

Pre-service kindergarten teachers' conceptualization and enactment of twenty-first century skills: 2030 vision

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Abstract

This research was conducted to determine to which degree pre-service kindergarten teachers practice the twenty-first century skills of learning and creativity, digital culture, and life and work with the kindergarten child in light of vision 2030. Descriptive analytical approach was employed. A representative sample of the study population was selected by stratified random method. Therefore, 250 female teachers were relied upon as selecting the study sample. An online survey was created by Google Docs. Results show that all the three skills are highly practiced by pre-service kindergarten teachers.

Keywords: Pre-service, kindergarten teachers, twenty-first century skills, conceptualization, enactment, 2030 vision

INTRODUCTION

The twenty-first century began with radical changes that posed many challenges on the human level, and these challenges were not the result of that view, but rather the result of factors and variables whose features began to appear in the second half of the last century (Demirkol-Orak& İnözü,2021).

From this logic, governments in different countries have sought to develop plans and standards in order to achieve the desired results to meet these challenges, and many global initiatives have emerged to define the learning outcomes that should be available in the building blocks of the future, which resulted in the emergence of the term 21st century skills or 21st century competencies (Guo& Woulfin,2016).

There are two important issues in teaching the skills of the twenty-first century, the first is related to the complexity of the teaching process, and the importance of creativity and reflection on it, and the second is related to teacher preparation, since education for the twenty-first century requires a teacher of the style of the twenty-first century: educated, creative, contemplative, and how else? Would he equip the students with these skills if they had not become part of his normal daily behavior and teaching? The need for teacher preparation institutions and curricula belonging to the twenty-first century has become urgent (Jacobson-Lundeberg,2016).

Sweet (2014) has shown that the skills of the twenty-first century represent a general framework for the development of education systems and educational curricula, as these skills can be integrated across core subjects independently (languages - mathematics - social sciences), while they can be included across multidisciplinary curricula. in its early stages.

With regard to the education of children in early childhood, there are some facts that are difficult to ignore, the first fact: that young children from birth to the age of 8 years learn very quickly and use their senses and their bodies in order to interact with the world and the surrounding environment, and the second fact that according to Piagetian theory that children from the age of 2-7 years is in the pre-operational stage, which is characterized by hyperactivity, movement, poor concentration, and forgetfulness of laws and regulations.

This stage requires teaching methods that focus on employing the senses and integrating children in the learning process and that depend on play, movement, activity and fun. Achieving this requires that the kindergarten teacher have a set of skills that enable her to deal with the teaching and learning processes at this stage(Lally & Valentine-French,2019)

At the level of the Kingdom of Saudi Arabia, the Kingdom's Vision 2030 focused on raising the level of individuals' performance by providing them with skills, increasing their abilities to employ and using technological techniques, confronting and overcoming their problems, giving them ample spaces for creativity and originality, developing sound attitudes towards their appreciation of the value and importance of work and enhancing their sense National professional for sincerity in performing the tasks assigned to them with high quality. (Saudi Arabia Vision 2030).

This was evident in the transformation program of the Kingdom's Vision 2030, which set several strategic goals in the field of education, the most important of which are: improving the recruitment, preparation, rehabilitation and development of teachers, improving the educational environment conducive to creativity and innovation, developing curricula and methods of teaching and assessment, and diversifying innovative funding sources. (Al-Khibri, 2020)

LITERATURE REVIEW

Twenty-first century skills: their nature and classification

Our current era is the era of knowledge and economic competition between countries, and the need for workers who have skills that enable them to work and live, to rely in communication with others on modern technologies, and to practice skills to solve problems in creative ways, and this era also requires the school to teach students the skills they need in life. And work in the twenty-first century,

so at the forefront of education goals came the need to harmonize the outputs of the educational system with the needs of the labor market, in addition to providing students with the necessary knowledge and skills (Kim & Care, 2020).

In order for the teacher to be able to face the new challenges and responsibilities that imposed themselves on the teacher, it was necessary for him to train himself, as the teacher must learn throughout his life, and train himself continuously, and for this reason some countries have turned to the concept of (lifelong learning for the teacher).

