

Research Article

The Reality of Middle School (Intermediate) Female Students in Saudi Arabia and the Practice of 21st-Century Skills: Teachers' Perspective

Norah Nasser Saleh Alowayyid 

Department of Educational Sciences, College of Education in Al-Kharj, Prince Sattam Bin Abdulaziz University, Al-Kharj 11942, Saudi Arabia

Correspondence should be addressed to Norah Nasser Saleh Alowayyid; n.alowayyid@psau.edu.sa

Received 9 November 2022; Revised 25 November 2022; Accepted 28 November 2022; Published 31 January 2023

Academic Editor: Mehdi Nasri

Copyright © 2023 Norah Nasser Saleh Alowayyid. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The skills that were considered necessary for success in the 21st century included the ability to improve social and intellectual abilities such as communication, cooperation, critical thinking, and problem-solving, as well as creativity and innovation. It also contains methods of working, interacting, cooperating, and working in teams so that they can encourage and support skills relevant to the 21st century, such as literacy, information technology, and digital networks. Thus, this study aims to know the reality of middle school (intermediate) pupils in the Kingdom of Saudi Arabia about putting the skills of the 21st century into practice. The researcher employed the descriptive survey approach in her work, and the study tool (questionnaire) was used on a random sample composed of middle school (intermediate) teachers (female) in the Al-Qassim region. The following are some of the major results of the study: The use of technology by the middle school (intermediate) female students efficiently and effectively garnered a high response rate from the study participants. However, the intermediate students' skills in information, media and technology culture, health and safety skills, and self-leadership put into practice earned an average response rate from the study participants. There were statistically significant differences in the study, which favored higher education qualifications and the attendance of training courses relevant to the "skills of the 21st century," with no statistically significant differences for the more years of experience. The study advised that material and moral motivation tactics should be utilized as it is of essential relevance and required for the leaders of schools to urge them on new leadership practices.

1. Introduction

Education focuses on creating a cognitively, educationally, culturally, socially, and emotionally perfect individual. Individuals are expected to fulfill society's requirements for knowledge, experience, and behaviors, especially in the 21st century, which imposes changes on the educational system that require it to develop its policies, strategies, and plans based on a set of educational methods and modern trends. These approaches and trends require students at all educational levels to possess a set of skills known as "the skills of the 21st century." Academic Forums in the 21st century [1] noted that it is no longer viable to teach students using a "one-dimensional learning method"

based on a single specialization because education in the era of globalization requires several skills consistent with 21st-century factors. To give students the abilities of cooperation, communication, problem-solving, and information dissemination consistent with the new global transformation, it is crucial to examine and reconsider the curricula and educational practices. To address these challenges and fulfill educational requirements, the US Department of Education and the American Association of Colleges for Teacher Education [2] emphasized that institutions of higher education must intensify their efforts to attain mastery of 21st-century skills such as critical thinking, problem-solving, communication, collaboration, creativity, and innovation. In addition, it incorporates

the deployment of technology to strengthen and improve instructional methods [3, 4].

More importantly, the partnership for 21st century learning has developed a unified, collective vision for learning that is known as the framework for 21st century learning. This vision is intended to assist practitioners in integrating skills into the teaching of core academic subjects. This framework outlines the competencies, knowledge, and expertise that students need to acquire to be successful in both their professional and personal lives. It is a combination of subject-matter knowledge, specific skills, and expertise, as well as literacies [5–7]. The cultivation of fundamental academic subject knowledge and an understanding among all participants is necessary for the successful implementation of any 21st-century skills initiative. Building on a foundation of fundamental academic subject knowledge is required for those who can think critically and effectively communicate. Students are taught the crucial skills for success in today's world, such as critical thinking, problem-solving, communication, and collaboration, within the context of the instruction of core knowledge. These skills are necessary for students to be successful in today's world. When a school or district builds on this foundation, combining the entire Framework with the necessary support systems—standards, assessments, curriculum and instruction, professional development, and learning environments—students are more engaged in the learning process and graduate better prepared to thrive in today's global economy. When a school or district builds on this foundation, students are more prepared to thrive in today's global economy. Although the graphic depicts each component in its own unique way to describe it, the partnership sees all of the components as being fully interconnected in the process of teaching and learning in the 21st century [8–11].

Learners' abilities to learn and innovate are increasingly acknowledged as the dividing line between those who are and are not ready for the increasingly complicated life and work situations of the 21st century. Developing students' capacities for original thought, critical analysis, effective communication, and teamwork is crucial for their future success. Also, in the 21st century, people have access to an unprecedented amount of information, technological tools are constantly evolving, and the opportunities for collaboration and individual contribution are greater than ever before. A wide variety of information, media, and technology-related functional and critical thinking abilities are essential for citizens and professionals to thrive in the 21st century [12–14]. Finally, in today's life and work circumstances, you need more than just the ability to think critically and learn new information. Students in today's globally competitive information age need to devote significant time and energy to the development of relevant life and professional skills to succeed in a variety of contexts.

4C is an abbreviation for the following 21st-century skills: communication, collaboration, critical thinking, problem-solving, creativity, and innovation. The 4C is broken down into four distinct phases: first, thinking skills, which cover areas such as originality, critical thinking, problem-solving,

decision-making, and initiative in learning [15–17]; second is a set of skills related to doing a job, such as talking to people and figuring out how to make teams work; third, how to be both a global and a local citizen and still get along with one another; and fourth, resources for building 21st-century competencies, such as ICT, DN, and literacies. If this idea could be applied in schools and students were endowed with these virtues, including communication, teamwork, critical thinking, problem-solving, creativity, and innovation—the results would be wonderful for human resources. As previously said, Trilling and Fadel [18] first proposed the idea of a rainbow of skills and knowledge as core subjects or main competencies that must be mastered within the context of 21st-century education. Trilling and Fadel [18] emphasized that while a wide range of abilities and knowledge is useful in the setting of the 21st century, the most important skills to have are those related to learning and creativity. The ability to communicate and work together effectively, the ability to think creatively and find original solutions to issues, and the ability to be inventive and creative are all part of this category of abilities. Economic, social, political, and educational difficulties all call for these abilities, hence they are considered vital. Therefore, in addition to teaching pupils-specific scientific facts, the educational experience should focus on helping them develop these abilities [19, 20].

Students will develop a wide range of ancillary abilities as a result of the modern learning orientations, including the ability to think creatively and solve problems, as well as the ability to use a variety of reasons effectively, to think systematically, to consider and make decisions, and to solve problems. The goal of teaching students how to communicate clearly and effectively in a variety of contexts through reading, writing, speaking, and listening is the same as that of teaching them how to work effectively with others through negotiating agreements and understanding one another's contributions to a group project. The ability to think creatively, work creatively with others, and produce a wide range of innovations are all things that we hope to instill in our students by cultivating their innovative and creative spirits.

Since the intermediate stage of education is a transitional stage between two stages, namely the primary stage and the secondary stage, which represents the end of childhood and the beginning of adolescence, it is necessary to identify the growth characteristics that distinguish this stage from others and the most important skills that students can acquire and apply to achieve comprehensive and integrative development. In addition, considering the significance of the goals of this stage of education in the Kingdom of Saudi Arabia, the researcher felt compelled to investigate the reality of 21st-century skills implementation among intermediate students.

