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# Faculty Members' Practice of 21st Century Skills in Teaching: A Perspective from Bisha University

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**Abstract:** This study aims to identify the teaching practices of faculty staff members at the University of Bisha in light of twenty-first century skills. The descriptive method is used as it suits the research aims. The faculty staff members demonstrate a high level of teaching practices in light of twenty-first century skills, with life and occupation skills ranking first, learning and creativity skills ranking second, and digital culture skills ranking third. The results show statistically significant dissimilarities in learning and creativity skills and life and occupation skills between the teaching practices of faculty staff members in favor of the Faculty of Engineering, while the difference in digital culture skills favors the Faculty of Education. Additionally, there is a statistically significant difference in the teaching practices of faculty staff members in the light of twenty-first century skills attributable to the variable of teaching experience, favoring the category of (5-10 years).

**Keywords:** Teaching practices, twenty-first century skills, faculty members.

## 1 Introduction

The twenty-first century has seen significant changes in knowledge, technology, and media. This ongoing rapid transformation has created a much different world than it was two decades ago. Education has also seen extraordinary advancements in recent years, resulting in numerous initiatives and changes to the way pupils are educated. To provide educators with the necessary abilities and requirements of the 21st century, a strategy for creating and implementing certain skills was developed. This strategy places a strong emphasis on developing fundamental abilities, making the concept of developing 21st century skills essential to successfully meet enormous demands.

The concept of 21st century skills emerged in the United States in 2007 as a means of improving educational performance and preparing people for the demands of the 21st century workplace. The implementation of these skills has resulted in a significant shift in educational objectives, leading to the development and implementation of several curriculum planning plans and projects to address these skills in the learning and teaching process [1].

Interest in 21st century skills is a recent trend. The call for these skills in all disciplines began through the Partnership for the 21st Century Skills, which seeks to provide professional development programs for teachers within the framework of these skills. The proposal by the Partnership for the 21st Century Skills is the most extensive, organized, and applicable framework among the frameworks that dealt with the classification of the twenty-first century skills [2]. Therefore, the Ministry of Education in the Kingdom of Saudi Arabia has made efforts, within the framework of the 2030 Vision, to achieve qualitative and distinguished learning aimed at enriching teachers with the necessary skills and employing the applied frameworks for the 21st century skills within the educational system [3]. The authors of [4] stated that adopting these skills in teacher development programs leads to students becoming innovators with high efficiency to participate effectively in civic life.

## 2 Reviewing Literature and Related Studies

Emerged from studies that examined twenty-first century skills such as the study [5] investigated the impact of 3D computer design education on secondary school students' development of twenty-first century skills. It found that 3D computer design education positively affected students' technological knowledge, design, mathematics, geometry, cooperation, innovation, and problem-solving skills. This study suggests that incorporating technology into the

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classroom can help develop important skills in students. The study [6] explored the educational reforms needed to promote twenty-first century skills. It focused on the instructional strategies modeled during courses and the resources used in the teaching process. The study found that teachers who participated in the program for three years demonstrated improved teaching strategies and access to teaching resources. This study highlights the importance of professional development for teachers to enhance their pedagogical skills and improve student learning outcomes. The study [7] examined the degree to which Jordanian universities' teaching staff represent twenty-first century skills. It found that the teaching staff's practices regarding effective communication skills ranked highest, while creative thinking skills ranked the lowest. This study suggests that Jordanian universities should focus on developing creative thinking skills among their teaching staff to better prepare students for the demands of the twenty-first century workforce.

In [8], the authors highlighted the successful implementation of national and local level curricula and a teacher education program to develop 21st century learning capabilities in the Finnish education system, which resulted in progress in fulfilling these capabilities in schools. [9] examined how to enhance students' potential by studying the relevance of personality strengths to 21st century schools and discussing various techniques to adopt them. The study explored techniques that impact both students (e.g., curriculum, relationships) and teachers (e.g., traineeship, superintendents). [10] investigated student-teachers' expectations of religious education in Finland in the light of 21st century skills. The study found that these expectations were limited to the tasks typically associated with this profession and did not fully encompass the 21st century skills. In [11], the authors examined the challenges and pedagogy of 21st century schooling from the perspective of Israeli teachers, including the importance of ICT and hindrances to change. The study revealed that teachers aimed to develop 21st century skills alongside promoting student welfare, but the Ministry of Education was perceived as an obstacle to change due to its rigid curriculum and focus on achieving specific outcomes.