Thus, the teacher at the financial level is a producer of knowledge and constantly develops its professional practices, and that the concept causes a radical change in the traditional vision of learning and the school system and provides awareness of the importance of education and training and that they are two continuous processes (Guinn, 2012). As for the skills of the twenty-first century teacher, he/she must have the following skills (Shalaby, 2014):

1. Digital Age Literacy Skills. These are necessary skills for life and work in the knowledge society and are manifested in the ability to deal with digital technology, communication tools, networks, access to information, and its management, evaluation and production. It includes: basic culture, scientific culture, economic culture, visual and information technology, understanding of different cultures, and cosmic awareness.
2. Inventive Thinking skills. which include the ability to adapt, harmonize, manage complexity, self-direction, curiosity, inquiry, innovation, risk-taking, higher-order thinking skills and sound thinking.
3. Effective Communication Skills. These include: teamwork skills, interpersonal skills. Personal, social and civic responsibility, interactive communication.
4. High productivity skills, which include: prioritization skills, planning and management in order to achieve results, effective use of technological tools in the real world to communicate, collaborate, solve problems and get work done.

Twenty-first century skills for the kindergarten teacher in light of the Kingdom's vision 2030:

From the above it is clear that the skills of the twenty-first century are pivotal (central), as all children in the different stages of education must have access to learning opportunities and acquire these skills, and they are diverse: in the digital world, the student needs to learn how to be able to use the appropriate tools to master the skills Learning and practicing different life activities, as they are interactive.

The student needs to learn the scientific content through examples, applications and experiences from real life. The student learns better when learning is linked to meaningful relationships and interactions related to his life reality. This confirms the importance of providing these skills to teachers in different stages of education, especially kindergarten teachers.

Al-Yami (2018) indicates that education has been of great importance in the vision of the Kingdom because it represents the focus of progress and development in the thinking, capabilities and skills of Saudi youth in managing the economy in the future.

The vision came with a development plan that focuses on an integrated package of programs to develop the educational environment and keep pace with development plans, at the forefront of which is a comprehensive update of the curricula, the performance of teachers and the improvement of the school environment to stimulate development and creativity, and focus on developing teaching methods and providing all capabilities for teachers.

Enable the school to cooperate with the family and build leadership figures, create a wide range of cultural, social, sports and entertainment activities, and cooperate with the private sector and the non-profit sector in providing more innovative programs and events to enhance educational partnership, qualify teachers and educational leaders, and develop curricula.

Therefore, the researcher believes that the practice of kindergarten teachers' skills in the twenty-first century is one of the main objectives and pillars of the Kingdom's National Transformation Program in its educational aspect.

RESEARCH QUESTIONS

The present research study seeks to give answers to the following research questions:

To which degree do kindergarten teachers practice the twenty-first century skills of learning and creativity with the kindergarten child in light of the Kingdom's vision 2030?

To which degree do kindergarten teachers practice the twenty-first century skills of digital culture with kindergarten children in light of the Kingdom's vision 2030?

To which degree do kindergarten teachers practice the twenty-first century skills related to life and work with kindergarten children in light of the Kingdom's 2030 vision?

METHODOLOGY

Descriptive analytical approach that depends on the study of the phenomenon, as it exists in reality, and contributes to its accurate description and clarifies its characteristics about the way of collecting, analyzing and interpreting information was employed.

Participants

A representative sample of the study population was selected by stratified random method. Therefore, 250 female teachers were relied upon as selecting the study sample, representing (10%) of the number of government kindergarten teachers, and (236) questionnaires valid for analysis were retrieved, that is, a recovery rate of 94.4%, and the researcher believes that this number is sufficient to achieve the objectives of the study.

Data Gathering Instrument

An online survey was created by Google Docs. It is a 56 items with a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). The scale takes only 10 minutes to complete. Data were imported into Excel to facilitate SPSS analysis using 25 versions.

Validity and Reliability

The content validity of the online survey was examined by a group of four experts. They assessed the relevance of each item using a four-point Likert scale (where 1 represents "irrelevant" and 4 represents "highly relevant"). They provided suggestions and comments. The 56 items were judged to be quite or highly relevant. A content validity index was calculated at the item level (I-CVI = 0.90). Reliability analysis using Cronbach's Alpha showed that all of the four variables used in this research were reliable as shown in Table 1.

Table 1. Reliability Analysis

Variable	Cronbach's Alpha Based on Standardized Items	Remarks
Learning and creativity skills	0.756	Reliable
digital culture skills	0.843	Reliable
Life and work skills	0.856	Reliable
Total	0.883	Reliable

PROCEDURES

Prior to administering the survey, students were informed about purpose of the study and voluntarily stated that they accept to participate. To ensure that the respondents responded to the items honestly and sincerely, they were told not to identify themselves in any way on the scale paper.

They were also informed that they should not be concerned with anything concerns their participation in the study and their responses are for research purposes only and would be kept confidential. All data were entered in an SPSS file.

