

Teachers' Awareness of 21st Century Skills and the level of their Effectiveness on Teaching Performance

By

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Abstract:

This study aimed to investigate the level of teachers' awareness of 21st century skills and the level of their effectiveness on teaching performance. The researcher adopted the analytical descriptive approach as the research method and used a questionnaire she designed in order to accomplish the study's objectives. The study sample included (205) female teachers in general education grades in Riyadh Region. The study obtained several findings, most importantly the following: teachers' awareness of 21st century skills (creative thinking – effective communication and collaboration – leadership and project management – effective use of technology) and the level of their effectiveness on teaching performance was rated very high, while the barriers to teachers' acquisition of 21st century skills were rated moderate, from the perspectives of respondents; It was also found that there are no statistically significant differences on the axes of teachers' awareness of 21st century skills and the barriers to acquiring these skills as regards the variables of (years of experience – number of training courses – the grade level). In light of these findings, the study presents several recommendations, most importantly the following: The need to pay attention to developing appropriate remedial plans for low-achieving students; Encouraging students to practice critical and creative thinking; and need to provide strategies for encouraging self-learning among students.

Keywords: teachers' awareness – 21st century skills – teaching performance.

Introduction:

The concept of 21st century skills has become a stable and internationally adopted concept in a general and comprehensive manner within educational policy frameworks. The importance of this concept in the context of developing educational policies is that it defines what students must know and be able to do so that they can achieve success as employees and citizens in contemporary environments.

"the current century is witnessing knowledge and technological developments that imposed changes on the educational system, which made many educators and those interested in education call for the need to have an educational system that takes into account the requirements of the current century, contributes to providing an effective educational environment, and provides the necessary conditions for the 21st century. The focus has now become on education goals related to 21st century skills that help the student adapt to the world, and prepare him for competition, creativity, and the labor market". (Ali, 2021, p. 125)

Up till the beginning of the 21st century, education systems and curricula in most countries focused on the importance and value of knowledge, and thus the curricula were filled with information and knowledge aimed at developing basic skills in education. With the rapid development in technological methods and means of communication, knowledge has become available and accessible, and the need has emerged for other skills such as: teamwork skills, communication, and critical thinking to succeed in learning and working in the 21st century. (Al-Mufti, 2021)

It is not only students who should possess 21st century skills, it is also important for teachers to have sufficient awareness of these skills, since they cannot be imparted to students in the first place without teachers having sufficient knowledge about them and how to train students in them. Therefore, awareness of 21st century skills has become an important competency that teachers must possess. It is no longer sufficient for teachers to simply have knowledge of the content of the subject, but it has also become important for them to have knowledge about 21st century skills as well as knowledge of the teaching methods associated with teaching those skills, such as integrating technological techniques into the educational process (Shafie et al., 2019).

Teacher awareness of 21st century skills is linked to improving the quality and efficiency of his teaching performance. In recent years, it has become expected and desired for teachers to acquire awareness of the skills necessary to organize teaching and learning processes in the 21st century; As possessing these skills also helps teachers reshape learning environments and adopt new curricula (Şahin & Han, 2020).

Whereas the teacher is the main element in the educational process, its leader and director, he is an essential pillar in its development, improvement and advancement to the highest level, and this includes developing all his teaching skills; The matter is not limited to development only, but extends beyond that to the stage of practice and training in real-world to test the level of his mastery of these skills, and thus they qualify a teacher capable of leading the development process. (Suwailem, 2016)

"the 21st century is also witnessing a massive technological rush and explosion of knowledge that is unprecedented, because with these developments and changes that the world around us is witnessing, they are not limited to a specific field, but rather go beyond it to affect the depths of the educational field with its goals, curricula, and teaching methods, and even teachers' performance, which poses a challenge for educational systems, to improve the quality of education provided by educational institutions". (Al-Musa, 2015, p. 410)

Therefore, the teacher must be prepared to be able to adapt to the requirements of the 21st century, including: adjustment skills, creative thinking, problem-solving, good communication and interpersonal skills, and taking responsibility; This compels the teacher to have a great level of awareness and professional competency, where he is able to develop his knowledge, attitudes and skills in a way that is appropriate and compatible with 21st century skills. (Al-Ghamdi, 2018)

Thus teachers' awareness of 21st century skills has become a prerequisite for effective teaching that is compatible with the needs of the educational process in the contemporary world, thereby, it can be said that awareness of those skills is connected to improving the quality and efficiency of teaching performance; Therefore, educational institutions must direct their attention imparting and developing the 21st century skills in teachers of different subjects and across different grades.

Study problem:

The significance of effective teaching performance among teachers at various educational levels cannot be denied, as effective teaching performance is one of the main factors determining the quality of learning among students and the level to which the teacher is able to achieve the goals of the educational process. In light of the changes and transformations witnessed today in various fields, including the educational field, it has become necessary for the teacher to have the skills that help adapt to the emerging changes in the surrounding educational contexts, and perhaps the most important of these skills are 21st century skills, as these skills affect the quality and efficiency of the teacher's work.

Some studies highlighted the effect of teachers' awareness of 21st century skills on the quality and efficiency of their teaching performance; And as the study of (Pa-alisbo, 2017) indicated, there is a positive correlation between a teacher's awareness of 21st century skills and his job performance; These findings agree with the study of (Tuazon & Sumadsad, 2022) which revealed a positive correlation between student teachers implementation of a set of 21st century skills (critical thinking, collaboration, communication, creativity, and innovation) and the academic performance of students.

And although some studies indicate a connection between teachers' awareness of 21st century skills and improving the levels of their teaching performance, other studies show that there is difficulty in employing those skills in teaching due to the low levels of awareness about them among a large segment of general education teachers in various contexts. For example, the study of (Ahmar et al., 2023) revealed low levels of awareness of trainee teachers at Sembilanbelas November University Kolaka, Indonesia, about 21st century skills (creative thinking, innovative thinking, and social competence); And the study of (Mtebe & Raphael, 2018) provided similar findings, where it showed that the levels of confidence among teachers-working in the Pwani and Morogoro regions of Tanzania-about their possession of 21st century skills, in light of TPACK model, were (average). These findings agree with the findings of the study of (Al-Jahni, 2019) which showed that middle school science teachers in Tabuk in the Kingdom of Saudi Arabia, possess 21st century skills to a (moderate) degree.

In light of the above discussion, the research problem which the current study seeks to address is highlighted; Although some studies show a positive correlation between male and female teachers' awareness of 21st century skills on the one hand and teaching performance on the other hand, this conclusion is not generalizable given that other studies indicate that levels of awareness of 21st century skills among teachers in the contemporary world are still relatively low and therefore this awareness is not a prevalent feature in the field of educational work; Hence, it is clear that there is a research gap in addressing and clarifying the impact of teachers' awareness of 21st century skills on their teaching performance. The current study seeks to provide a research contribution to fill this gap.

Study questions:

- What is the level of teachers awareness of 21st century skills of (creative thinking, effective communication and collaboration, leadership and project management, and efficient use of technology) and their effectiveness on teaching performance?
- What are the barriers to teacher acquisition of 21st century skills?
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- Are there statistically significant differences at significance level of (0.05) about the questionnaire axes and its total score according to the variables of (years of experience – number of training courses – the grade level)?