Upon reviewing the relevant literature, it became clear that the current study is novel in its contribution to the ongoing trend of investigating instructors' utilization of 21st century skills. Specifically, this research addresses three crucial components of 21st century skills that are highly intertwined with learning: learning and creativity skills, digital culture skills, and life and career skills. While other studies have explored different aspects of 21st century skills, this study provides a unique perspective on these three essential components. Moreover, this research investigates a significant area that has not been adequately researched in the context of Saudi higher education.

## 3 Problem Statement

The 21st century presents a multitude of challenges and developments, necessitating teachers to keep up with these continuous changes and improve their performance to meet the evolving needs of education. The teacher is considered one of the most important inputs and a driving force for any school reform. Moreover, global movements call for the adoption of a modern view of learning that aligns with the 21st century [12]. Previous studies highlighted the importance of including 21st century skills in school curricula and enabling both teachers and learners to acquire them functionally. However, studies such as [13], [14], [15], and [16] showed that weak outputs of the educational process are due to a lack of interest in developing these skills in various educational programs. In addition, the researchers observed a shortage of focus on these skills and their development among students, with cognitive aspects receiving the most attention in teaching.

Considering the scarcity of studies that evaluate teaching practices in the light of the 21st century skills among faculty members, especially at the University of Bisha, the researchers felt the need to assess faculty members' readiness by asking if they possess the necessary skills and are familiar with the requirements of the 21st Century skills. This prompted them to conduct this study with the aim of providing recommendations and proposals for developing and improving this level to prepare efficient outputs that meet the various requirements and needs of society.

## 4 Research Questions

The study sought to give answers to the following questions:

- Which teaching practices level do the faculty staff members at the University of Bisha reach in the light of the twenty-first century skills?
- In the light of the twenty-first century skills, are there statistically significant differences between the levels of teaching practices of faculty staff members at the University of Bisha attributable to the two variables (college type - teaching experience)?

## 5 Significance of the Study:

The significance of the study is represented in several ways. Firstly, it provides a list of the twenty-first century skills that faculty staff members should benefit from in their teaching practices. Secondly, there is a lack of studies that have dealt with determining the level of teaching practices for faculty members in the light of the twenty-first century skills. Thus, there is a need for such studies in order to evaluate and develop the educational process. Finally, the study aims to diagnose strengths and weaknesses in teaching performance at the University of Bisha, which contributes to determining the starting points in developing their teaching performance.

## 6 Research Objectives

The current study aims to determine the twenty-first century skills that should be available in the teaching practices of the faculty staff members at the University of Bisha, it also aims to determine the level of the teaching practices of the faculty members of the University of Bisha in the light of the twenty-first century skills, and reveal the differences - if any - between the levels of the teaching practices of the staff members in the light of the skills of the twenty-first century according to the variables of the study.

## 7 Limitations of the Study:

The study was limited to 206 faculty members, who represent 18.4% of the total number of staff members at the University of Bisha. It also used the electronic questionnaire only as a data collection tool to assess reality.

## 8 Terminology of study

Several terms were employed in this study, which can be defined as the following:

**21st -century skills**: t is a broad set of knowledge, skills, work habits, and character traits that are believed by educators, school reformers, college professors, employers, and others to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplace [17].

It is defined in this study as the grade given to faculty members' responses to the items or domains utilized in the questionnaire.

**Faculty Members**: A group or group of people, especially lecturers, teachers and professors who have common obligations, that is, to teach in a certain school or educational institution. In other words, they are academic staff of a school or university. For this study, it is defined as all instructors who teach at the University of Bisha.

## 9 Methodology

This study used the descriptive method, modeling a questionnaire for the purpose of collecting data.