1.1. The Problem of the Study. Several conferences, such as the “International Conference on Education Evaluation—Future Skills, Development, and Assessment” held in Riyadh in December 2018 and the first conference of the Saudi Scientific Association for Teachers titled “Teacher: Requirements for Development and Future Aspiration” held at King Khalid University in Abha in December 2019, recommended that

there is an urgent need to develop, practice, and evaluate the educational skills and knowledge of teachers. The Ministry of Education in the Kingdom of Saudi Arabia (MOE) launched the so-called educational pathways system or the new academic system at the middle school (intermediate) level to improve the educational process and educational outcomes and create alignment between students' qualifications and the requirements of the modern job market. Therefore, acquiring and applying 21st-century skills from a young age, particularly during middle school, prepares children for real-life's success. Based on the previous, the following question determined the study problem: what is the reality for middle school (intermediate) students when it comes to using 21st-century skills?

1.2. Research Questions. The study poses the following research questions:

- (RQ1) What is the reality of middle school (intermediate) students regarding practicing the skills of using technology efficiently and effectively from the teachers' perspective?
- (RQ2) What is the reality of middle school (intermediate) students regarding putting the skills of information, media, and technology into practice from the teachers' perspective?
- (RQ3) What is the reality of middle school (intermediate) students regarding putting health and safety skills into practice from teachers' perspectives?
- (RQ4) What is the reality of middle school (intermediate) students regarding putting the skills of self-leadership from the teachers' perspective?
- (RQ5) Are there statistically significant differences in the skills of the 21st century among students (female) with the difference in variables (educational qualification, years of experience, and training courses for the skills of the 21st century)?

1.3. Research Objectives. The study was undertaken under the following objectives: first, it tries to reveal the reality of middle school (intermediate) students regarding practicing the skills of using technology efficiently and effectively from a teacher's perspective (female). Second, it aims to know the reality of middle school (intermediate) students regarding putting the skills of information, media, and technology into practice from a teacher's perspective (female). Third, it aims to identify the reality of middle school (intermediate) students regarding putting health and safety skills into practice from the teacher's perspective (female). Fourth, it attempts to know the reality of middle school (intermediate) students regarding putting their self-leadership skills from the teacher's perspective (female). Fifth, it tries to reveal statistically significant differences in the level of skills of the 21st century among students (female) with the difference of variables (educational qualification, years of experience, and training courses for the skills of the 21st century).

1.4. Significance of the Study. The present study is notable due to the novelty of its subject, namely the skills of the 21st century, as this subject is regarded as one of the most important subjects in all educational systems. The study will aid the educational field in identifying the most significant practices of students about 21st-century abilities and bolstering them through instructors, curriculum, educational activities, and extracurricular programs. Students in the Kingdom of Saudi Arabia schools will be taught with 21st-century capabilities.

2. Literature Review

2.1. The Theoretical Background and the Previous Studies. The 21st century necessitates that this generation acquires various abilities that enable individuals to deal with and stay up with innovations that occur rapidly. Education is one of the most significant means for a person to acquire these abilities, as it creates a suitable atmosphere and prepares teachers who stay abreast of these changes. The current educational condition is reviewed in light of the demand for those abilities so that students can acquire them in the future and implement them successfully and realistically to keep up with the times.

The term "almaharah," which is translated as "skill," is derived lexically from the root verb "Mahara," which means to be adept at doing every action. The best way to explain it is "excellent swimmer" [21]. Contextually, the term "almaharah" (skill) is described as "the talents that prepare a student for the future in consideration of the increasingly complex nature of life." 21st-century skills are also defined as "a collection of necessary abilities that ensure learners' readiness for learning, innovation, life, and work in the 21st century, as well as the optimal use of information and technology" [22]. The skills of the 21st century consist of four fundamental skills: "computer skills and their use, participative skills, communication skills, and critical thinking skills," which the student must possess to meet 21st-century needs [23]. A student can exercise and apply the competencies during her studies through her preparations, abilities, tendencies, and educational requirements. These attributes: these procedural skills are defined by the researcher as the efficient and effective use of technology and skills linked to information, media, technology, health, safety, and self-leadership. One important concept is the middle stage (high school) which, according to Zahran [24], is the transitional period between childhood and adulthood. The researcher describes the "middle stage" as the stage that divides the primary and secondary levels of education in the Kingdom of Saudi Arabia. This period consists of "three academic years" between 12 and 15. Ghandoura [25] indicated that the most important skills of the 21st century are the following:

- (1) Learning and creativity skills: They consist of critical thinking, problem-solving, communication, and participation abilities, as well as invention and creativity.
- (2) Skills of digital culture: They include skills of information culture, media culture, information technology, and communication culture.

- (3) Life and career skills: They consist of adaptability and resiliency, initiative and self-direction, social interaction and communication, intercultural interaction, productivity and accountability, and self-leadership and responsibility.

2.2. *The Previous Studies.* The foreign, Arab, and local studies on the skills of the 21st century were diverse. This study will provide the most significant research on the 21st-century skills required at the intermediate level (middle school). They are listed below.

The objective of the study of Claro et al. [26] was to track and evaluate middle school students' information and communication technology (ICT) skills, one of the most crucial skills of the 21st century (intermediate). Using an observational instrument, the researcher used the survey approach to Chilean middle school pupils to measure these competencies. The study offered a concept for third-grade intermediate pupils based on the competencies of the 21st century. In another study, Sobhi [27] tried to determine the extent to which 21st-century skills are incorporated into the advanced science curriculum for the first intermediate grade in the Kingdom of Saudi Arabia. The researcher employed the descriptive-analytic method with a questionnaire that covered seven domains: critical thinking, problem-solving, innovation and creativity, cooperation and teamwork, leadership, understanding of multiple cultures, the culture of communication, information and media, computing culture, and ICT, occupation, and self-directed learning. The sample represented "six advanced scientific courses" for the two semesters of the academic year 1436–1437 AH in the first intermediate grade. The results of the investigation revealed that there was no incorporation of life skills into advanced science courses.

In another research, ElHoteby [28] evaluated the teaching performance of middle school science teachers in light of 21st-century abilities. The researcher compiled a list of 21st-century skills and a questionnaire (21st-century skills of science teachers), which included the following four skills: computer skills and their application, participatory skills, communication skills, and thinking skills. Following the skills of the 21st century, middle school (intermediate level) science teachers must improve their performance, according to the findings. Moreover, Al-Juhani [29] assessed the effectiveness of middle school science teachers in light of 21st-century abilities. Following the descriptive methodology, the researcher compiled a list of 21st-century competencies that science instructors must possess and a note card. The list included five categories: technology-related skills, participation skills, communication skills, specific professional skills, and critical thinking abilities. The index card contained 61 items. Twenty-five science instructors in the city of Tabuk were given the tools. The results indicated that in light of 21st-century skills, the performance of science teachers in the classroom was average. In addition, Al-Shahrani and Al Mahfouz [30] attempted to evaluate the content of intermediate-level scientific courses in light of 21st-century abilities. In the study, the researcher used a descriptive method and analyzed the content in six units of the intermediate

science curriculum, including a list of 21st-century abilities. The skills of "digital culture" and "life and professional skills" are not present at all in the scientific curriculum at the intermediate level, which is one of the most significant findings.