Study purposes:

- Investigating the level of teachers awareness of 21st century skills of (creative thinking, effective communication and collaboration, leadership and project management, and efficient use of technology) and their effectiveness on teaching performance.
- Defining and highlighting the barriers to teacher acquisition of 21st century skills.
- Presenting suitable recommendations and proposals to mitigate the barriers to teacher acquisition of 21st century skills.
- Enhancing the capabilities of teachers of different grade levels in regards of acquiring more 21st century skills.

Study significance:

The significance of the present study stems from the topic it addresses, and that is teachers' awareness of 21st century skills and the level of their effectiveness on teaching performance; the significance of the study can be highlighted as follows:

First: theoretical significance:

- The present study may contribute to the theoretical framing of the reality of female teachers in general education schools in Riyadh possessing 21st century skills and enhancing them.
- The present study may contribute to drawing the attention of specialists to design more appropriate training courses and workshops that help teachers acquire more 21st century skills and develop and improve the outcomes of the educational process.
- The researcher hopes to enrich libraries with more studies in this context given the scarcity of previous studies of the same field-as far the researcher knows-.

Second: Applied significance:

- The findings of the present study may help present the necessary recommendations and proposals to overcome the barriers to teachers acquisition of 21st century skills.
- The findings of the present study may help generalize these conclusions to the reality of various male and female teachers' of general education levels possession of 21st century skills.
- The findings of the present study may help define certain skills within 21st century skills and working to enhance teachers' acquisition of them in the future through new studies and research.

Study limits:

First: topic limits: this study is limited to investigating teachers awareness of 21st century skills and their effectiveness on teaching performance.

Second: time limits: this study is applied in the first semester of the academic year 1445 A.H./2023.

Third: spatial limits: this study is limited to the geographic range of the field study in general education schools in Riyadh in the Kingdom of Saudi Arabia.

Fourth: human limits: the study population will consist of all female teachers in general education schools in Riyadh, and the sample will include (205) randomly selected teachers to represent the study population.

Study hypotheses:

The present study seeks to verify the following hypotheses:

- There are no statistically significant differences (at significance level of 0.05) in the opinions of the respondents about the questionnaire axes as a whole according to the variable of (years of experience).
- There are no statistically significant differences (at significance level of 0.05) in the opinions of the respondents about the questionnaire axes as a whole according to the variable of (number of training courses).
- There are no statistically significant differences (at significance level of 0.05) in the opinions of the respondents about the questionnaire axes as a whole according to the variable of (grade level).

Study terms:**21st century skills:**

"The set of skills students need for successful learning in the 21st century identified by the Partnership for 21st Century Skills and which can be developed through academic courses". (Al-Arfaj et al., 2019, p. 180)

21st century skills are also defined as the skills necessary for the student to be successful, and these skills include cooperation, critical thinking, communication and problem-solving (Rafiq & Hashim, 2018).

The researcher defines them procedurally as: a set of skills needed in the field of learning, work and life; These skills include creative thinking, effective communication and cooperation, leadership and project management, and efficient use of technology.

Teaching performance:

Teaching performance is defined as "a series of measures, practices and skills performed by the teacher in schools, which include planning, execution and assessment skills, in order to translate and employ the theoretical concepts and principles taught by college professor into applied practices that can be observed and measured through his performance in various educational situations". (Suwailem, 2016, p. 226)

Among other definitions for teaching performance is: the effectiveness and quality of teaching practices of teachers and their ability to positively influence students' learning and development (Muhiding et al., 2023, 601).

The researcher defines it as: the level of teachers' success in performing educational tasks in light of their responsibilities and powers and according to performance standards, to achieve educational purposes.

Theoretical framework:

Teaching and learning institutions, both globally and locally, are one of the most important sectors that seek-in light of the current accelerated technological progress-to benefit from it to achieve total and sustainable development for both the teacher and the student, and focus on developing skills that are compatible with the various challenges and requirements of this era.

"The current era is characterized the age of knowledge explosion and information revolution, which in turn adds to new load to educational institutions as they are responsible for preparation of manpower needed to face the technological and knowledge challenges witnessed by the current age; The teacher is an element of this manpower, because he is the actual implementer of educational policies on society, and he is the main driver of all activities and the basis of their effectiveness, with his proficiency, knowledge, capability and ability to cope with the nature of work he does, and he is also the main pillar of the educational process". (Abu Al-Hamd, 2019, p. 121)

This is evident from what is happening now of interest in the requirements of the 21st century, trends that are a priority for educators, with the aim of supporting students in the various educational stages and in academic life, in terms of mastering both content and skills.

Importance of 21st century skills:

21st century skills are a set of skills that students must learn and develop in order to be able to achieve success in the information age; In fact, to be considered educated in the modern world requires learning 21st century skills alongside basic school subjects.

The importance of 21st century skills is to provide new curricula that allow learning appropriate 21st century skills and provide supporting educational materials for them, and for teachers to practice technological design skills, which provides them with a wide range of technology that serves as tools to engage students in solving problems, and provides the opportunity for the teacher to search for and build knowledge, provides a supportive school structure, and provides continuous professional development opportunities for 21st century teachers. (Al-Shudaifat and Al-Harashseh, 2019)

"The importance of 21st century skills can be represented in the need to raise awareness of the importance of the education sector keeping pace with the changes the world is witnessing. In addition to the need to introduce reforms and official decisions to be applied effectively, and provide all means in educational institutions that help both sides of the educational process to teach and learn in accordance with global changes, and working on periodic evaluation through specialized methods to measure the extent to which our educational institutions work with these modern mechanisms." (Boubaqar & Rmash, 2022, p. 150)

The importance of 21st century skills is not limited to the importance of teaching them to students, but it is also important to impart them to teachers. This is due to the need to integrate these skills in a systematic and organized manner into the school curricula in order to achieve educational goals and provide an educational environment that supports creativity and innovation. In other words, contemporary rapid changes increase the responsibility of teachers to develop their skills, keep pace with the challenges of the 21st century, and help students acquire 21st skills (Alhothali, 2021).

In view of the above, it becomes clear that 21st century skills have become one of the important educational concepts in the contemporary world, due to the great changes and transformations that have affected the world in recent years. In light of the globalization of the world today, the high pace of competitiveness, and the rapidity of change, it is no longer sufficient to merely provide students with basic knowledge. Rather, it has also become important to provide them with skills that enable them to adapt to circumstances and challenges in a proactive, responsive and continuous manner. The 21st century skills that teachers must possess and impart to students can be highlighted as follows:

First creativity and innovation skills:

Creativity is considered a fundamental and innate distinctive characteristic of the human mind that appears potentially in every individual, as well as coming up with new solutions to problems and situations facing educated individuals. It is a series of mental activities carried out by the brain when it is exposed to a stimulus through one of the five senses. (Al-Rabeie et al., 2016)

Creativity also plays an important role in achieving the development and progress of nations and societies through human innovations and innovations in administrative organizations. Therefore, it has become an absolute necessity for countries that seek to achieve progress and advancement for their people to pay attention to creativity and innovation and to nurture creators and innovators by providing appropriate and encouraging conditions for creativity. Creativity helps in continuous regeneration and development, which helps in achieving survival and competition among learners, and supporting learners by finding methods, techniques, and technology appropriate to them, adapting and interacting with all the surrounding variables, and raising the level of learners' performance. (Al-Rashidi, 2018)

Creativity and innovation skills are increasingly important for companies and business institutions. Creativity and innovation skills help you think flexibly, be open to new ideas, combine ideas in new and innovative ways, use a wide range of idea generation methods (such as brainstorming), devise solutions, test ideas, present ideas, refine and evaluate ideas, demonstrate innovation and originality, and benefiting from mistakes in directing new innovative solutions (Wilcox et al., 2017, 58).