*Participants*

All 1120 faculty staff members at the University of Bisha constitute the present study population. The study was applied to a simple random sample of 206 faculty staff members, representing 18.4% of the study community, Following below here Table (1):

**Table 1:** Allocation of the study sample

| The Variable | Levels | Number | Percentage |
|---|---|---|---|
| Type of college | Applied College | 10 | 4.9 |
| | Faculty of Arts | 20 | 9.7 |
| | Faculty of Business | 23 | 11.2 |
| | Faculty of Domestic Economy | 17 | 8.3 |
| | Faculty of Education | 51 | 24.8 |
| | Faculty of Computers and Information Technology | 11 | 5.3 |
| | Faculty of Medicine | 9 | 4.4 |
| | Faculty of Science | 25 | 12.1 |
| | Faculty of Applied Medical Sciences | 11 | 5.3 |
| | Faculty of Engineering | 29 | 14.1 |
| Years of service | Less than 5 years | 65 | 31.6 |

| | | | |
|---|---|---|---|
| | 5-10 years | 81 | 39.3 |
| | More than 10 years | 60 | 29.1 |
| Sample total | | 206 | 100 |

*Data collection instrument*

After reviewing a number of educational literature and other preceding studies relevant to the subject of the present study, including [5], [6], [7], [9], and [18], the researchers designed a questionnaire. The following represents it, and the procedures that the researchers followed to confirm its validity and accuracy:

1- The first section: It introduces the objectives of the study, the type of information that the researchers would like to collect from the members of the study sample, along with a guarantee of confidentiality of the information provided.

2- The second section: It contains the demographic data of the study sample, which is as follows: (type of college - years of service).

3- The third section: This section consists of 40 statements, distributed on three cores, each core is divided into two main dimensions. Table (2) shows the number of the questionnaire's statements, and how they are allocated on the axes and dimensions.

**Table 2:** Questionnaire of teaching practices in the light of the twenty-first century skills

| Axis | Dimension | Number of statements | Total |
|---|---|---|---|
| learning and creativity skills | Critical thinking and problem solving | 7 | 14 |
| | Innovation and creativity | 7 | |
| digital culture skills | The culture of computing and information and communication technology | 6 | 13 |
| | The culture of communication, information and media | 7 | |
| life and occupation skills | Initiative and self-direction | 6 | 13 |
| | Social interaction and multicultural interaction | 7 | |
| Questionnaire | | | 40 statements |

Validity of the study tool:

A- Apparent authenticity of the study tool:

It was presented in its initial form to eight reviewer- specialists in the field of curricula and teaching methods. They were asked to evaluate the quality of the questionnaire. Then, necessary modifications were made by the reviewers whom the majority of them agreed upon and produced the final form of the questionnaire.

B- The validity of the internal matchmaking of the tool:

A survey sample, consisting of 30 faculty staff members at the University of Bisha, was chosen, all of whom were from outside the main study sample. was calculated as shown in Table (3)

**Table 3:** Correlation coefficients for the questionnaire statements with the total score of the questionnaire

| Axis | Dimension | Statement number | Correlation Coefficient | Statement number | Correlation Coefficient |
|---|---|---|---|---|---|
| learning and creativity skills | Critical thinking and problem solving | 1 | **0.651 | 5 | **0.832 |
| | | 2 | **0.503 | 6 | **0.841 |
| | | 3 | **0.693 | 7 | **0.823 |
| | | 4 | **0.604 | - | - |
| | Innovation and creativity | 1 | **0.499 | 5 | **0.649 |
| | | 2 | **0.591 | 6 | **0.603 |
| | | 3 | **0.563 | 7 | **0.587 |
| | | 4 | **0.548 | - | - |
| digital culture skills | The culture of computing and information and communication technology | 1 | **0.571 | 4 | **0.652 |
| | | 2 | **0.754 | 5 | **0.712 |
| | | 3 | **0.562 | 6 | **0.498 |
| | The culture of communication, information and media | 1 | **0.600 | 5 | **0.769 |
| | | 2 | **0.534 | 6 | **0.646 |
| | | 3 | **0.785 | 7 | **0.811 |

| | | | | | |
|---|---|---|---|---|---|
| | | 4 | **0.695 | - | - |
| life and occupation skills | Initiative and self-direction | 1 | **0.679 | 4 | **0.678 |
| | | 2 | **0.573 | 5 | **0.576 |
| | | 3 | **0.754 | 6 | **0.824 |
| | Social interaction and multicultural interaction | 1 | **0.487 | 5 | **0.716 |
| | | 2 | **0.751 | 6 | **0.551 |
| | | 3 | **0.67 | 7 | **0.753 |
| | | 4 | **0.653 | - | - |

** Significant at the significance level of 0.01 or less.

Table (3) shows this refers to the soundness of the internal consistency among the questionnaire statements, and the questionnaire's appropriateness to perform what it was designed to measure.

