiently in a learning environment.

When asked whether technology's integration in his teaching strategy improved his teaching strategy or not, Research Participant-4 told technology's integration for the mentioned effect did not make *any real and positive difference to the teaching strategy*; in fact, it complicated the teaching, the interviewee claimed.

Structured Observations

The researcher did not rely on the interviews only to collect that qualitative evidence that was required to answer Research Question-3; he undertook structured observations at three different educational sites/institutions also to learn whether the use or lack of instructional technologies in learning environment affected learning or not (Clarke, 2014).

1-Structured Observation : The researcher participated as an inert observer in a university college in which the technology interactive *whiteboard* was being used by the teacher to make learning easy and effectual for the students. During the fifty minutes lecture upon a certain subject, which was delivered with the help of an interactive whiteboard, the students were both silent and attentive.

2- Structured Observation : In Organic Chemistry class, the researcher participated as an inert or silent observer to learn 1) what type of technology the teacher used to make the learning of her students effective and 2) how effective was the use of technology in making learning effectual. The researcher learned from the participation that the instructor used a projector to make the learning of her students effectual/result-oriented. For instance, the instructor used a projector to show images and videos related to the topic to the students so that they could comprehend the topic easily.

At the end of the lecture, the students were asked questions related to the subject, which most of the students answered successfully

3- Structured Observation : The researcher undertook this structured observation in a public educational institution (College) by participating as an inert or silent observer in an English Language class. The instructor for this class did not use any technology to make the learning of his students easy and effective; in fact, he relied on the traditional teaching methods to explain the topic/subject under focus. During the lecture fifty minutes long lecture, the students remained silent and attentive. Also, at the end of the lecture, the students participated robustly in a discussion on the subject in English Language.

Thematic Analysis of the Interviews

For the analysis of the gathered qualitative data, the thematic analysis techniques were used. The major reason for selecting this particular qualitative data-analysis technique is that it is very effective in analyzing that data, which researchers gather via interviews. The other reason for selecting this data-analysis method is that it is quite simple to use.

Acknowledgment: The thematic analysis of the qualitative data reveals that there is a consensus across the research participants (interviewees) that the technology's incorporation in a teaching strategy makes that teaching strategy better. Though all the research participants agree that integrating instructional technologies in a teaching method makes that teaching method better; however, there is a difference in opinion on how much the teaching methods improve once instructional technologies become their central element. For instance, some research participants believe that instructional technologies incorporation in conventional teaching methods improve conventional teaching methods drastically while other research participants are of the view that integrating instructional technologies in teaching strategies improve teaching strategies only slightly.

Workshops: Another theme, which prevalence is quite strong across the conducted interviews, is workshops on modern teaching. Several interviewees have revealed that they attended workshops and seminars on modern teaching to develop the competencies to use various teaching-related modern technologies. For instance, Research Participant-1, Research Participant-2, and Research Participant-4 told that they attended workshops on modern teaching to develop basic competencies to use different technological devices/machines/equipment for effective teaching.

Most of the educators indeed attended workshops and seminars to learn relevant instructional technologies' use for effective teaching; however, it is also true that the workshops were only the aged educators' preference for the mentioned goal (professional development to use the latest instructional technologies). Young educators gave equal importance to the internet-based platforms to develop a good competency to use various teaching-enhancing modern technologies.

Effort and Period: Another very recurrent theme is about effort and period. It is learned that educators, who are young or tech-savvy, need a smaller period and a lesser effort to develop the ability to use particular teaching-related technologies in comparison to those educators, who are old or not very familiar with modern technologies such as smartphones and tablets. This piece of information suggests that there is a negative association between age/tech-literacy and effort/period that educators need to professionally develop themselves to use various technological devices or equipment for effectual or high-quality teaching.

Technology's Centrality in Teaching Strategies: The selected theme, technology's centrality, is not only very recurrent but also very important. For instance, the systematic scrutiny of the selected theme suggests that though most educators consider technology an essential element of an effective teaching strategy; however, a very few of them make technology a central element of their teaching strategy. This information is interesting as it reveals to us that the educators' perception of technology is quite different from their approach towards technology.

Employment of Technology: This particular theme is also very dominant across the conducted interviews. The methodical and meticulous scrutiny of this theme reveals that only a very few educators use instructional technologies to make their teaching effective. For instance, only Research Participant-3 employs particular instructional technologies regularly and robustly to make his teaching effective and result-oriented.