The researcher believes that creativity and innovation skills are linked to a number of other 21st century skills, most importantly is the critical thinking skill. This is because critical thinking is one of the components of creative and innovative thinking, and vice versa. Creativity skills also depend on the availability of a number of tendencies and skills, such as motivation, the ability to take risks, openness to new ideas, and the ability to tolerate and deal with ambiguity. Creativity is also linked to a number of other cognitive skills, such as identifying problems, idea generation, and problem solving skills.

Second: critical thinking skills:

"Critical thinking is a type of human thinking, and it is perhaps one of the most widely used in the fields of education on the one hand, and in aspects of daily life on the other hand. Critical thinking is of great importance in helping the individual face the rapid changes that the world is witnessing today, and deal efficiently with problems that require abstract thinking skills, by acquiring the ability to make good choices, and the ability to make decisions that depend

on measuring and evaluating alternatives, which is the essence of critical thinking; Through this thinking, the learner learns how to ask and when to ask". (Ghilani, 2017, p. 1)

The goals of education are to teach students thinking skills and develop them; Its ultimate goal is to teach and develop critical thinking. A person who thinks critically will become a zealous citizen and a worker enthusiastic about serving his community and its principles and achieving its values and goals. Psychologists and education scientists show a clear interest in this type of thinking because of its repercussions in the learning process and the ability to solve problems, as critical thinking is considered one of the most important thinking skills that helps the learner identify the correct information resulting from cognitive expansion and the massive flow of information, which allows the learner mastery of the cognitive requirements to meet the growing challenges of the era and to keep pace with a rapidly changing world. (Abdel Moneim et al., 2016)

Critical thinking skills play a crucial role in daily life tasks, problem solving, enhancing intelligence and adaptability skills, and also students' academic achievement; By using critical thinking, one can recognize distorted and incorrect information presented to them, distinguish between personal opinions and established facts, and how to deal with large amounts of information in order to understand and evaluate it (Thornhill-Miller et al., 2023, 7).

The researcher believes that critical thinking skills help students analyze and evaluate difficult or complex problems that do not have previously known solutions. Critical thinking skills include a number of various sub-skills, such as time management, project management, research, project design, and teamwork, and all of these skills help solve problems in the real world. If students practice critical thinking skills, they will be able to search for information and evaluate its quality, envision and develop solutions to confusing or ambiguous problems, and evaluate the appropriateness of solutions; Critical thinking skills can also be used to compare, draw conclusions, summarize, analyze, and build sound arguments and evidence.

Third: technological knowledge skills:

The world has entered the era of the knowledge revolution and information technology, whose activities have spread throughout the globe, and interacted with all accompanying elements, and knowledge is part of those elements, so we find that information has entered as a major element in understanding the term knowledge; Knowledge management constitutes one of the contemporary intellectual developments in the business world, and its role has increased in a broader sense in building the competitive advantage of an organization that relies mainly on intellectual and knowledge assets with an information foundation.

Contemporary changes and challenges facing education require finding a proper environment for the student, that is able to respond to these challenges and keep pace with the constant changes; And knowledge management is considered one of the modern concepts through which appropriate knowledge can be generated and applied in a way that enables appropriate decisions to be taken and increases the level of competitiveness of schools, thus enabling schools to achieve their goals and improve their level of performance. Linking knowledge management to performance is considered one of the important topics that has strengthened the efforts made to evaluate knowledge management. (Al-Ghamdi & Marghalani, 2020)

The individual's acquisition of technological knowledge depends on his possession of a combination of cognitive, critical, technical, social, and other skills, which help the individual practice exchange, cooperation, and participation through information and communication technologies. In light of global technological trends, such as artificial intelligence and space technologies, it has become necessary to develop new insights in education systems that look at what is broader than just the utilitarian use of technology in the educational process (Bravo et al., 2021).

The researcher believes that the rise in the importance of technological knowledge represents a major transformation in contemporary school education systems, as it represents a shift from the construction of knowledge based on predetermined content in textbooks and the reproduction of knowledge by the teacher to a situation where students are using the available content and generating something new, i.e. something that is not predetermined.

Fourth: communication and cooperation skills:

The process of communication and cooperation is one of the skills that help students keep a good communication with the environment in general and education in particular, and this is done through communication skills, working in an atmosphere characterized by cooperation with others, and working in diverse teams that are willing to achieve goals through cooperation, therefore, learners should be able to maintain good communication to achieve multiple goals in the educational process, and take into account the ethical aspect during cooperation. (Al-Shamri & Al-Subaie, 2020)

Communication and cooperation enable teachers to communicate effectively with others and share their ideas, through technological tools based on social cohesion to attract learners and motivate them to express their opinions and participate effectively among them; This is because the teacher and learner are the foundation of the educational process, by exchanging experiences and educational projects between them through the process of communication and cooperation. (Zahr, 2016)

It is possible for a teacher to work on developing communication and cooperation skills by taking into account a number of considerations, which include the following (Soderlund, 2020):

- 1. Developing communication skills:** the teacher must adapt his teaching practices to the notion that the mind is like a network, and thus he should focus on feelings, interactions and storytelling to enhance communication in the classroom environment.

2. Developing cooperation skills: significant cooperation efforts by the teacher in the classroom influence the level of students' willingness and desire to apply them; And the teacher's efforts observed by students represent a standard and reference for them to follow in practicing cooperative work in the classroom.

From the above, it can be said that 21st century skills are one of the important requirements to keep pace with the nature of the contemporary world, and this importance is reflected in the status of these skills in contemporary educational thought; Given that schools are the institutions responsible for preparing young people for the challenges of the future, working to provide students with 21st century skills has become an important responsibilities that schools and various educational institutions must give the utmost priority and importance to.

Barriers to teachers' acquisition of 21st century skills:

Teachers face several challenges to integrate 21st century skills into teaching, namely the lack of conviction of some teachers in the importance of using technological means in teaching, the lack of suitably qualified competencies to use technological devices in education, which leads some teachers to make mistakes while using such devices, the fear of some teachers that the use of technology may threaten their work because they believe that it will replace them one day, the inability to obtain some of the programs necessary for the educational process, the lack of a good government plan to adopt the idea of educational technology, and the lack of sufficient financial support from the responsible authorities to support educational technology.

And despite the importance of 21st century skills, there are some deficiencies in the availability of these skills in the basic pillars of the educational process, as educational systems restrict teachers' participation in classroom activities and do not provide the appropriate space to raise the level of teachers' teaching performance in light of 21st century skills. There are also deficiencies in some of the teaching performances of teachers, and a low level of teachers' integration of the 21st century skills into academic curricula. (Al-Ruwais, 2021, p. 229); The following is a review of the most important of these barriers in some detail:

First: financial barriers:

Teachers face many barriers to integrating 21st century skills into teaching, which are the lack of sufficient capital to support schools with the best modern technological means, or their high cost, and thus purchasing only a few of them which reflects on administrative work and reduces its efficiency, the lack of computers, and the limited Internet coverage and its high price, the failure of some school administrations to train teachers on modern technologies, and the lack of material and moral incentives for employees to push them to training and qualification.