It can be observed that all previous research was completed recently and is consistent with the current study's topic. This study concurs with all prior research that the emphasis should be on the culture of 21st-century skills and that these skills should be activated in the classroom and school. In addition, the present study is consistent with past research in its descriptive methodology. All previous studies concurred on the importance of focusing on the skills of the 21st century in teaching and education, as it should be considered a matter of utmost importance that all educational systems adopt the skills of the 21st century, and classroom practices for students should be designed and developed accordingly. The present study benefited from prior research to enhance the theoretical component and develop the research instrument. It is observed that the Arab and local studies that dealt with 21st-century skills were limited to evaluating the books and curriculum in light of these abilities, proposing concepts, examining teachers' teaching techniques and strategies, and activating these skills in the curricula. However, the present study distinguishes itself from others by focusing on the reality of middle school (intermediate) pupils practicing these abilities in their classes.

3. Methodology

3.1. *Design of the Study.* The researcher used the descriptive analytical method, which is a type of descriptive method, to achieve the research's objectives. The descriptive method is the one that accurately quantifies and describes qualitatively and quantitatively a phenomenon. The correlative method reveals the relationships between two or more variables to determine their correlation and quantify it using a numerical technique.

3.2. *The Population of the Study.* According to the most recent statistic released by the General Administration of Education in Al-Qassim for 2020/21, the population of this study consists of 1,924 Al-Qassim intermediate teachers (middle school). The study sample was selected based on the method of AACTE [2] to determine the size of the study sample according to Equation (1):

$$S = \frac{XNP(1-P)}{d^2(N-1) + X(P(1-P))}. \quad (1)$$

Here S = sample size, N = size of study population, P = percentage of population. Krejcie and Morgan [31] suggested that it should be equal to 0.5 because it will provide the largest possible sample size. D = the degree of accuracy as reflected by the allowable error. Krejcie and Morgan [31] suggested that it should be equal to 0.5. X = the value of choosing the chi-square at one degree of freedom and confidence level is 0.095, which is 3.841.

TABLE 1: Distribution of study participants according to their job variables.

Training courses for the skills of the 21st century	Repetition	Percentage	Educational qualification	Repetition	Percentage
I did not get training	85	25.8	Bachelor and less	275	83.6
I got 1 training	163	49.5	Higher studies	54	16.4
I got 2 pieces of training	25	7.6	Total	329	100%
I got more than 3 pieces of training	56	17	Years of experience	Repetition	Percentage
Total	329	100	Less than 5 years	53	16.1
			From 5 to less than 10 years	123	37.4
			From 10 years and above	153	46.5
			Total	329	100

The present study's sample size reached 320 after the researcher sent the e-questionnaire to teachers and received 329 electronic responses (female). The following are the characteristics of the study sample based on their occupational variables.

Table 1 demonstrates that the study sample (275) represents 83.6% of the study population with a bachelor's degree; this group is the largest in the study sample. The largest group in the sample has 10 or more years of work experience; their number in the sample (163) represents 49.5%. In addition, most of the study sample received at least one training course for 21st-century skills, as their number of 153 represented 46.5%.

3.3. Instruments. A questionnaire was employed to collect data to accomplish the study's aims. The questionnaire consisted of the following two sections: first part: it measures the primary data, which includes educational level, years of experience, and training courses organized for 21st-century abilities, and second part: it contains 32 items that measure the study's variables and is separated into the following four themes:

- (1) Ability to use technology effectively and efficiently: it includes six components.
- (2) Information, media, and technology culture competency include five components.
- (3) Health and safety skills, which include 12 items.
- (4) Self-leadership skills: it has nine items.

The response to the questionnaire items was provided by choosing an alternative from five points according to the 5-point Likert scale, i.e., strongly agree (5) agree (4) neutral (3) disagree (2), and strongly disagree (1).

3.3.1. Validity of Instruments. The validity of the research tool (questionnaire) was verified in two ways.

- (1) *Face Validity (by Arbitrators):* The researcher presented the study instrument in its initial form to a group of eleven specialists from the faculties of several Saudi universities to assess the questionnaire's validity in terms of the degree to which the questions are relevant to the objectives and the clarity of the language. Using the arbitrators' comments as a

guide, the researcher modified the questionnaire accordingly.

- (2) *Validity of Internal Structure:* The questionnaire's internal consistency was determined by calculating the "Pearson correlation coefficient" between each item, the theme to which it belongs, and the questionnaire's degree, as shown in Table 2.

Table 2 shows that all the items have a level of significance of 0.01, which reveals that all the questionnaire items enjoy a high degree of reliability, making them suitable for field application.

3.3.2. Stability of Research Tool. The researcher verified the stability of the research tool by calculating the stability of the study tool using Cronbach's alpha coefficient in Table 3.

Cronbach's alpha stability coefficient values ranged from 0.793 to 0.977, and the total stability coefficient value for all topics of the study was 0.973, which are all strong stability coefficients indicating that the study instrument is valid for field application.

3.3.3. Correction of Study Tool. To simplify the understanding of the data, the researcher employed the following procedure to assess the level of response to the instrument's (questionnaire) items: a weight was assigned to each of the possibilities presented in Table 4, and they were statistically treated as described.

Then, those responses were classified into five equal levels through the following equation:

$$\begin{aligned} \text{Category length} &= (\text{largest value} - \text{lowest value}) \\ &\quad \div \text{number of tool alternatives} \quad (2) \\ &= (5 - 1) \div 5 = 0.80. \end{aligned}$$

And we got the following classification in Table 5.

3.4. Methods of Data Analysis. To determine the features of the study sample, compute the validity and stability of the tools, and answer the research questions, the researcher employed the following statistical methods:

- (1) Frequencies and percentages indicate the research sample's characteristics.

TABLE 2: Correlation coefficients of the items of the study's theme with the theme to which it belongs as well as with the total score of the questionnaire.