RESULTS

To which degree do pre-service kindergarten teachers practice the twenty-first century skills of learning and creativity with the kindergarten child in light of the Kingdom's vision 2030?

In order to answer this question, means, standard deviations, and degree were calculated for learning and creativity subscale, and Table 2. illustrates this. As shown in table 2. , the means for the whole subscale 72.05 (4.01), that is , practice the twenty-first century skills of learning and creativity with a very high degree.

While the subscales came as follows: Critical thinking and problem solving with means of 25.70 (3.671), SD=4.492, and with a degree of high. Communication and share with means of 21.22 (4.244), SD=3.123, and with a degree of very high. creativity and innovation with means of 25.14 (4.19), SD=3.829, and with a degree of very high.

Table.2.

Means, standard deviations, and degree for learning and creativity subscales

Subscales	No. Of Items	M	SD	Degree
Critical thinking and problem solving	10	25.70 (3.671)	4.492	High
Communication and share	2	21.22 (4.244)	3.123	Very high
creativity and innovation	6	25.14 (4.19)	3.829	Very high
Total	18	72.05 (4.01)	8.371	Very high

Tabular cum graphical form was also used, as shown in Figure. 1.

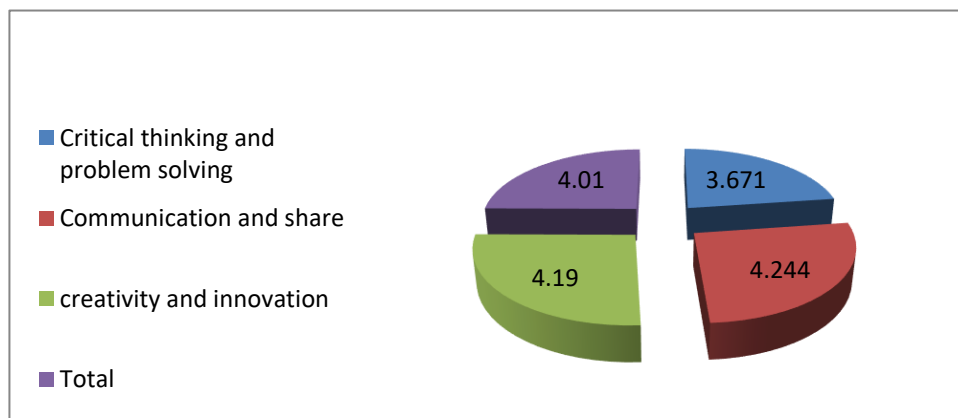


Figure 1 means of learning and creativity subscales

To which degree do pre-service kindergarten teachers practice the twenty-first century skills of digital culture with kindergarten children in light of the Kingdom's vision 2030?

In order to answer this question, means, standard deviations, and degree were calculated for digital culture subscale, and table 3. illustrates this. As shown in table 3. , the means for the whole subscale 30.78 (3.1), that is , practice the twenty-first century skills of digital culture with a high degree. While the subscales came as follows: Information culture with means of 15.89(3.19), SD=5.549, and with a degree of high. Education and communication technology with means of 14.89(2.98), SD=6.403, and with a degree of mid-level.

Table.3.

Means, standard deviations, and degree for digital culture subscales

Subscales	No. Of Items	M	SD	Degree
information culture	5	15.89(3.19)	5.549	High
education and communication technology	5	14.89(2.98)	6.403	mid-level
Total	10	30.78 (3.1)	11.883	High

Tabular cum graphical form was also used, as shown in Figure. 2.

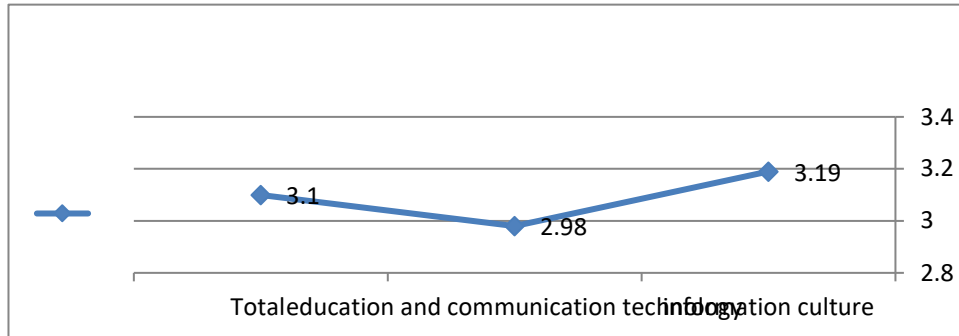


Figure 2 means of digital culture subscales

To which degree do pre-service kindergarten teachers practice the twenty-first century skills related to life and work with kindergarten children in light of the Kingdom's 2030 vision?