Other barriers that teachers and students face when integrating 21st century skills into teaching are the lack of a suitable learning resource center, lack of modern equipment and technologies appropriate for school buildings, weak maintenance services for the school building, weak security and safety procedures in the school building, and weak incentives system encouraging teachers to conduct scientific studies. (Al-Ghamdi & Al-Thuwaini, 2023, 395)

And the lack of educational devices, resources, and software in addition to material facilities, the lack of training of technical staff and teachers on using technologies, the negative attitude of teachers towards educational technology, the lack of experience of the majority of teachers in the technological field and the use of its various techniques, the difficulty of providing financial credit to transform technology from idea to production, and the inability to introduce computers into schools, the inability to develop curricula and teaching methods to keep pace with technological innovations, and the lack of financial incentives for teachers who use contemporary technology models in teaching. (Ajimi, 2018)

Many teachers face financial difficulties and challenges that hinder them from planning to effectively integrate 21st century skills into teaching; The most prominent of these difficulties include insufficient resources and available infrastructure, in addition to overcrowding in classrooms. There is also the problem of insufficient quantity and quality of available information and communication technology resources, and this problem negatively affects teachers' application of the 21st century skills associated with modern technologies (Rusdin & Ali, 2018).

Second: human barriers:

Teachers face many challenges when integrating 21st century skills into teaching; These challenges are represented by the extensive use of technology with students, the short time spent by teachers with each student, the negative impact on students' thinking, behavior, and social relationships, and student distraction as a result of teachers' excessive use of educational technology in the classroom. There are many students who learn best through physical and mental interaction, and so, teachers face difficulty in providing for learners' needs as a result of the extensive use of technology, and students' constant dependence on technology, which harms their psychological and mental health. (Malaeb, 2021)

Despite the availability of information in the 21st century, the teacher faces difficulty in simplifying and arranging this information, and the he suffers in obtaining information, so the teacher becomes unable to guide learners to important websites and appropriate ways to obtain information. As well as the multiplicity and diversity of educational and scientific problems facing the teacher, thus they are unable to find solutions to these problems; And in light of the development in education and technology breaking into this field, the teacher faces difficulty in explaining information, using teaching aids, and engaging learners in conducting these experiments, which causes a deficit in their acquisition of scientific skills. (Hamdisha, 2016, p. 142)

Negative subjective factors are among the most prominent human barriers to applying 21st century skills in educational contexts. There are many teachers who lack the appropriate knowledge and skills to use modern technologies in teaching, and there are also those who prefer to use these technologies to a limited extent only. There are also some teachers who believe that the use of higher-order thinking skills is inappropriate in teaching contexts for the early grades (Djudin, 2020).

Third: administrative and organizational barriers:

School principals face some shortcomings in following appropriate leadership methods, weak desire to assume school administration tasks, lack of incentives to assume school administration tasks, lack of qualification to understand the laws and regulations of administrative work in the school, the principal being affected by personal problems and transferring them to work, great large burdens and tasks assigned to the principal, weak coordination and communication between the school district and the school, weak maintenance services for the school building, the lack of suitable places to practice various activities, and weak security and safety procedures in the school building. (Al-Ghamdi & Al-Thuwaini, 2023)

Teachers in the school come across many obstacles by the school administration, which are the difficulty processing large pieces of information, the school's lack of consideration for the students' needs, the teaching aids used cannot be modified, changed or reconfigured, difficulty developing creative thinking among learners, inability to consume information in the amount that suits them, failure to attract students' attention due to teachers' inability to keep pace with 21st century skills and modern teaching methods, students' poor achievement due to their inability to adapt in the educational environment, and the difficulty to instill self-learning and self-reliance principles. (Azzam, 2017)

Among the administrative and organizational barriers that hinder teachers' effective integration of 21st century skills into their teaching practices is the insufficiency of professional development programs and training courses. As a result, many teachers apply 21st century skills to a limited extent and are not able to apply teaching according to the requirements of the 21st century in all subjects, nor are they able to apply these skills in evaluating student performance (Rusdin & Ali, 2018).

In light of the above, the importance of implementing multifaceted intervention initiatives is highlighted in order to be able to effectively provide teachers with awareness of 21st century skills; It is important to work to address the material, human, administrative and organizational barriers in order to create an appropriate climate that helps teachers acquire these skills and apply them in their teaching work effectively. In this regard, interventions that are more compatible with teachers' needs and the nature of the obstacles they face should be implemented.

Importance of effective teaching performance:

The importance of teaching performance lies in paying attention to the culture of meaningful dialogue to transfer educational experiences, activating and training teachers on how to deal seriously with different behaviors of students within educational institutions to achieve the intended goals, and paying attention to developing a plan to improve the teachers' financial and moral conditions, which makes them more willing to work and more effective in teaching performance, increase their loyalty to the institution to which they belong, apply good systems for selecting teachers from the beginning and following them up to determine the effectiveness of their teaching performance according to their specializations and academic qualifications, and paying attention to the professional development of teachers and developing their teaching self-efficacy. (Masoud, 2018)

Effective teaching performance is considered one of the best tools used in the teaching process. It is used to improve the performance of teachers, which makes them able to carry out their teaching roles and the requirements of their work efficiently and effectively. There is a clear interest from officials and those in charge of teaching performance programs for teachers, their professional development, working to

solve the problems they face, and learning about their needs to develop the educational process and improve the teacher's performance so that he can play his role in directing students' behavior through training to develop children's skills by applying sound educational foundations with them. (Al-Qahtani, 2020)

Effective teaching performance plays a crucial role in promoting effective and efficient learning among students. Effective teaching performance involves providing basic inputs to the educational process such as adequate lesson planning, effective presentation of lesson content, proper monitoring and evaluation of student performance, providing regular feedback on student performance, preparation of teaching materials and contents, record keeping, and management of behavioral discipline among students in order to generate and improve student learning outcomes (Ayeni, 2018).

Effective teaching performance is positively and strongly linked to students' academic achievement levels. Students' academic achievement levels rise when the teacher applies diverse teaching practices to suit different learning styles. It is also important for the teacher to be able to enhance students' internal motivation to learn (Mahmoud, 2020).

From the above, it becomes clear that effective teaching performance is an indispensable component for achieving the goals of the educational process. Effective teaching performance involves applying teaching practices in a way that is most capable of meeting students' learning needs. Effective teaching performance is characterized by considering students as active learners in the classroom and not merely recipients of information. It is therefore important to give effective teaching performance a high priority in public educational policies in any context or country.

Elements of teaching performance:

First: lesson planning:

The teaching planning process is one of the basic skills of the teacher. This skill requires extensive knowledge of many teaching skills, such as how to choose appropriate topics to explain the lessons to be learned, analyze and organize them to reveal the extent to which educational goals are achieved.

"Planning is considered one of the most important features present in the modern era, as it aims to organize human efforts and exploit available resources in order to achieve the best investments of these resources by organizing and linking existing goals and capabilities with the available time and effort. Planning plays a major role for educators in the educational process, and is considered is an essential element of the teaching process and is called the teaching planning process". (Al-Tanawi, 2009, p. 35)

An effective teacher must develop plans to determine how to direct teaching towards achieving the chosen educational objectives; This means that the more organized the teacher is, the more effective and efficient the teaching and learning processes become. It also means that the teacher must develop a lesson plan before implementing it in order to be able to teach the concepts to the students (Obilo & Nkwocha, 2014).

Therefore, the researcher believes that effective teaching depends on the teacher's ability to plan lessons in a way that is characterized by an understanding of the complexities of teaching and learning and relies on many diverse skills in order to meet the needs of all students. In fact, it is difficult to teach effectively without a well-established teaching delivery plan in place; The lesson plan must be based on the teacher's knowledge of the students, the available learning resources, and the teaching strategies that can be applied.