#	Items of questionnaire themes	Correlation coefficient of theme	Correlation coefficient of questionnaire
First theme			
1	Practicing electronic writing, publishing, and exchanging information with knowledge sources, individuals and parties	0.957**	0.951**
2	How to deal with smart devices and electronic games and how to use them properly	0.991**	0.925**
3	Understand and apply the techniques of taking professional photos with smart devices and specialized cameras	0.977**	0.935**
4	Create short videos using techniques, devices, and amateur software	0.980**	0.942**
5	Understand the characteristics of new media tools and how to benefit from them and deal with them	0.862**	0.793**
6	Awareness of the importance of mastering the skills of media and life	0.923**	0.852**
Second theme			
1	Awareness of information security requirements and their applications	0.434**	0.404**
2	Self-protection from health and psychological damage resulting from the misuse of technology	0.495**	0.488**
3	Understanding and realizing the methods of advertising and media and their impact on building perceptions and guiding opinion and decision	0.933**	0.676**
4	Acquisition of basic media skills and their contemporary applications	0.850**	0.670**
5	Valuing the importance of acquiring sound and safe habits in technical and informational dealings	0.927**	0.675**
Third theme			
1	Understand the basic rules of procedures for safety from household hazards and accidents	0.559**	0.556**
2	Understand the basic rules of security and safety procedures when using the road	0.845**	0.715**
3	Understand the basic rules of procedures for safety from fire, crowds, and school accidents in general	0.853**	0.718**
4	Practicing basic motor skills	0.919**	0.897**
5	Explain the proper behavior in situations of multiple accidents and dangers	0.908**	0.851**
6	Understanding and realizing ways to deal with and prevent seasonal diseases, epidemic viruses, and the like	0.802**	0.751**
7	Appreciating the importance of health and personal hygiene and their impact on wellness and success	0.869**	0.905**
8	Practice proper healthy habits in eating, drinking, sleeping, and sports	0.626**	0.529**
9	Knowing and avoiding habits, practices, and foods that are harmful to the body and mind	0.526**	0.555**
10	Identify sources of stress and tension and deal with them positively and firmly	0.628**	0.451**
11	Accept change, adapt to it, and use it to achieve personal goals	0.840**	0.918**
12	Develop the ability to control reactions and attitudes towards changes and emergencies	0.654**	0.646**
Fourth theme			
1	Organizing and planning works and tasks efficiently and effectively	0.663**	0.496**
2	Identifying strengths and capabilities and investing them for beneficial purposes	0.921**	0.834**
3	Define and implement specific goals	0.830**	0.779**
4	Believe in his abilities and his potential to achieve excellence and success	0.862**	0.713**
5	Practicing techniques to enhance confidence and build self-affirmation	0.840**	0.616**
6	Explain the concept of leadership, its requirements and practices, and how to acquire it	0.821**	0.719**
7	Apply leadership skills in real-world contexts	0.857**	0.899**
8	Knowing how to carry out duties and responsibilities in a balanced and correct manner	0.858**	0.925**
9	Appreciating the importance of building, growth, and self-learning and continuing to do so in achieving human excellence	0.760**	0.757**

**Items at 0.01 significance level or less.

TABLE 3: The stability coefficients of Cronbach's alpha.

Themes of the study	Number of items	Stability coefficients
First theme	6	0.977
Second theme	5	0.793
Third theme	12	0.931
Fourth theme	9	0.938
Total	32	0.973

TABLE 4: Correction of study tool.

Response	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Rating	5	4	3	2	1

TABLE 5: Distribution of categories according to the gradation used in the study tool.

Description	Averages
Strongly agree	From 4.21 to 5.00
Agree	From 3.41 to 4.20
Neutral	From 2.61 to 3.40
Disagree	From 1.81 to 2.60
Strongly disagree	From 1.00 to 1.80

- (2) The arithmetic means to determine the extent of the growth or decrease in the opinions of the study participants for each item of the study variables and the primary themes, as well as to organize the items according to the degree of response based on the highest arithmetic mean.
- (3) Standard deviation to determine the extent to which the opinions of the study participants differ from the arithmetic mean for each of the study variables' items and each of the major topics. The standard deviation demonstrates the dispersion of the study participants' opinions on each study variable and the major themes. When its value approaches 0 and opinions become concentrated, the dispersion between the scales decreases. Also, to order the things according to the arithmetic mean in favor of the item with the smallest dispersion when the arithmetic mean is identical.
- (4) Cronbach's alpha coefficients are used to determine the stability of search tools.
- (5) Pearson correlation coefficient for calculating the instrument's internal consistency.
- (6) An independent sample *t*-test was performed to determine whether there were statistically significant differences between the responses of research participants whose variables fell into two categories.
- (7) A one-way ANOVA was used to determine the significance of the differences in the answers of the study sample to the themes based on their more than two-category work factors.

- (8) The least significant difference (LSD) test was used to determine the validity of the differences in the responses of the study sample based on their personal and occupational variables that are divided into more than two categories if the one-way analysis of the variance test indicated that there were differences.

4. Results and Discussion

4.1. Answering the First Question: What Is the Reality of Middle School Students (Female) Regarding Skills in using Technology Effectively and Efficiently? The researcher calculated the frequencies, percentages, averages, and standard deviations of the items of the theme "the reality of middle school students regarding practicing the skills of using technology efficiently and effectively" to determine the reality of middle school students skills in this area. The results are displayed in Table 6.

Middle school (intermediate) pupils practice the ability to use technology efficiently and effectively as one of the talents of the 21st century to a high degree, as the average rating of study participants (female instructors) on the degree of practice connected to these skills was 3.55 out of 5.00. The fact that the average falls in the fourth category of the five-scale categories (3.44–4.20) implies that the choice of the degree of approval of female teachers about the students' practice of technology skills indicates "agree." According to the study's findings, there is a disparity in the study participants' opinions regarding the extent to which students use technology efficiently and successfully. The average levels of acceptance for the extent to which students practiced the abilities associated with efficiently and effectively using technology ranged from 3.28 to 3.71. They are third- and fourth-category indications, indicating that the approval of the research participants (female instructors) indicates (neutral/agree) and that the degree to which pupils exercise skills linked to using technology efficiently and effectively indicates (medium/high), respectively. This is consistent with Kereluik's [32] study, which revealed that most of the skills included in the content of social studies textbooks at the elementary level are "digital culture" abilities. However, it disagrees with the study; also, it was discovered that among the skills of using technology efficiently and effectively that students practice, the skill represented by item no. 3, "Understand and apply the techniques of taking professional photos with smart devices and specialized cameras," is the most frequently used, as it occupied first place with an average approval rating of 3.71 out of 5.00, followed by the skill represented by item no. 4 "Create short videos using techniques, dexterity, and creativity" with an average approval rating of 3.71 out of these averages indicate that students exercise these skills to a significant degree. Among the skills of using technology efficiently and effectively that students practice, item no. 5, "Understand the characteristics of new media tools and how to benefit from them and deal with them," received the lowest average approval rating (3.28 out of 5.00), placing it in sixth place. This indicates that students practice these skills to an average degree.

TABLE 6: The study participants' responses to items of the "reality of middle school students regarding practicing the skills of using technology efficiently and effectively" are arranged in descending order according to the arithmetic mean.

#	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Arithmetic mean*	Standard deviation	Degree of agreement	Rank
3	Understand and apply the techniques of taking professional photos with smart devices and specialized cameras	79 24	19 5.8	0 0	52 15.8	179 54.4	3.71	1.691	Agree	1
4	Create short videos using techniques, devices, and amateur software	64 19.5	34 10.3	0 0	87 26.4	144 43.8	3.65	1.576	Agree	2
2	How to deal with smart devices and electronic games and how to use them properly	63 19.1	35 10.6	0 0	101 30.7	130 39.5	3.61	1.548	Agree	3
1	Practicing electronic writing, publishing, and exchanging information with knowledge sources, individuals and parties	53 16.1	45 13.7	0 0	125 38	106 32.2	3.57	1.462	Agree	4
6	Awareness of the importance of mastering the skills of media and life	29 8.8	63 19.1	25 7.6	142 43.2	70 21.3	3.49	1.262	Agree	5
5	Understand the characteristics of new media tools and how to benefit from them and deal with them	34 10.3	64 19.5	68 20.7	103 31.3	60 18.2	3.28	1.256	Neutral	6
Overall average							3.55	1.397	Agree	

* Arithmetic mean from (5.00).