The reliability of the study tool: The reliability of the study tool was confirmed through the use of the split-half method, and Cronbach's Alpha (α).

**Table 4:** Cronbach's alpha coefficient to measure the reliability of the study tool

| Axis | Split-half | Alpha Coefficient |
|---|---|---|
| Learning and creativity skills | 0.879 | 0.860 |
| Digital culture skills | 0.826 | 0.833 |
| Life and occupation skills | 0.889 | 0.815 |
| General reliability | 0.886 | 0.864 |

Table (4) indicates that the questionnaire has a high degree of reliability that can be relied upon in the field application of the study, and the reliability coefficient is high in each dimension of the questionnaire.

## 10 Results:

- To answer the first question: What is the level of the teaching practices of the faculty staff members at the University of Bisha in the light of twenty-first century skills?

The arithmetic mean, standard deviation and ranks of these axes were calculated to determine the level of the teaching practices of faculty staff members in the light of the twenty-first century skills. Table (5) shows the general results to this question.

**Table 5:** Responses of the study sample to the questionnaire of teaching practices of faculty staff members at the University of Bisha in the light of twenty-first century skills

| | Axes | Arithmetic mean | | Standard deviation | Rank |
|---|---|---|---|---|---|
| | | Mean value | Level | | |
| 1 | Learning and creativity skills | 2.36 | High | 0.442 | 2 |
| 2 | Digital culture skills | 2.32 | Average | 0.456 | 3 |
| 3 | Life and occupation skills | 2.37 | High | 0.467 | 1 |
| Overall score | | 2.35 | High | 0.427 | - |

Table (6) shows that the level of teaching practices of the faculty staff members in the light of the skills of the twenty-first century was at an arithmetic mean of 2.35, that is, a high score. The results revealed that life and occupational skills ranked first with an arithmetic mean of 2.37, learning and creativity skills ranked second with an arithmetic mean of 2.36, followed by digital culture skills with an arithmetic mean of 2.32, which is considered an average level. Following hereby are the detailed results:

First: Learning and Creativity Skills:

**Table 6:** The arithmetic means and standard deviations of the teaching practices of faculty members in the light of learning and creativity skills

| No. | Statements | Arithmetic mean | Performance level | Standard deviation | Rank |
|---|---|---|---|---|---|
| Critical thinking and problem solving | | | | | |
| 1 | I motivate students to gather information and ideas from a variety of sources | 2.53 | High | 0.66 | 1 |
| 2 | I encourage students to verify information and rate its | 2.36 | High | 0.782 | 4 |

| | | | | | |
|---|---|---|---|---|---|
| | accuracy | | | | |
| 3 | I direct students to reflect and make logical judgments. | 2.39 | High | 0.762 | 3 |
| 4 | I encourage students to express their opinions and views on a particular idea | 2.43 | High | 0.721 | 2 |
| 5 | I give students a chance to judge the different answers | 2.27 | Average | 0.817 | 7 |
| 6 | I direct students to apply facts, evidence, and arguments to new situations. | 2.3 | Average | 0.757 | 6 |
| 7 | I motivate students to observe while introducing new knowledge. | 2.33 | Average | 0.771 | 5 |
| Dimension overall score | | 2.37 | High | 0.482 | - |
| Innovation and creativity | | | | | |
| 1 | I encourage students to generate various alternatives and ideas to solve a specific problem. | 2.37 | High | 0.746 | 3 |
| 2 | I ask students open-ended, non-routine questions. | 2.37 | Average | 0.748 | 7 |
| 3 | I urge students to think flexibly and take advantage of the diversity of information | 2.39 | High | 0.768 | 2 |
| 4 | I use different teaching strategies to generate ideas (e.g. brainstorming, scamper) | 2.33 | Average | 0.744 | 4 |
| 5 | I motivate students to elaborate on the idea and support it with additional information. | 2.3 | Average | 0.776 | 6 |
| 6 | I encourage the students to organize information according to new ideas. | 2.31 | Average | 0.777 | 5 |
| 7 | I motivate students to observe while introducing new knowledge. | 2.45 | High | 0.715 | 1 |
| Dimension overall score | | 2.34 | High | 0.459 | - |
| Overall mean value of the teaching performance for the dimension of learning and creativity skills | | 2.36 | High | 0.442 | - |

Table (6) shows the arithmetic mean of the level of teaching practices for "critical thinking and problem-solving skills" was 2.37, indicating a high level of performance. The arithmetic mean of the level of teaching practices for "innovation and creativity skills" was 2.34, showing a high level of performance.