Second: classroom management:

Classroom management is one of the basic competencies of teachers, on which the tasks of teaching implementation depend to a great extent. It can be said that classroom management is nothing but a set of complex behavioral patterns that the teacher uses to provide an appropriate educational environment and maintain its continuity to achieve the desired pedagogical and educational goals; Ensuring good management of the classroom and maintaining order in it require good mastery on the part of the teacher.

"Classroom management involves tasks that include defining the role of both the teacher and the learner in achieving the appropriate climate to achieve the educational goals planned in advance by the teachers, of which the learners must be fully aware. Therefore, classroom management is based on a number of foundations, represented by practical, organized and meaningful classroom management. Classroom management relates to managing the behavior of teachers and learners, and may relate to organizing the classroom climate, achieving desired goals, and organizing experiences effectively." (Jalab & Ben Aoun, 2022, p. 16)

Classroom management helps maintain order within the classroom, as teachers and learners need a calm atmosphere for both the teacher and learners to interact on the one hand and for the learners to interact with each other on the other hand. Classroom management works to provide the students with a classroom climate-which is the psychological and social atmosphere that prevails in the learning environment-through interaction between learners and teachers, to provide them with educational experiences. (Abu Khalil, 2019)

Classroom management plays an important role in promoting effective learning among students, because effective classroom management creates a climate for learning; It also helps the teacher perform his role in promoting students' cognitive and social-emotional development. Without effective classroom management, the classroom is disorganized and chaotic, and the amount of learning that can take place is limited (Korpershoek, et al., 2014).

Through effective classroom management, the researcher believes that it becomes possible to achieve the goals of teaching and learning. Therefore, classroom management skill is a basic requirement for achieving teaching objectives and activating teaching and learning processes. Hence, it can be said that having strong classroom management skills is a must-have requirement for an effective and efficient teacher.

Third: applying teaching methods:

"Teaching methods are a strong support for teachers in employing their educational competencies in organizing learners' learning, and they are a major and important means in achieving the goals of education, along with the techniques and means that the teacher uses to facilitate the learning process. The teacher's ability to use appropriate teaching methods gives her the ability to deal with curricula easily, meet the needs of learners, and achieve educational goals at a good level." (Al-Asmi, 2023, p. 101)

In the current age, the teacher faces many challenges as a result of the continuous increase in knowledge and the technological and scientific explosion at all levels and in various fields, which requires new experiences, renewed methods and skills, and high teaching competencies to deal with these variables successfully. What the teacher needs is the ability to be creative and innovative, and the ability to adapt to the environment in accordance with the set educational values and goals. This endeavor can only be achieved if the teacher possesses modern teaching competencies that keep pace with the times, which enables her to keep pace with development and change in all aspects and areas of life. (Jaeem, 2018)

The efficiency of a teacher's work depends on the extent to which he applies effective teaching methods, which include presenting educational content in a way that students can understand, providing learning opportunities enriched with many activities, providing favorable and effective feedback, encouraging students to participate, teaching in a clear and precise manner, and taking into account differences in learning styles among students, and diversification in the methods and strategies applied (Toraman, 2019).

The researcher believes that there is a set of features that must characterize the teaching methods applied by the teacher: The most important of these characteristics are the following:

1. **Defining objectives:** The methods applied must be based on clearly defined objectives.
2. **Classroom focus:** Practices must be focused and involve allocating sufficient time to perform classroom tasks.

3. **Challenging content:** Educational content should provide challenge to students; This requires students to use higher-order thinking skills rather than procedural processes such as questioning and discussion.

4. **Active participation:** Promoting students' effective participation in practical investigations.

5. **Group work:** cooperative learning and peer teaching through small work groups.

Fourth: Integrating modern technologies:

The current era is witnessing tremendous technological progress in which people have become increasingly dependent on modern adaptive technologies, whether for teachers or learners, who are more in need of using them to help them overcome daily difficulties and help include them socially and professionally, as learners and teachers were in dire need of different aids to help them perform their work so that they can perform it easily, conveniently, and with the greatest precision and mastery. (Abu Melhem et al., 2019)

Integrating technology innovations into teaching is one of the important contemporary issues. Education holds a prominent position within the framework of society transformation, and it is one of the most important aspects affected by the winds of change and renewal. Education technology is one the educational sciences that witnessed rapid growth and development in modern times; Its employment in education and learning has been proven to achieve educational goals, exciting students and drawing their attention, and bring the study subject to the level of their perception.

The teacher must prepare himself to use modern technologies in the classroom, because using technology offers new opportunities in daily work activities and professional development activities. Using these technologies has many advantages, such as easy access to information and flexibility of learning experiences in terms of time and space requirements; therefore, using modern technologies might help improve the quality of teaching and learning processes (Kumari & Chahal, 2015).

Integrating modern technologies is no less important than other aspects of teacher performance development, such as learning about educational philosophies, theories and practices; Learning how to use modern technologies has become urgent in teacher's work, particularly in issues like learning how to provide feedback and adjustment of educational goals design and the procedures for measuring their achievement; Therefore, learning how to use modern technologies is a necessity for new generations of teachers (Shah, 2013).

From the above, it is clear that teaching performance is not a simple or single-sided concept, but a sophisticated and multi-dimensional concept; For a teacher to be judged as an efficient teacher, he must achieve competence and be able to perform the various aspects of the above teaching performance. Thus, it is important for the teacher to apply the practices relevant to these aspects in an integrated manner, not separately.

Previous studies:

The study of (Ahmar et al., 2023) aimed to analyze the perceptions of candidate (trainee) teachers about 21st century skills. The study population consisted of all student teachers enrolled in (S-1) program for Chemistry teaching at Sembilanbelas November University in Indonesia; and the sample included (40) individuals to represent the population. The study relied on the descriptive method, and data were collected via the questionnaire. The findings included the following: the levels of knowledge about creative thinking and critical thinking skills were (low) among the respondents, as (15) of them reported that they knew about the skills; and the levels of knowledge about social competence skills among teachers were (low), as (14) of them reported that they knew about these skills.

The study of (Tuazon & Sumadsad, 2022) aimed to investigate the impact of teaching practices of 21st century skills among teachers on students' academic performance. The population included all student teachers enrolled in one of the regional teams of a state university in Philippines. The study relied on the descriptive method, and data were collected via questionnaire. The findings included: the respondents were observed applying critical thinking and

cooperation skills in practical teaching at a rate between one and three times a week, and the same applied to communication, creativity and innovation skills; There was a positive correlation between the student teacher's application of critical thinking, cooperation, communication, and creativity and innovation skills on the hand, and academic performance of students, on the other.

The study of (All-Harbi & Al-Tunsi, 2021) investigated the level of teachers' practice of 21st century skills in teaching the book of My Eternal Language from the point of view of its teachers and supervisors. The researchers used the descriptive survey design as the study method; The study population consisted of all "My Eternal Language" teachers and supervisors in Madina roughly (425) teachers and supervisors, and the sample included (183) "My Eternal Language" teachers and supervisors; and the questionnaire was used as the study instrument. The study reached several findings, the most important among them were: The practice of creativity and learning skills in teaching "My Eternal Language" book, from the point of view of its teachers and supervisors, was expressed as (often), as the mean was (4.13); The practice at the sub-skill level was in the following order: cooperation skills, then creative thinking skills, followed by critical thinking and problem-solving skills, and finally communication skills; And that the level of practicing digital skills was expressed as (often), where the mean was (4.11) and the standard deviation was (0.59).