4.2. Answering the Second Question: What Is the Reality of Middle School (Intermediate) Students Regarding Putting the Skills of Information, Media, and Technology into Practice? To determine the reality of middle school (intermediate) students in terms of putting the skills of information, media, and technology into practice, the researcher calculated the frequencies, percentages, averages, and standard deviations of the items of the theme “reality of middle school (intermediate) students in terms of putting the skills of information, media, and technology into practice.” The results are shown in Table 7.

Middle school (intermediate) students practice the skills of information, media, and technology culture as one of the 21st-century skills to an average degree, as the average approval of the study participants (female teachers) on the degree of practice related to information, media, and technology culture skills were 2.96 out of 5.00. The decision of the degree of approval of female teachers on the student’s practice of the skills of information, media, and technology culture indicates “neutral” according to the average, which falls in the third group of the five-scale categories ranging from 2.61 to 3.40. The study’s results revealed that the participants’ opinions regarding the extent to which students exercise information, media, and technology culture skills differ. The average level of approbation for the students’ application of information, media, and technology culture abilities ranged from 2.66 to 3.14. They are the indications that fall under the third criterion, which indicates that the acceptance of the study participants (female instructors) suggests (neutral), which means that the extent to which students exercise information, media, and technology culture-related abilities indicate (neutral) (medium). This is consistent with the findings of Al-Juhani’s [29] study, which found that the teaching performance of female science teachers in the 21st century was average. It was discovered that among the skills of information, media, and technology culture that students practice, the skill represented by item no. 4, “Acquisition of basic media skills and its contemporary applications,” is the most frequently used, as it ranked first with an average approval rating of 3.14 out of 5.00, followed by the skill represented by item no. 3, “Understanding and realizing the methods of advertising and media and their impact on society,” with an average approval rating of 3.10 out of 5.00. This indicates that pupils practice these abilities to a moderate degree.

4.3. Answering the Third Question: What Is the Reality of Middle School (Intermediate) Students Regarding Putting Health and Safety Skills into Practice? To determine the reality of middle school (intermediate) students in terms of putting health and safety skills into practice, the researcher calculated the frequencies, percentages, averages, and standard deviations of the items related to the theme “reality of middle school (intermediate) students in terms of putting health and safety skills into practice,” with the results depicted in Table 8.

Middle school (intermediate) pupils practice health and safety skills as one of the abilities of the 21st century to an

average degree, as the average acceptance of the study participants (female instructors) on the degree of practice linked to health and safety skills was 3.17 out of 5.00. The decision of the degree of approval of female teachers on the students’ practice of health and safety skills corresponds to “neutral” according to the average, which falls within the third of five-scale categories ranging from 2.61 to 3.40. The study’s findings revealed that the participants’ opinions regarding how students exercise health and safety skills are consistent. The average degree of acceptance for the pupils’ use of health and safety skills ranged between 2.66 and 3.14. They are third-category indicators indicating that the approval of the study participants (female teachers) suggests “neutral” and that the extent to which pupils practice health and safety-related skills indicate “neutral” (medium). This differs from studies by Sobhi [27] and Mohammed Saad Al Ghawa Al-Shahrani and Zaidan Abdullah Al Mahfouz [30], which found that learning and creativity abilities are included in the science curricula for the intermediate level, although at a relatively low rate. It was determined that, among the health and safety skills practiced by students, the skill represented by item no. 11, “Accept change, adapt to it, and use it to achieve personal goals,” was the most frequently used, with an average approval rating of 3.38 out of 5.00, followed by item no. 3, “Understand the basic rules and procedures of safety from fire, crowds, and school accidents in general.” This indicates that pupils practice these abilities to a moderate degree.

4.4. Answering the Fourth Question: What Is the Reality of Middle School (Intermediate) Students Regarding Putting the Skills of Self-Leadership into Practice? To determine the reality of middle school (intermediate) students in terms of putting their self-leadership skills into practice, the researcher calculated the frequencies, percentages, averages, and standard deviations of the items related to the theme “reality of middle school (intermediate) students in terms of putting the self-leadership skills into practice.” The results are shown in Table 9.

Middle school (intermediate) pupils exercise the abilities of self-leadership as one of the 21st-century skills to an average degree, as the average acceptance of the study participants (female instructors) on the degree of practice connected to self-leadership skills was 3.16 out of 5.00. The average falls in the third category of the five-scale categories between 3.41 and 4.20, indicating that the decision of the degree of approval of female professors regarding the students’ practice of self-leadership skills indicates “neutral.” The study’s results revealed that the study participants’ opinions regarding how students practice self-leadership abilities are inconsistent. The average degree of approbation for the students’ application of self-leadership skills was between 2.87 and 3.44. They are the indicators that belong to the fourth category, indicating that the approval of the study participants (female instructors) signals (neutral). In contrast, the degree to which pupils practice self-leadership abilities suggests (medium/high) correspondingly. In addition, it was discovered that, among the self-leadership skills practiced by students, the skill represented by item no. 7, “Apply leadership skills in real-world

TABLE 7: The study participants' responses to items of the "reality of middle school (intermediate) students regarding putting the skills of information, media, and technology into practice" are arranged in descending order according to the arithmetic mean.

#	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Standard deviation	Degree of agreement	Rank
4	Acquisition of basic media skills and their contemporary applications	36 10.9	34 10.3	139 42.2	88 26.7	32 9.7	1.087	Neutral	1
3	Understanding and realizing the methods of advertising and media and their impact on building perceptions and guiding opinion and decision	0	85	139	105	0	0.759	Neutral	2
5	Valuing the importance of acquiring sound and safe habits in technical and informational dealings	18 5.5	92 28	114 34.7	73 22.2	32 9.7	1.055	Neutral	3
2	Self-protection from health and psychological damage resulting from the misuse of technology	0	94	170	65	0	0.691	Neutral	4
1	Awareness of information security requirements and their applications	0	175	90	64	0	0.784	Neutral	5
Overall average		0	53.2	27.4	19.5	0	2.96	Neutral	

* Arithmetic mean from (5.00).

TABLE 8: The study participants' responses to items of the "reality of middle school (intermediate) students regarding putting the skills of health and safety into practice" are arranged in descending order according to the arithmetic mean.

#	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Standard deviation	Degree of agreement	Rank
11	Accept change, adapt to it, and use it to achieve personal goals	Frequency % 0 0	89 27.1	25 7.6	215 65.3	0 0	3.38	Neutral	1
3	Understand the basic rules of procedures for safety from fire, crowds, and school accidents in general	Frequency % 29 8.8	77 23.4	50 15.2	102 31	71 21.6	3.33	Neutral	2
7	Appreciating the importance of health and personal hygiene and their impact on wellness and success	Frequency % 25 7.6	82 24.9	25 7.6	154 46.8	43 13.1	3.33	Neutral	3
4	Practicing basic motor skills	Frequency % 0 0	106 32.2	18 5.5	205 62.3	0 0	3.3	Neutral	4
5	Explain the proper behavior in situations of multiple accidents and dangers	Frequency % 7 2.1	91 27.7	53 16.1	167 50.8	11 3.3	3.26	Neutral	5
6	Understanding and realizing ways to deal with and prevent seasonal diseases, epidemic viruses, and the like	Frequency % 17 5.2	98 29.8	53 16.1	120 36.5	41 12.5	3.21	Neutral	6
2	Understand the basic rules of security and safety procedures when using the road	Frequency % 9 2.7	98 29.8	68 20.7	137 41.6	17 5.2	3.17	Neutral	7
12	Develop the ability to control reactions and attitudes towards changes and emergencies	Frequency % 18 5.5	89 27.1	50 15.2	172 52.3	0 0	3.14	Neutral	8
8	Practice proper healthy habits in eating, drinking, sleeping, and sports	Frequency % 0 0	50 15.2	217 66	62 18.8	0 0	3.04	Neutral	9
1	Understand the basic rules of procedures for safety from household hazards and accidents	Frequency % 27 8.2	54 16.4	152 46.2	79 24	17 5.2	3.02	Neutral	10
9	Knowing and avoiding habits, practices, and foods that are harmful to the body and mind	Frequency % 0 0	78 23.7	185 56.2	66 20.1	0 0	2.96	Neutral	11
10	Knowing and avoiding habits, practices, and foods that are harmful to the body and mind	Frequency % 0 0	103 31.3	143 43.5	83 25.2	0 0	2.94	Neutral	12
	Overall average						3.17	Neutral	