Second: Digital Culture Skills:

**Table 7:** Arithmetic means and standard deviations of teaching practices of faculty staff members in the light of digital culture skills

| No. | Statements | Arithmetic mean | Level | Standard deviation | Rank |
|---|---|---|---|---|---|
| Culture of computing and information and communication technology | | | | | |
| 1 | I direct students to make judgments about the quality of information sources | 2.39 | High | 0.688 | 2 |
| 2 | I motivate students to search for and collect information from reliable information sources | 2.28 | Average | 0.818 | 6 |
| 3 | I encourage students to use digital technologies and technological innovations to achieve course outcomes. | 2.28 | Average | 0.812 | 5 |
| 4 | I reinforce students' positive attitudes towards technology. | 2.43 | High | 0.728 | 1 |
| 5 | I employ blended education by combining direct and distance education in a manner appropriate to course topics. | 2.36 | High | 0.783 | 3 |
| 6 | I direct students to follow ethical conduct rules when using technology. | 2.34 | High | 0.778 | 4 |
| Dimension overall score | | 2.35 | High | 0.504 | - |
| Culture of communication, information, and media | | | | | |
| 1 | I encourage students to speak up and express their opinions | 2.44 | High | 0.755 | 1 |
| 2 | I give students an opportunity to express their | 2.22 | Average | 0.789 | 6 |

| | | | | | |
|---|---|---|---|---|---|
| | ideas and opinions in writing. | | | | |
| 3 | I direct students to evaluate information critically. | 2.23 | Average | 0.797 | 5 |
| 4 | I encourage students to access information efficiently and effectively | 2.41 | High | 0.719 | 2 |
| 5 | I motivate students to use information accurately | 2.34 | High | 0.766 | 3 |
| 6 | I urge students to use multiple media and technologies | 2.28 | Average | 0.764 | 4 |
| 7 | I motivate students to benefit from what is published in the media. | 2.16 | Average | 0.732 | 7 |
| Dimension overall score | | 2.30 | Average | 0.478 | - |
| Overall average of teaching performance on the dimension of digital culture skills | | 2.32 | Average | 0.456 | - |

Table (7) shows that the arithmetic mean of the level of teaching practices for "culture of computing and information and communication technology skills" was 3.35, showing a high-performance level. The arithmetic mean of the level of teaching practices for "Culture of Communication, Information and Media" was 2.30, with an average level of performance.

Third: Life and occupational Skills:

**Table 8:** Arithmetic means and standard deviations of the teaching practices of faculty staff members in the light of life and occupational skills

| No. | Statements | Arithmetic mean | Level | Standard deviation | Rank |
|---|---|---|---|---|---|
| Initiative and self-direction | | | | | |
| 1 | I encourage students to take responsibility for results when performing tasks. | 2.58 | High | 0.625 | 1 |
| 2 | I use teaching strategies that help students in self-learning. | 2.34 | High | 0.778 | 4 |
| 3 | I encourage students to ask question themselves | 2.30 | | 0.811 | 6 |
| 4 | I motivate students to prioritize and arrange tasks. | 2.37 | High | 0.739 | 2 |
| 5 | I encourage students to correct their mistakes and monitor their learning | 2.32 | Average | 0.81 | 5 |
| 6 | I motivate students to learn continuously and sustainably. | 2.37 | High | 0.785 | 3 |
| Dimension overall score | | 2.38 | High | 0.507 | - |
| Social interaction and multicultural interaction | | | | | |
| 1 | I use activities and projects that require collaborative work. | 2.39 | High | 0.702 | 2 |
| 2 | I encourage students to work in groups with different abilities and inclinations to learn and work together. | 2.31 | Average | 0.784 | 6 |
| 3 | I motivate students to work collaboratively and exchange ideas | 2.30 | Average | 0.799 | 7 |
| 4 | I reinforce students' positivity towards cooperative learning | 2.38 | High | 0.755 | 3 |
| 5 | I encourage the students to accept different points of view when doing their tasks together | 2.41 | High | 0.739 | 1 |
| 6 | I develop n students' skills of interacting with people of different cultures | 2.33 | Average | 0.771 | 5 |
| 7 | I explain what distinguishes the cultures of different countries. | 2.33 | Average | 0.711 | 4 |
| Dimension overall score | | 2.35 | High | 0.494 | - |
| Overall average of teaching performance on the dimension of life and occupation skills | | 2.37 | High | 0.467 | |