The study of (Al-Jahni, 2019) evaluated the performance of middle-school science teachers in light of 21st century skills. The researcher used the descriptive design as the study method. The study population included all middle-school science teachers in Tabuk roughly (130) female teachers. The study sample included 25 female science teachers in Tabuk. The researcher used a list and a note card as the study instruments. The study concluded several findings, the most important of which were: The overall mean of the performance of middle-school female science teachers in light of 21st century skills was (2.6); This indicates that the teaching performance of female science teachers in light of 21st century skills was (moderate), that all statements of thinking skills were (moderate) when evaluating the

performance of the respondents; Middle-school female science teachers possess 21st century skills in an average degree; And that in the skills ranking, (Technology Handling Skill), (Communication Skill) and (Thinking Skill) came first, with a mean of (2.7).

The study of (Mtebe & Raphael, 2018) examined the levels of teachers' mastery of 21st century skills in light of the (TPACK) model. The study population included all teachers working at twenty school in the Pwani and Morogoro regions in Tanzania, and the sample included (132) teachers. The study relied on the descriptive method, and data were collected via questionnaire. The findings included: The levels of confidence in having 21st century skills in light of the (TPACK) model among respondents, were (average).

The study of (Pa-alisbo, 2017) highlighted the level of teachers' possession of 21st century skills and their level of job performance. The study population is made up of all permanent elementary teachers working in the third school district of Cotabato, Philippines, and the sample included (42) individuals representing the study population; The study was based on the correlative descriptive method, and data were collected via questionnaire. The findings of the study included the following: 21st century skills were of a (moderate) degree among the respondents; Subjective perceptions of the respondents about the levels of job performance are (highly) positive; There is a positive correlation between 21st century skills and teachers' job performance; There are no statistically significant differences among respondents in 21st century skill levels or job performance is according to variables (educational qualification, years of service, salary level).

The study of (Al-Helw, 2016) investigated the awareness of female home economics teachers about 21st century skills in light of the required professional development and their tendencies towards it. The researcher used the analytical descriptive design as the study method, the study sample included (35) female home economics teachers to represent the study population, and the researcher used the questionnaire and scale as the study instruments. The study found many results, the most important of which: There were statistically significant differences at the level of (0.05) between the average scores of female home

economics teachers on the questionnaire investigating the level of awareness according to the variables (years of experience, and training courses) in favor of less experienced teachers and more training courses in learning and innovation skills and IT and media skills, while the skill of life and career was in favor of teachers with higher experience; There were statistically significant differences at the level of (0.05) between the average scores of female home economics teachers on the tendency scale according to (years of experience, and training courses) for less experienced teachers and more training courses in learning and innovation skills and IT and media skills; While the skill of life and career was in favor of teachers with higher experience; And there was a direct correlation between the axes of the scale of female home economics teachers' awareness of 21st century skills and the axes of the scale of home economics teachers' tendencies towards 21st century skills at the significance levels of (0.01) and (0.05), the more female home economics teachers are aware of 21st century skills with themes of learning and innovation, IT skills, media and digital culture, the more they are oriented towards them.

Study methodology:

Study approach:

To achieve the study purposes, the researcher used the descriptive analytical approach: The descriptive approach is to collect, compile, categorize and classify data and facts, with a view to drawing meaningful conclusions, and then reaching generalizations on the phenomenon under study.

Study population and sample

The population of the present study consists of all female teachers in general education in Riyadh for the academic year (1445 A.H./2023), and the sample includes (205) teachers to represent the population.

Characteristics of the sample:

Frequencies and percentages of the respondents were calculated according to (years of experience – number of training courses – grade level).

1. Distribution of respondents according to years of experience**Table (1) Distribution of respondents according to years of experience**

s	Years of experience	Frequency	Percentage
1	Less than 5 years	32	15.6%
2	From 5 to less than 10 years	16	7.8%
3	10 years and above	157	76.6%
Total		205	100.0%

Table (1) shows that (15.6%) of the respondents have less than 5 years of teaching experience, and (7.8%) of them have experience from 5 to less than 10 years, while (76.6%) have experience of 10 years and above.

2. Distribution of respondents according to number of training courses**Table (2) Distribution of respondents according to number of training courses**

s	Number of training courses	Frequency	Percentage
1	None	77	37.6%
2	From 1 to 3 courses	87	42.4%
3	More than 3 courses	41	20.0%
Total		205	100.0%

Table (2) shows that (37.6%) of the respondents did not receive any training courses, while (42.4%) of them received 1 to 3 courses, and (20.0%) received more than 3 courses.

3. Distribution of respondents according to grade level**Table (3) Distribution of respondents according to grade level**

s	Grade level	Frequency	Percentage
1	Kindergarten	10	4.9%
2	Elementary school	104	50.7%
3	Middle school	53	25.9%
4	High school	38	18.5%
Total		205	100.0%

Table (3) shows that (4.9%) of the respondents teach kindergarten, (50.7%) of them teach elementary school, (25.9%) teach middle school, and (18.5%) teach high school.

The study instrument:

After reviewing the educational literature and previous studies related to the study topic, the researcher built and developed a questionnaire with the aim of investigating the level of teachers' awareness of 21st century skills, the level of their effectiveness in teaching performance, and the barriers to teachers' acquisition of 21st century skills.

Description of the study instrument (questionnaire):

In its final form, the questionnaire contained two main parts:

The first part: includes the primary data of the respondents: (years of experience – number of training courses – grade level).

The second part: includes the axes of the questionnaire. In its final version, the questionnaire consisted of (32) statements distributed over two main axes:

First axis: "The level of female teachers' awareness of 21st century skills", consisting of (23) statements distributed over four main dimensions.

Second axis: "The barriers to female teachers' acquisition of 21st century skills", consisting of (9) statements.

Five-point Likert scale (strongly agree – agree – neutral – disagree – strongly disagree) was used to investigate the level of teachers' awareness of 21st century skills and their effectiveness in teaching performance, and the barriers to teachers' acquisition of 21st century skills.

Validity of the study instrument:**1) Face validity:****a) Validity of internal consistency of the study axes**

The validity of internal consistency was calculated according to responses of the sample, by calculating the Pearson correlation coefficient between the scores of each statement and the total score of the axis to which the statement belongs, as the results of the following table (4) show:

Table (4) Pearson correlation coefficients between the scores of each statement and the total score of the axis to which the statement belongs

First axis: "The level of female teachers' awareness of 21st century skills"					
Ite m no.	Correla tion coeffi cient	Ite m no.	Correla tion coeffi cient	Ite m no.	Correla tion coeffi cient
1	.656**	9	.656**	17	.750**
2	.683**	10	.664**	18	.752**
3	.839**	11	.824**	19	.812**
4	.665**	12	.781**	20	.839**
5	.779**	13	.708**	21	.665**
6	.698**	14	.742**	22	.777**
7	.797**	15	.773**	23	.581**
8	.471**	16	.850**		
Second axis: "The barriers to female teachers' acquisition of 21st century skills"					
1	.612**	4	.820**	7	.908**
2	.526**	5	.877**	8	.899**
3	.921**	6	.866**	9	.863**

**** Statistically significant at the level of (0.01)**

*** Statistically significant at the level of (0.05)**

Table (4) shows that the correlation coefficients of the statements with the total score of the axis to which the statement belongs were all statistically significant at the level of (0.01), and all the values of the correlation coefficients were high, as they ranged in the first axis: "The level of female teachers' awareness of 21st century skills" between (.471** - .839**), and in the second axis: "The barriers to female teachers' acquisition of 21st century skills" between (.526** - .921**), which indicates a high degree of internal consistency of the statements of the questionnaire axes.

b) General construct validity of the questionnaire axes:

Construct validity of the questionnaire axes was verified by calculating the correlation coefficients between the total score of each axis and the total score of the questionnaire, and this is demonstrated in the following table:

Table (5) correlation coefficients between the total score of each axis and the total score of the questionnaire

s	Axis	Correlation coefficient
1	First axis: "The level of female teachers' awareness of 21st century skills"	.935**
2	Second axis: "The barriers to female teachers' acquisition of 21st century skills"	.777**

**** Statistically significant at the level of (0.01)**

Table (5) shows that the values of the correlation coefficients for the questionnaire axes with the total score of the questionnaire were high values, ranging between (.777** - .935**), and all of them were statistically significant at the level of (0.01); Which indicates the high level of construct validity for the axes of the questionnaire.