* Arithmetic mean from (5.00).

TABLE 9: The study participants' responses to items of the "reality of middle school (intermediate) students regarding putting the skills of the self-leadership into practice" are arranged in descending order according to the arithmetic mean.

#	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Standard deviation	Degree of agreement	Rank
1	Apply leadership skills in real-world contexts	Frequency 25 %	64 19.5	25 7.6	172 52.3	43 13.1	3.44	1.165	Agree
2	Knowing how to carry out duties and responsibilities in a balanced and correct manner	Frequency 25 %	67 20.4	25 7.6	169 51.4	43 13.1	3.42	1.171	Agree
3	Identifying strengths and capabilities and investing them for beneficial purposes	Frequency 0 %	71 21.6	92 28	166 50.5	0 0	3.29	0.799	Neutral
4	Appreciating the importance of building, growth, and self-learning and continuing to do so in achieving human excellence	Frequency 0 %	131 39.8	0 0	198 60.2	0 0	3.2	0.981	Neutral
5	Explain the concept of leadership, its requirements and practices, and how to acquire it	Frequency 18 5.5	62 18.8	99 30.1	150 45.6	0 0	3.16	0.917	Neutral
6	Define and implement specific goals	Frequency 0 %	108 32.8	74 22.5	147 44.7	0 0	3.12	0.874	Neutral
7	Belief in his abilities and his potential to achieve excellence and success	Frequency 0 %	146 44.4	25 7.6	158 48	0 0	3.04	0.962	Neutral
8	Organizing and planning work and tasks efficiently and effectively	Frequency 0 %	135 41	93 28.3	101 30.7	0 0	2.9	0.842	Neutral
9	Practicing techniques to enhance confidence and build self-affirmation	Frequency 0 %	174 52.9	25 7.6	130 39.5	0 0	2.87	0.953	Neutral
Overall average							3.16	0.794	Neutral

* Arithmetic mean from (5.00).

TABLE 10: Independent sample *t*-test for differences in the views of study sample with the difference of variable of educational qualification.

The theme of the study	Educational qualification	#	Arithmetic mean	Standard deviation	<i>t</i> -value	Degree of freedom	Significance level
Skills of using technology efficiently and effectively	Bachelor and less	275	3.4921	1.39044	-2.676	327	0.015*
	Higher studies	54	3.7395	1.40453			
Skills in information, media, and technology	Bachelor and less	275	2.9236	0.62607	-2.307	327	0.022*
	Higher studies	54	3.1481	0.78205			
Skills of health and safety	Bachelor and less	275	3.1394	0.71485	-2.891	327	0.011*
	Higher studies	54	3.3441	0.79008			
Skills of the self-leadership	Bachelor and less	275	3.1386	0.79	-2.021	327	0.038*
	Higher studies	54	3.3593	0.81678			

*Differences at the significance level ($0.05 \geq \alpha$).

TABLE 11: Results of “one-way ANOVA” analysis for differences in the views of study sample according to the variable of years of experience.

Theme	Source of variation	Sums of squares	Degree of freedom	Mean squares	<i>F</i> value	Significance level
Skills of using technology efficiently and effectively	Between groups	9.064	2	4.532	2.343	0.098
	Within groups	630.669	326	1.935		
	Total	639.733	328			
Skills in information, media, and technology	Between groups	0.814	2	0.407	0.939	0.392
	Within groups	141.272	326	0.433		
	Total	142.086	328			
Skills of health and safety	Between groups	1.979	2	0.99	1.865	0.157
	Within groups	173.014	326	0.531		
	Total	174.994	328			
Skills of the self-leadership	Between groups	2.016	2	1.008	1.603	0.203
	Within groups	205.002	326	0.629		
	Total	207.018	328			

contexts,” was the most utilized, with an average approval rating of 3.44 out of 5.00. The skill represented by item no. 8, “Knowing how to carry out duties and responsibilities in a balanced and correct manner,” came in second, with an average approval rating of 3.33 out of 5.00. These averages indicate that students exercise these skills to a significant degree. Among the self-leadership skills practiced by students, the skill represented by item no. 1, “organizing and planning works and tasks efficiently and effectively,” received the lowest average approval rating (2.90 out of 5.00), followed by the skill represented by item no. 5, “Practicing techniques to enhance confidence and build self-affirmation,” which received the lowest approval rating (2.00 out of 5.00).

4.5. Answering the Fifth Question: Are There Statistically Significant Differences in the Level of Skills of the 21st Century among Students (Female) with the Difference of Variables (Educational Qualification, Years of Experience, and Training Courses for the Skills of the 21st Century)? The researcher utilized the “independent sample *t*-test” to determine the amount of statistically significant differences in the level of 21st-century abilities among female students concerning the variable of educational qualification. The results are presented in Table 10.

Table 10 shows that there are statistically significant differences at the significance level ($0.05 \geq \alpha$) in the level of skills of the 21st century according to the difference in the variable of educational qualification in favor of the study participants (who completed their higher studies).

4.5.1. Differences According to the Variable of Years of Experience. To determine the extent of statistically significant differences between the 21st-century skill level and the variable of years of experience, the researcher employed the “one-way ANOVA” test. The findings are displayed in Table 11.

Table 11 demonstrates that there are no statistically significant differences in the opinions of the study sample regarding the level of 21st-century skills based on the variable of years of experience, as all significance level values are greater than 0.05, and the difference is not statistically significant.

4.5.2. Differences According to the Variable of Training Courses for the Skills of the 21st Century. The researcher employed the “one-way ANOVA” test to determine the amount of statistically significant differences in the level of 21st-century abilities according to the variable of training courses. The results are presented in Table 12.

TABLE 12: Results of “one-way ANOVA” analysis for differences in the views of study sample according to the variable of training courses.