Types of Technology: The selected theme, which is very recurrent, is about the technologies that the Saudi educators generally use to transfer knowledge to the targeted audience (students). Its systematic and thorough scrutiny suggests that most of the educators use simple technologies and not advanced technologies to transfer subject-related information to their students successfully. For instance, most of the interviewed educators use projectors (a simple technology) that are connected to their tablets or laptops to make their teaching efficient. None of the interviewed educators uses complex technologies such as Application-based Learning, Learning Analytics, Artificial Intelligence, and Automation to make the learning of the students effective and simple (or less burdensome).

Perfection: A recurring theme, which review reveals that educators take immense time to master that technology's use that they have learned recently. For instance, an educator takes around six months to use that technology perfectly (in certain learning environments for very specific learning-outcomes), which he/she has learned only recently to make his/her teaching efficient or result-oriented.

Results of the Structured Observations

The results, of the structural observations the researcher undertook to learn whether the technology's use made learning effectual for students or not, suggest that integrating technology in a teaching strategy affects that teaching strategy's potency/effectuality. However, it is also a fact that the incorporation of technology in a teaching strategy does not improve that teaching strategy's effectiveness drastically; in fact, slightly.

Discussion

The methodical analysis of the qualitative data has brought forth three important insights. One of these three insights is that the teaching community in Saudi Arabia agrees with the fact that technology's use in teaching is beneficial. For instance, most of the interviewees told that they believed that technology's incorporation in a teaching strategy enhanced its effectiveness. This insight the educational institutions in Saudi Arabia can emphasize to develop strategies to motivate their faculties to adopt modern technology for teaching-related causes.

The other insight is about the path that Saudi educators mostly adopt to attain proficiency to use modern teaching/instructional technologies for effective teaching. It is learned that most of the educators participate in workshops on modern teaching and instructional technologies to develop those competencies that they require to use various instructional technologies in a learning environment for the realization of specific teaching objectives. Mostly, the decision to participate in a workshop for the mentioned effect is independent and troublesome. For instance, most of the educators decide to participate in workshops/seminars on modern teaching methods on their own and they spend substantial time to locate such workshops/seminars. If educational institutions start organizing quality workshops on modern teaching methods/latest instructional technologies frequently, 1) more educators will start professionally developing themselves to use modern technologies to make their teaching effective and 2) instructional technologies-related professional development of educators will become simple.

The third important insight is regarding Saudi educators' reluctance to make instructional technologies a central and active element of their teaching strategies. For instance, the thematic analysis of the conducted interviews has revealed that technology is a major and active element of teaching strategies of very few educators. In my opinion, there are two reasons for this odd reluctance. One of the two reasons is that the educators lack the knowledge of how different instructional technologies can help them realize particular teaching goals. The other reason is that Saudi educators do not know how to integrate modern teaching-enhancing technologies in their teaching methods. The reluctance to make modern teaching-enhancing technologies a major and alive component of teaching strategy can be addressed partly by

emphasizing a Technology Acceptance Model (TAM); educators from different backgrounds can emphasize relevant TAMs to adopt different teaching-enhancing technologies (Scherer, Siddiq, & Tondeur, 2018; Byrd, 2017). (Note: The thematic analysis has produced substantial evidence in the favor of the second assertion.)

It is imperative to mention here that usually educational institutions help their educators/faculties in implementing relevant TAM to adopt particular instructional technologies.

Conclusion

The research exercise, which was qualitative in nature, had two types of objectives; primary and secondary. The primary objective was to learn what paths the Saudi educators in higher education usually adopted to develop those professional competencies that would allow them to use different instructional technologies efficiently in a learning environment. The secondary aims were to learn 1) whether the paths usually adopted for instructional technologies-related professional development were effective or not and 2) whether incorporation of instructional technologies in conventional teaching strategies improved the conventional strategies or not.

To realize these research goals, qualitative data gathered from four semi-structured interviews and three structural observations was examined methodically. The results, of data analysis, show that 1) most of the Saudi educators in higher education participate in instructional technologies related workshops and seminars for instructional technologies-related professional development, 2) paths adopted the Saudi educators in higher education for the mentioned professional development are ineffective and cumbersome, and 3) technology improves the quality of education only slightly.

The results 1 & 2, of the qualitative research exercise, are very interesting as they explain to some extent the low percentage of such educators in Saudi public educational institutions, who can use the latest instructional technologies for effective teaching. For instance, the results 1 & 2 suggest that the unavailability of efficient platforms for instructional technologies-related professional development is discouraging the Saudi educators in higher education from professionally developing themselves to use efficiently the latest instructional technologies. This in return is keeping the number of technology-proficient educators low in post-general educational institutions of Saudi Arabia. If that is truly the case, the Saudi government and educational institutions (higher-education) can address this issue by simply organizing quality workshops and seminars on modern teaching methodically and regularly.

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