Second: study instrument reliability
Table (6) Cronbach's Alpha reliability coefficients
for the questionnaire axes

s	Axis	Number of items	Cronbach's alpha coefficient
1	First axis: "The level of female teachers' awareness of 21st century skills"	23	.841
2	Second axis: "The barriers to female teachers' acquisition of 21st century skills"	9	.966
Total		32	.865

Table (6) shows that the values of the reliability coefficients for the questionnaire axes were high values, as they between (.841-.966), and the value of the total reliability coefficient for the questionnaire axes was (.865); These values indicate the applicability of the questionnaire and the reliability of its results.

Presentation and discussion of the first question: "What is level of female teachers' awareness of 21st century skills?"

To answer this question, the arithmetic mean and standard deviation for each dimension in the first axis were calculated, and then the dimensions were arranged in a descending order based on the mean as shown in table (7):

Table (7) "The level of female teachers' awareness of 21st century skills"

s	Dimension	Mean	Standard deviation	Dimension rank	Response degree
2	Second dimension: the level of teachers' awareness of effective communication and cooperation skills	4.61	.453	1	Very high
1	First dimension: the level of teachers' awareness of creative thinking skills	4.51	.467	2	Very high
3	Third dimension: the level of teachers' awareness of leadership and project management skills	4.48	.500	3	Very high
4	Fourth dimension: the level of teachers' awareness of the skills of efficient use of technology	4.47	.478	4	Very high
Total score of the first axis: "The level of female teachers' awareness of 21st century skills"		4.52	.406	---	Very high

Table (7) shows that "The level of female teachers' awareness of 21st century skills" from the point of the responding teachers was (very high), where the total mean of the first axis was (4.52) and the standard deviation was (.406); The standard deviations of the first axis ranged between (.453 - .500), which are low values. This shows the homogeneity of the opinions of the respondents on these dimensions.

The second dimension: (the level of teachers' awareness of effective communication and cooperation skills) came in first place with a (4.61) mean and a (.453) standard deviation, followed by the first dimension: (the level of teachers' awareness of creative thinking skills) in second place with a (4.51) mean and a (.467) standard deviation, and the fourth dimension: (the level of teachers' awareness of the skills of efficient use of technology) came in last place with a (4.47) mean and a (.478) standard deviation.

The researcher believes that the very high response degree to the first axis: "The level of female teachers' awareness of 21st century skills" from the point of view of the respondents may be attributed to the keenness of the Ministry of Education in the Kingdom to provide curriculum makers for general education levels in the Kingdom with information about the importance of including 21st century skills, and the necessity of imparting them to students through male and female teachers. Perhaps the reason for this was the good qualification and continuous evaluation of the performance of teachers in the study sample according to 21st century skills, which increased the ability of teachers in all grade levels to acquire these skills and try to impart them to students according to the different grade levels.

This finding is consistent with that from the study of (Al-Harbi & Al-Tunsi, 2021), which confirmed that practicing creativity and learning skills in teaching from the point of view of teachers and supervisors was described as (often) which is a high level.

While it disagrees with the findings of the study of (Al-Jahni, 2019) which concluded that the total mean of middle-school teachers performance in light of 21st century skills was (2.6), indicating that teachers' teaching performance in light of 21st century skills was (average).

Presentation and discussion of the second question: "What are the barriers to female teachers' acquisition of 21st century skills?"

To answer this question, the arithmetic mean and standard deviation for each statements in the second axis "the barriers to female teachers' acquisition of 21st century skills" were calculated, and then the statements were arranged in a descending order based on the mean as shown in table (8):

Table (8) frequencies, percentages, arithmetic means, and standard deviations of responses to "the barriers to female teachers' acquisition of 21st century skills"

Statement	Response level					Mean	Standard deviation	State ment rank	R es p o n s e d e g r e e	
	Str on gly dis agree	Dis agree	Ne ut ral	A g r e e	Stro ngly agree					
2 Poor financial incentives for distinct teachers	f	1	21	36	67	80	4.00	1.012	1	High
	%	.5	10.2	17.6	32.7	39.0				
1 Poor use of different teaching strategies depending on the nature of the educational situation	f	1	21	51	85	47	3.76	.937	2	High
	%	.5	10.2	24.9	41.5	22.9				
9 Lack of educational software required to enhance 21 st century skills	f	8	32	64	63	38	3.44	1.081	3	High
	%	3.9	15.6	31.2	30.7	18.5				
5 Low motivation of some teachers towards unconventional thinking	f	6	46	59	58	36	3.35	1.100	4	Average
	%	2.9	22.4	28.8	28.3	17.6				
7 Inability of some teachers to use digital media	f	6	52	62	58	27	3.23	1.064	5	Average
	%	2.9	25.4	30.2	28.3	13.2				
6 Teachers' inability to create educational and social situations based on problem-solving and alternative assessment	f	6	49	72	55	23	3.20	1.020	6	Average
	%	2.9	23.9	35.1	26.8	11.2				
4 Weak commitment of some teachers to the ethical code of the teaching profession	f	16	68	50	42	29	3.00	1.192	7	Average
	%	7.8	33.2	24.4	20.5	14.1				
8 The school administration does not provide training	f	10	54	64	44	33	3.18	1.137	8	Average
	%	4.9	26.3	31.2	21.5	16.1				

	courses aimed at providing teachers with 21 st century skills											
3	Lack of educational supervisors' interest in providing teachers with 21 st century skills	f	11	59	57	43	35					Average
		%	5.4	28.8	27.8	21.0	17.1	3.16	1.174	9		
Total mean of the second axis: "the barriers to female teachers' acquisition of 21 st century skills"								3.36	.838	---	Average	

Table (8) shows that "the barriers to female teachers' acquisition of 21st century skills" was (average) from the point of view of the respondents, where the total mean of the second axis was (3.36) and the standard deviation was (.838); And the standard deviations for the statements of the second axis ranged between (.937 – 1.192).

Statement (2) (Poor financial incentives for distinct teachers) came in first place with a (4.00) mean and a (1.012) standard deviation, followed by statement (1) (Poor use of different teaching strategies depending on the nature of the educational situation) in second place with a (3.76) mean and a (.937) standard deviation, and statement (3) (Lack of educational supervisors' interest in providing teachers with 21st century skills) came in last place with a (3.16) and a (1.174) standard deviation; And the remaining statements of the second axis "the barriers to female teachers' acquisition of 21st century skills" had (average) response degrees.