Theme	Source of variation	Sums of squares	Degree of freedom	Mean squares	F value	Significance level
Skills of using technology efficiently and effectively	Between groups	115.227	3	38.409	23.799	0
	Within groups	524.506	325	1.614		
	Total	639.733	328			
Skills in information, media, and technology	Between groups	5.589	3	1.863	4.436	0
	Within groups	136.498	325	0.42		
	Total	142.086	328			
Skills of health and safety	Between groups	34.344	3	11.448	26.453	0
	Within groups	140.65	325	0.433		
	Total	174.994	328			
Skills of the self-leadership	Between groups	16.774	3	5.591	9.552	0
	Within groups	190.244	325	0.585		
	Total	207.018	328			

TABLE 13: Results of the “LSD” test for differences between the categories of the training courses.

Theme	Training sessions for the skills of the 21st century	Sample size	Mean	I did not get training	I got one training	I got two training	I got more than three training
Skills of using technology efficiently and effectively	I did not get training	85	2.9784	–	*	*	*
	I got one training	163	3.3497		–		*
	I got two training	25	4.3267			–	*
	I got more than three training	56	4.7595				–
Skills in information, media, and technology	I did not get training	85	2.6565	–	*	*	*
	I got one training	163	3.0043		–	*	*
	I got two training	25	3.148			–	*
	I got more than three training	56	3.3536				–
Skills of health and safety	I did not get training	85	2.8833	–	*	*	*
	I got one training	163	3.1438		–		*
	I got two training	25	3.5833			–	*
	I got more than three training	56	3.9039				–
Skills of the self-leadership	I did not get training	85	2.9529	–	*	*	*
	I got one training	163	3.0838		–		*
	I got two training	25	3.4244			–	*
	I got more than three training	56	3.7345				–

*Differences at significance level 0.05 and less.

Table 12 demonstrates that there are statistically significant differences in the opinions of the study sample regarding the degree of 21st-century abilities based on the variable of training courses for 21st-century skills. The researcher utilized the “LSD” test to determine the validity of the differences between each category of training courses for the skills of the 21st century; the results are as follows.

Table 13 reveals that there are statistically significant differences at the level of significance ($0.05 \geq \alpha$) between the study participants, i.e., the participants who did not receive training courses for the 21st-century skills, the participants who received one or two training, and the participants who got three or more than three training courses. The differences

were in favor of study participants who received three or more training courses for the skills of the 21st century, which is consistent with the study of ElHoteby [28], which stressed the need to work on improving the performance of science teachers of middle school (intermediate) in line with the skills of the 21st century.

This study is supported by previous research on related subjects that attained similar conclusions. Professional development, ELT methods of teaching, technological tools, curriculum, goals and objectives; students’ backgrounds; and varieties of tasks and activities all play an important role in the teaching and learning process. As Carvalho and Santos [33] pointed out, exposing learners to the 4Cs skills has an

overall impact on people's lives in terms of productivity, knowledge or awareness, independence, and global competitiveness. Communication, critical thinking, collaboration, and creativity are not new concepts. They have been with us for over a decade. Nonetheless, they are the foundation for excellent teaching and eventual student success. We are preparing our students to compete in a global society and to meet the challenges of a constantly changing workforce, which necessitates better-prepared employees. Our participants must be skilled communicators, designers, critical thinkers, and collaborators. These are the critical 4Cs that we must help our students develop for them to succeed.

Other studies corroborate this conclusion [34–36]. According to Pardede [36], EFL courses should do all possible to help students acquire and enhance their 21st-century abilities. Erdoğan [35], for example, argued that students should be provided an opportunity to uncover their innovativeness to prepare for global competitiveness in the 21st century. According to Fandiño [34], EFL classrooms should be supplied with intellectually and meaningfully engaging assignments to let students utilize their constructive talents. Additionally, Devkota et al. [37] discovered that classes should have a syllabus that corresponds to students' 21st-century demands, which indicates that conventional learning should be turned into current approaches using suitable materials, instruments, or equipment.

5. Conclusions, Limitations, and Suggestions

This study concluded that designing and implementing programs that can morally and monetarily inspire school leaders and encourage them to exercise innovative leadership. Moreover, it reduced the pressures placed on school leaders to facilitate the actualization of creative leadership practices. This study also put more emphasis on intensifying awareness initiatives regarding the significance of creative leadership in accomplishing school environment goals and enhancing school performance. More importantly, this study recommended organizing seminars, scientific conferences, training programs, and workshops on 21st-century skills in general and critical thinking and creative leadership in a way that reflects their effects on students.

Furthermore, learners in the 21st century must possess at least four competencies: methods of thinking, working methods, tools for working, and abilities for living in the world. The following are explanations of certain competencies: (1) thinking style: a method of thinking is a set of cognitive talents that students must learn to succeed in the 21st century. Creativity, critical thinking, problem-solving, decision-making, and learning are all aspects of thinking capacity; (2) working methods: the skills of how pupils must function in a global and digital environment, some of which include communication and cooperation abilities; (3) working instruments: to operate, one must possess and grasp the instruments. ICT and information literacy are required. People would struggle to advance their work if they do not have access to ICT and sources of information; (4) ability to function in the world: the

capacity to live in the 21st century, including citizenship, life and work, and individual and societal responsibilities.

Successful communication happens when the communicator's message is well comprehended by the interlocutor. Cooperation is the capacity to work together, work together, adjust to varied tasks and responsibilities; work successfully with others; put empathy aside, and respect other points of view. Critical thinking is the ability to reason, comprehend, and make complex decisions; comprehend the interdependence of systems; assemble, reveal, analyze, and solve issues. Creativity and innovation are the talents to discover, execute, and communicate new ideas to others, as well as being open to new and alternative viewpoints. A person's capacity to make new mergers is also termed as creativity [38].

The study discussed the skills of the 21st century and the reality of middle school (intermediate) students regarding putting those skills into practice. Another limitation is that this study was applied to female teachers in high school. The third limitation is that this study was conducted only in the Kingdom of Saudi Arabia, the region of Al Qassim specifically. The last limitation is that this study was implemented during the second semester of the academic year 1441/1442 AH.

Considering limitations, there are some suggestions. The researcher advises that, considering the current study, several additional studies should be done, including: "The study on the reality of middle school pupils regarding the practice of 21st-century abilities" and "Investigating the actuality of 21st-century skill application among elementary school students."

Data Availability

The data that support this study are available in the manuscript.

Conflicts of Interest

The author declares that she has no conflicts of interest.

Funding

This project was supported by the Deanship of Scientific Research at Prince Sattam Bin Abdulaziz University under the research project no. 2021/02/18923.