Table (10) shows that the arithmetic mean of the level of teaching practices for "initiative and self-direction skills" was 2.38, indicating a high level of performance. The arithmetic mean of the level of teaching practices on "Skills of Social Interaction and Multicultural Interaction" was 2.35, with a high level of performance.

To answer the second question: According to level of significance of ($0.05 \geq \alpha$), are there statistically important differences among the levels of teaching practices of the faculty staff members at the University of Bisha in the light of the twenty-first century skills that can designate the two variables of (college type - teaching experience)?

First: Regarding the type of college:

The researchers conducted (Shapiro-Wilk test) in quite small numbers concerning the variable of the type of college. The condition of data normality in the category of (Faculty of Education) could be bypassed because the sample size was quite large. The distribution of the data was not normal with regard to the total score and the sub-axes. The Kruskal Wallis Test was applied for two or more to compare the average ranks of the sample scores in the teaching practices of the faculty staff members at the University of Bisha in the light of the twenty-first century skills attributable to the variable of the type of college, and the results were as shown in the following Table (9):

**Table 9:** Kruskal Wallis Test to reveal the significance of differences in the teaching practices of the faculty staff members at the University of Bisha attributable to the variable of college type

| | College | Number | Average ranks | Calculated (Chi-squared) value | Probable value (.Sig) | Statistical significance |
|---|---|---|---|---|---|---|
| Learning and creativity skills | Applied College | 10 | 82.00 | 42.258 | 0.000 | Statistically significant |
| | Faculty of Arts | 20 | 105.35 | | | |
| | Faculty of Business | 23 | 80.93 | | | |
| | Faculty of Domestic Economy | 17 | 123.74 | | | |
| | Faculty of Education | 51 | 128.95 | | | |
| | Faculty of Computers and Information Technology | 11 | 52.14 | | | |
| | Faculty of Medicine | 9 | 60.67 | | | |
| | Faculty of Science | 25 | 82.58 | | | |
| | Faculty of Applied Medical Sciences | 11 | 72.59 | | | |
| | Faculty of Engineering | 29 | 133.45 | | | |
| Digital culture skills | Applied College | 10 | 72.25 | 47.436 | 0.000 | Statistically significant |
| | Faculty of Arts | 20 | 101.73 | | | |
| | Faculty of Business | 23 | 57.15 | | | |
| | Faculty of Domestic Economy | 17 | 119.00 | | | |
| | Faculty of Education | 51 | 135.62 | | | |
| | Faculty of Computers and Information Technology | 11 | 64.86 | | | |
| | Faculty of Medicine | 9 | 72.28 | | | |
| | Faculty of Science | 25 | 96.48 | | | |
| | Faculty of Applied Medical Sciences | 11 | 75.86 | | | |
| | Faculty of Engineering | 29 | 127.57 | | | |
| Life and occupation skills | Applied College | 10 | 90.45 | 47.020 | 0.000 | Statistically significant |
| | Faculty of Arts | 20 | 81.93 | | | |
| | Faculty of Business | 23 | 72.26 | | | |
| | Faculty of Domestic Economy | 17 | 135.44 | | | |
| | Faculty of Education | 51 | 127.50 | | | |
| | Faculty of Computers and Information Technology | 11 | 42.41 | | | |
| | Faculty of Medicine | 9 | 78.33 | | | |
| | Faculty of Science | 25 | 90.46 | | | |
| | Faculty of Applied Medical Sciences | 11 | 84.68 | | | |
| | Faculty of Engineering | 29 | 136.09 | | | |
| Overall score | Applied College | 10 | 79.85 | 48.723 | 0.000 | Statistically significant |
| | Faculty of Arts | 20 | 96.90 | | | |
| | Faculty of Business | 23 | 69.00 | | | |
| | Faculty of Domestic Economy | 17 | 126.65 | | | |
| | Faculty of Education | 51 | 132.63 | | | |
| | Faculty of Computers and Information Technology | 11 | 47.50 | | | |
| | Faculty of Medicine | 9 | 67.72 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Faculty of Science | 25 | 87.56 | | | |
| | Faculty of Applied Medical Sciences | 11 | 78.59 | | | |
| | Faculty of Engineering | 29 | 134.31 | | | |