The researcher believes that the (average) response degree to "the barriers to female teachers' acquisition of 21st century skills" from the point of view of the respondents may be attributed to the feeling that there are some special needs for teachers, whether financial, personal, or training needs, in order to acquire more 21st century skills and impart them to students.

This findings agrees with the study of (Mtebe & Raphael, 2018) which confirmed that the confidence level of respondents about their possession of 21st century skills were (average).

Presentation and discussion of the study hypotheses:

First: Are there statistically significant differences (at the level of 0.05) in the opinions of the respondents about the questionnaire axes according to the variable of (years of experience)?

To answer this question, a (One Way ANOVA) test was performed to explain the differences in the responses according to (years of experience); And the results of analysis about what the questionnaire axes contain and the total score were explained in table (9) below:

Table (9) Results of the "One Way Anova" for the differences in the responses on the study axes according to the (years of experience) variable

Axis		Sum of squares	df	Mean square	(f)	Significance	Significance level
First axis "the level of female teachers' awareness of 21 st century skills"	Between groups	.466	2	.233	1.414	.246	Not significant at > 0.05
	Within groups	33.316	202	.165	---		
	Total	33.783	204	---	---		
Second axis "the barriers to female teachers' acquisition of 21 st century skills"	Between groups	2.143	2	1.072	1.531	.219	Not significant at > 0.05
	Within groups	141.363	202	.700	---		
	Total	143.506	204	---	---		
Total score	Between groups	.667	2	.333	2.160	.118	Not significant at > 0.05
	Within groups	31.172	202	.154	---		
	Total	31.839	204	---	---		

Table (9) shows that:

- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about the first axis "the level of female teachers' awareness of 21st century skills" according to the variable of (years of experience).
- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about the second axis "the barriers to female teachers' acquisition of 21st century skills" according to the variable of (years of experience).

- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about questionnaire axes as a whole according to the variable of (years of experience).

The researchers believes that this finding may be due to the convergence of the knowledge levels of most of the teachers in the sample regarding their possession of 21st century skills and the difficulties they face in enhancing and increasing their possession of those skills. The reason for this may be the frequent exchange of knowledge and skills between teachers despite the difference in the years of experience they have. Which contributed to the convergence of their responses around the questionnaire axes and the total score.

This finding agrees with the study of (Pa-alisbo, 2017) which concluded that there were no statistically differences between respondents' in the levels of 21st century skills or job performance that can be attributed to the (length of service).

Second: Are there statistically significant differences (at the level of 0.05) in the opinions of the respondents about the questionnaire axes according to the variable of (number of training courses)?

To answer this question, a (One Way ANOVA) test was performed to explain the differences in the responses according to (number of training courses); And the results of analysis about what the questionnaire axes contain and the total score were explained in table (10) below:

Table (10) Results of the “One Way Anova” for the differences in the responses on the study axes according to the (number of training courses) variable

Axis		Sum of squares	df	Mean square	(f)	Significance	Significance level
First axis "the level of female teachers' awareness of 21 st century skills"	Between groups	.028	2	.014	.083	.920	Not significant at > 0.05
	Within groups	33.755	202	.167	---		
	Total	33.783	204	---	---		
Second axis "the barriers to female teachers' acquisition of 21 st century skills"	Between groups	3.976	2	1.988	2.878	.85	Not significant at > 0.05
	Within groups	139.530	202	.691	---		
	Total	143.506	204	---	---		
Total score	Between groups	.196	2	.098	.625	.536	Not significant at > 0.05
	Within groups	31.643	202	.157	---		
	Total	31.839	204	---	---		

Table (10) shows that:

- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about the first axis "the level of female teachers' awareness of 21st century skills" according to the variable of (number of training courses).
- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about the second axis "the barriers to female teachers' acquisition of 21st century skills" according to the variable of (number of training courses).
- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about questionnaire axes as a whole according to the variable of (number of training courses).

The researcher believes that this result may be due to the fact that most of the training courses provided to the respondents, are concerned with making them aware of the importance of possessing 21st century skills and their role in improving the outcomes of the educational process.

This finding disagrees with the study of (Al-Helw, 2016) which confirmed that there were

statistically significant differences at the level of (0.05) between the average score of the teachers in the questionnaire of the level of teachers' awareness of 21st century skills depending on (number of training courses) in favor of teachers who received more courses, especially in learning and creativity skills and information technology skills.

Third: Are there statistically significant differences (at the level of 0.05) in the opinions of the respondents about the questionnaire axes according to the variable of (grade level)?

To answer this question, a (One Way ANOVA) test was performed to explain the differences in the responses according to (grade level); And the results of analysis about what the questionnaire axes contain and the total score were explained in table (11) below:

Table (11) Results of the "One Way Anova" for the differences in the responses on the study axes according to the (grade level) variable

Axis		Sum of squares	df	Mean square	(f)	Significance	Significance level
First axis "the level of female teachers' awareness of 21st century skills"	Between groups	.779	3	.260	1.581	.195	Not significant at > 0.05
	Within groups	33.003	201	.164	---		
	Total	33.783	204	---	---		
Second axis "the barriers to female teachers' acquisition of 21st century skills"	Between groups	2.487	3	.829	1.181	.318	Not significant at > 0.05
	Within groups	141.020	201	.702	---		
	Total	143.506	204	---	---		
Total score	Between groups	.516	3	.172	1.105	.348	Not significant at > 0.05
	Within groups	31.322	201	.156	---		
	Total	31.839	204	---	---		

Table (11) shows that:

- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about the first axis "the level of female teachers' awareness of 21st century skills" according to the variable of (grade level).
- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about the second

axis "the barriers to female teachers' acquisition of 21st century skills" according to the variable of (grade level).

- There are no statistically significant differences (at the level of 0.05) in the opinions of the respondents about questionnaire axes as a whole according to the variable of (grade level).

The researcher believes that this result may be due to the interest of the school district in the Riyadh region mainly in the convergence of professional development methods for teachers, especially with regard to providing them with 21st century skills and transferring them to students during the teaching process, which contributed to the convergence of their responses around the questionnaire axes and the total score.

Summary of study findings:

- The level of female teachers' awareness of 21st century skills and their effectiveness in teaching performance from the point of view of respondents was (very high).
- The second dimension (the level of teachers' awareness of effective communication and cooperation skills) came in first place with a (4.61) mean and a (.453) standard deviation, followed by first dimension (the level of teachers' awareness of creative thinking skills) in second place with a (4.51) and a (.467) standard deviation, and fourth dimension (the level of teachers' awareness of the skills of efficient use of technology) in last place with a (4.47) mean and a (.478) standard deviation.
- The barriers to teachers' acquisition of 21st century skills were (average) from the point of view of the study sample.
- There are no statistically significant differences at the level of (0.05) in the opinions of the sample about questionnaire axes as a whole according to the variable of (years of experience).
- There are no statistically significant differences at the level of (0.05) in the opinions of the sample about questionnaire axes as a whole according

to the variable of (number of training courses).

- There are no statistically significant differences at the level of (0.05) in the opinions of the sample about questionnaire axes as a whole according to the variable of (grade level).

Study recommendations:

- The need to pay attention to developing appropriate treatment plans for those with low achievement.
- Working to encourage female students to practice critical and creative thinking.
- The need to provide strategies that encourage female students to self-learning.
- The need to have a bank of questions included in the course you teach so that students can benefit from it.
- The need to develop observable and measurable teaching plans.
- The need to take into account individual differences among students.
- The need to learn the advantages and disadvantages of each evaluation method and follow the most appropriate one.

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