References

- [1] 21st Century Academic Forum, "Academic Forum in the 21st century," in *International Conference on 21st Century Education 2014*, Knowledge Village Conference Center, Dubai, UAE, November 13–15, 2014.
- [2] American Association of Colleges for Teacher Education (AACTE), *The Handbook of Technological Pedagogical Content Knowledge for Educators*, Routledge, New York, NY, 2008.
- [3] K. M. Ahmed Alqasa and J. A. Atieh Afaneh, "Active learning techniques and student satisfaction: role of classroom environment," *Eurasian Journal of Educational Research*, vol. 98, pp. 85–100, 2022.
- [4] F. S. Ali, "The conditions of Lao Hmong refugees in Thailand and the United States of America during the term (1975–1995),"

- Journal of Social Sciences and Humanities Research*, vol. 9, no. 2, pp. 1–10, 2021.
- [5] C. J. Anwar, N. Okot, I. Suhendra, S. Yolanda, R. A. F. Ginanjar, and H. Sutjipto, "Response of exchange rate to monetary policy shocks: an evidence from Indonesia," *International Journal of Economics and Finance Studies*, vol. 14, no. 1, pp. 443–446, 2022.
- [6] D. Atrizka and I. Pratama, "The influence of organizational leadership and coaches on Indonesian athletes' adversity quotient (intelligence)," *Revista de Psicología Del Deporte (Journal of Sport Psychology)*, vol. 31, no. 1, pp. 88–97, 2022.
- [7] A. A. Boni, "Keys for building and leading teams for innovation in organizations: three book reviews and author commentaries," *Journal of Commercial Biotechnology*, vol. 27, no. 2, pp. 30–44, 2022.
- [8] J. O. Fakilede, "Strategies utility business organizations use to deliver construction projects on-budget and on-schedule," *The Journal of Modern Project Management*, vol. 10, no. 1, pp. 72–91, 2022.
- [9] M. R. Fatemi, "Take a look at the issue of power of attorney in marriage," *Journal of Social Sciences and Humanities Research*, vol. 9, no. 1, pp. 108–116, 2021.
- [10] L. T. Ha, "Code mixing and loan words in the vietnamese vocabulary," *Eurasian Journal of Applied Linguistics*, vol. 8, no. 1, pp. 143–148, 2022.
- [11] L. N. Kandoli, "A model of ICT-based educational information system to improve the high schools vocational culinary art skills in Indonesia," *Educational Sciences: Theory & Practice*, vol. 22, no. 2, pp. 87–103, 2022.
- [12] I. Kapaj, A. Murrja, and A. M. Kapaj, "Factors affecting wine consumption—case of Albania," *International Journal of Economics and Finance Studies*, vol. 14, no. 1, pp. 427–442, 2022.
- [13] S. Pimonratanakan, "The causal factors that influence the organization performance of the agricultural machinery industry," *AgBioForum*, vol. 24, no. 1, pp. 72–82, 2022.
- [14] K. D. Strang and N. R. Vajjhala, "Testing risk management decision making competency of project managers in a crisis," *The Journal of Modern Project Management*, vol. 10, no. 1, pp. 52–71, 2022.
- [15] N. Trisyani, "The role of mineral content in bamboo shell meat (shell meal) and calm flour (meat meal) and formation process on the health of living-being in Indonesia," *AgBioForum*, vol. 24, no. 1, pp. 95–105, 2022.
- [16] K. Uni, "Benefits of Arabic vocabulary for teaching Malay to Persian-speaking university students," *Eurasian Journal of Applied Linguistics*, vol. 8, no. 1, pp. 133–142, 2022.
- [17] L. Van Loi, "The impact of moral education and psychology in ancestor worship belief in Vietnam: mediating role of individual beliefs," *Eurasian Journal of Educational Research*, no. 98, pp. 101–115, 2022.
- [18] B. Trilling and C. Fadel, *21st Century Skills: Learning for Life in Our Times*, Jossey-Bass/Wiley, San Francisco, 2009.
- [19] A. Walker and T. Kettler, "Developing critical thinking skills in high ability adolescents: effects of a debate and argument analysis curriculum," *Talent*, vol. 10, no. 1, pp. 21–39, 2020.
- [20] P. Wattanavit and P. Kitcharoen, "The strategic model for enhancing internationalization of graduate programs: evidence of public universities in Thailand," *Educational Sciences: Theory & Practice*, vol. 22, no. 2, pp. 104–117, 2022.
- [21] I. Manzur, "Mojam Lisan Al Arab in the Language," 1995.
- [22] S. Hasan, "Developing the mathematics curriculum for the sixth grade (primary) in the light of 21st century skills," *Journal of the College of Education in Port Said*, vol. 18, pp. 297–345, 2015.
- [23] T. Palmer, *15 Characteristics of a 21st-Century Teacher*, Edutopia, 2015.
- [24] H. A. S. Zahran, *Childhood and Adolescence Developmental Psychology*, Dar Al-Kutub, Cairo, 6th edition, 2005.
- [25] R. A. H. Ghandoura, "The training needs necessary to develop the skills of the twenty-first century among female social studies teachers from their point of view in the secondary stage in the Kingdom of Saudi Arabia," *Journal of Arts, Literature, Humanities and Sociology*, vol. 31, 2018.
- [26] M. Claro, D. D. Preiss, E. S. Martín et al., "Assesment of 21st century ICT skills in Chile: test design and results from high school level students," *Computers & Education*, vol. 59, no. 3, pp. 1042–1053, 2012.
- [27] N. B. H. Sobhi, "The extent to which the skills of the twenty-first century are included in the developed science curriculum for the first intermediate grade in the Kingdom of Saudi Arabia," *Journal of Educational Sciences, Prince Sattam bin Abdulaziz University*, vol. 1, p. 89, 2016.
- [28] D. ElHoteby, "Evaluation of teaching performance science teachers in the middle stage on the light of 21st century skills," *International Journal of Research in Educational Sciences*, vol. 1, no. 4, pp. 261–292, 2018.
- [29] A. B. S. Al-Juhani, "Evaluating the performance of science teachers in the intermediate stage in the light of the skills of the 21st century," *Arab Studies in Education and Psychology*, vol. 116, pp. 23–50, 2019.
- [30] B. M. S. A. Al-Shahrani and M. M. Z. A. Al Mahfouz, "Evaluating the content of science curricula in the middle stage in the light of 21st century skills," *The Educational Journal of the Faculty of Education in Sohag*, vol. 72, no. 72, pp. 417–468, 2020.
- [31] R. V. Krejcie and D. W. Morgan, "Determining sample size for research activities," *Educational and Psychological Measurement*, vol. 30, no. 3, pp. 607–610, 1970.
- [32] K. Kereluik, P. Mishra, C. Fahnoe, and L. Terry, "What knowledge is of most worth: teacher knowledge for 21st century learning," *Journal of Digital Learning in Teacher Education*, vol. 29, no. 4, pp. 127–140, 2013.
- [33] A. R. Carvalho and C. Santos, "The transformative role of peer learning projects in 21st century schools—achievements from five portuguese educational institutions," *Educational Sciences*, vol. 11, no. 5, p. 196, 2021.
- [34] Y. J. Fandiño, "21st century skills and the English foreign language classroom: a call for more awareness in Colombia," *GIST Education and Learning Research Journalist*, no. 7, pp. 190–208, 2013.
- [35] V. Erdoğan, "Integrating 4C skills of 21st century into 4 language skills in EFL classes," *International Journal of Education and Research*, vol. 7, no. 11, pp. 113–124, 2019.
- [36] P. Pardede, "Integrating the 4Cs into EFL integrated skills learning," *Journal of English Teaching*, vol. 6, no. 1, pp. 71–85, 2020.
- [37] S. P. Devkota, D. R. Giri, and S. Bagale, "Developing 21st century skills through project-based learning in EFL context: challenges and opportunities," *The Online Journal of New Horizons in Education*, vol. 7, no. 1, pp. 47–52, 2017.
- [38] J. Yang and Y. Qin, "Influence of work pressure and psychological distance on innovation behavior of employees in the sports industry," *Revista de Psicología del Deporte (Journal of Sport Psychology)*, vol. 31, no. 1, pp. 79–87, 2022.