Table (9) shows It was found that the differences in (learning and creativity skills, and life and occupational skills) were in favor of the College of Engineering, while the differences in (digital culture skills) were in favor of the College of Education, which got the highest average rank among the rest of the colleges in this skill.

Second: Regarding the teaching experience:

The One-Way ANOVA Test was used for two or more independent samples in order to compare the mean scores of the sample in the teaching practices of the faculty staff members in the light of the twenty-first century.

**Table 10:** One Way ANOVA Test to reveal the significance of differences in the teaching practices of the faculty staff members at the University of Bisha attributable to the teaching experience variable

| | | Sum square | Degree of freedom | Mean square | Calculated F value | Probable (Sig) value | Statistical significance |
|---|---|---|---|---|---|---|---|
| Learning and creativity skills | Inter-groups | 2.433 | 2 | 1.216 | 6.576 | .002 | Statistically significant |
| | Intra-groups | 37.551 | 203 | .185 | | | |
| | Total | 39.983 | 205 | | | | |
| Digital culture skills | Inter-groups | 3.306 | 2 | 1.653 | 8.531 | .000 | Statistically significant |
| | Intra-groups | 39.339 | 203 | .194 | | | |
| | Total | 42.645 | 205 | | | | |
| Life and occupation skills | Inter-groups | 2.434 | 2 | 1.217 | 5.847 | .003 | Statistically significant |
| | Intra-groups | 42.243 | 203 | .208 | | | |
| | Total | 44.676 | 205 | | | | |
| Overall score | Inter-groups | 2.698 | 2 | 1.349 | 7.889 | .001 | Statistically significant |
| | Intra-groups | 34.719 | 203 | .171 | | | |
| | Total | 37.418 | 205 | | | | |

The results of table (10) referring to statistically significant differences at the level of (0.01), due to the teaching experience variable in the teaching practices of the faculty staff members at the University of Bisha in the light of the twenty-first century skills. To determine the direction of differences in favor of any category, the researchers used the Dunnett T3 test of two-dimensional comparisons.

**Table 11:** Dunnett T3 test to show the significance of differences in the categories of the teaching experience variable

| | Teaching experience (A) | Teaching experience (B) | Difference means (A – B) | Probable (Sig) value | Statistical significance |
|---|---|---|---|---|---|
| Learning and creativity skills | Less than 5 years | 5-10 years | -.21639* | .007 | Significant |
| | | More than 10 years | .03674 | .933 | Insignificant |
| | 5-10 years | Less than 5 years | .21639* | .007 | Significant |
| | | More than 10 years | .25313* | .004 | Significant |
| | Above ten years old | Under five years old | -.03674 | .933 | Insignificant |
| | | 5-10 years | -.25313* | .004 | Significant |
| Digital culture skills | Less than 5 years | 5-10 years | -.26706* | .001 | Significant |
| | | More than 10 years | .02012 | .989 | Insignificant |
| | 5-10 years | Less than 5 years | .26706* | .001 | Significant |
| | | More than 10 years | .28718* | .001 | Significant |
| | Above ten years old | Under five years old | -.02012 | .989 | Insignificant |
| | | 5-10 years | -.28718* | .001 | Significant |
| Life and occupational skills | Less than 5 years | 5-10 years | -.23037* | .010 | Significant |
| | | More than 10 years | .01521 | .996 | Insignificant |
| | 5-10 years | Less than 5 years | .23037* | .010 | Significant |
| | | More than 10 years | .24558* | .007 | Significant |
| | Above ten years old | Under five years old | -.01521 | .996 | Insignificant |
| | | 5-10 years | -.24558* | .007 | Significant |
| | Less than 5 years | 5-10 years | -.23740* | .002 | Significant |
| | | More than 10 years | .02434 | .977 | Insignificant |

| | | | | | |
|---|---|---|---|---|---|
| Overall score of 21st century skills | 5-10 years | Less than 5 years | .23740* | .002 | Significant |
| | | More than 10 years | .26174* | .002 | Significant |
| | Above ten years old | Under five years old | -.02434 | .977 | Insignificant |
| | | 5-10 years | -.26174* | .002 | Significant |

The results shown in Table (11) indicate that there are statistically significant differences at the level of (0.01) in the teaching practices of the faculty staff members at the University of Bisha in the light of the twenty-first century skills attributable to the teaching experience variable between the category (aging 5-10) compared to the two categories (Under 5 years old, and above 10 years).

## 11 Discussion

The results of the study reveal that the level of the teaching practices of the faculty staff members at the University of Bisha in the light of the skills of the twenty-first century was high, as the overall average of performance was (2.35). This may be attributed to the scientific mobility within the University, the variety of the professional development programs that are held on an ongoing basis for all teaching staff members, in addition to the university's aspirations to have higher ranks in the various classifications.

The level of practices in the light of the skills of the twenty-first century was as follows: life and occupational skills had a high level of performance and learning, and creativity skills had a high level of performance, while the level of teaching practices in the light of digital culture skills was average. This order is attributable to the faculty staff members' realization of the importance of preparing individuals for future life and occupations, and their awareness of the challenges that students may face in the future, whether at the level of life or appropriate professions. The low scores of staff members' observance of the skills related to digital culture may be attributed to the different nature of different specializations, the methods of teaching them, the basic skills related to the learning outcomes of courses, and the nature and assessment methods of assignments. The study also found out that there are differences in teaching practices among the faculty staff members in terms of the type of college in favor of the College of Engineering, then the College of Education. This may be attributed to the nature of specializations and the variety of course teaching and assessment methods.

In addition, the results also revealed that the faculty staff members, whose experience ranges between (5-10) years, are considered the highest in the level of practice in the light of the twenty-first century skills. This may be due to the skills, abilities and behaviors which - academic teachers and educators need to succeed in communities and workplaces in the 21st century- are part of a growing international movement that focuses on the skills that students must acquire in order to succeed in a rapidly growing digital community. The society has also witnessed rapid changes in the economy and technology that have affected the requirements that the educational system must meet to prepare students for the labor market, as we find the staff members with more than ten years of experience have somewhat little practice of digital skills and digital culture in the educational process in general, although they are among the most important skills for the twenty-first century, in addition to the fact that these staff members use traditional methods in the educational process.

These results agree with those of the studies of [7], [5], [6], and [9]. The results showed that teaching 3D computer designing helps in lectures such as: mathematics, engineering, information technology, and modeling. Furthermore, it helps develop: positive design, communication, cooperation, innovation, and problem-solving skills, providing the faculty staff members with different opportunities to plan the teaching of educational activities that encourage critical thinking, problem-solving, scientific research, and conceptual development.

The present study differs from the study of [12] whose findings revealed that teachers' goals revolve around attending to 21st century skills and students' welfare theoretically while ICT has a compound role in teachers' pedagogy, and it is actually used sporadically, dealing with 21st century skills in a traditional way. However, ICT perceived negative cognitive, behavioral, and social effects on students.

## 12 Conclusions

Reflecting on the previous results, the researchers concluded that the faculty members are interested in developing life and occupational skills to prepare a learner who is independent and able to adapt to changes, as well as learning and creativity skills, which are the key to self-learning and lifelong learning. In contrast, digital culture skills had an average score, necessitating focusing on them so that they have more attention. Moreover, results showed that the level of teaching practices of the faculty members at the University of Bisha was high in the College of Engineering in learning and creativity skills and life and occupational skills. As for digital culture skills, they were high among the faculty members of the College of Education at the University of Bisha.

Several recommendations can be made, most notably: spreading the culture of the twenty-first century skills and their importance; and holding panel discussions and workshops on skills and how to take them into account in teaching. In addition, it is important to conduct studies on the amplitude to which university students possess the twenty-first century skills and conduct comparative studies to include many variables such as gender.

***Conflicts of Interest Statement***

*The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.*

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