In order to answer this question, means, standard deviations, and degree were calculated for life and work subscale, and Table 4. illustrates this.

As shown in table 4. , the means for the whole subscale 109.89(3.92), that is , practice the twenty-first century skills of life and work with a high degree. While the subscales came as follows: Flexibility and adaptability with means of 21.22 (3.54), SD=3.901, and with a degree of high.

Social interaction with means of 19.67 (3.93), SD=4.016, and with a degree of high. Leadership and Responsibility with means of 19.79 (3.96), SD=4.050, and with a degree of high. Communication with means of 27.96 (3.99), SD=3.808, and with a degree of high. Cooperation with means of 21.26(4.25), SD=2.788, and with a degree of very high.

Table.4.

Means, standard deviations, and degree for life and work subscales

Subscales	No. Of Items	M	SD	Degree
Flexibility and adaptability	6	21.22 (3.54)	3.901	High
Social interaction	5	19.67 (3.93)	4.016	High
Leadership and Responsibility	5	19.79 (3.96)	4.050	High
communication	7	27.96 (3.99)	3.808	High
cooperation	5	21.26(4.25)	2.788	Very High
Total	28	109.89(3.92)	15.315	High

Tabular cum graphical form was also used, as shown in Figure 3.

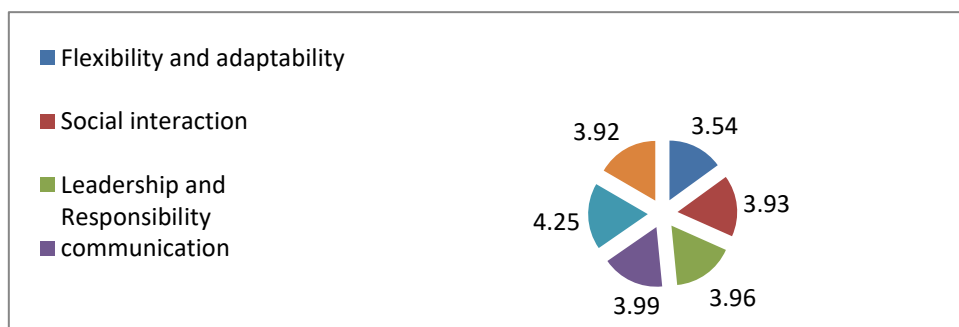


Figure 3 means of life and work subscales

DISCUSSION

This research was conducted to determine to which degree pre-service kindergarten teachers practice the twenty-first century skills of learning and creativity, digital culture, and life and work with the kindergarten child in light of the Kingdom's vision 2030.

Results as shown in tables 2-4 show that all the three skills are highly practiced by pre-service kindergarten teachers.

The results of the twenty-first century skills required for preservice kindergarten teachers indicate that the approval of the study sample was high on these skills, and this can be attributed to the fact that these skills were formulated and identified in light of the guidance of the opinions of experts and specialists in the field, in addition to the use of the findings of the previous study and educational literature regarding Twenty-first century skills.

The foregoing supports the consensus that these skills are the most extensive, detailed and most applicable (Shalaby, 2014), and that these skills, with their classification in the tool, recognize the continuing role of traditional curriculum materials (reading, writing, arithmetic), and suggest that achievement in the digital age More than this methodological basis will be needed. In addition to the above, this classification was used to develop skills for students, such as: (Al-Casey et al., 2018; Roman, 2018; Abdel-Aal, 2018).

There are also many global initiatives that have tried to identify the skills and competencies that students will need to succeed and open up in the 21st century, and one of these initiatives is the "21st Century Partnership; it identified several elements and classifications (Beers, 2014) that include the skills that are included in the tool the current study, taking into account its formulation and employment suited to the pre-service kindergarten teachers.

The results indicated that the approval of the study sample was high on these requirements, and this can be attributed to the fact that these requirements were divided based on the division and classification of the skills themselves, so that each classification has special requirements for the development of its skills, taking into consideration the nature of pre-service kindergarten teachers, in addition to seeking the opinions of experts and specialists in the field and being guided by the findings of previous studies and educational literature that focused on the subject.

The 2030 vision works to increase attention to the development of education as a curriculum, a teacher, a student, a teacher and a school, and considering the teacher is the main pillar and responsible for achieving the goals, it aimed to prepare the teacher and develop it professionally in line with the requirements of the twenty-first century and the skills they need to keep pace with intellectual, industrial, knowledge and technological developments by conducting training courses and workshops, getting acquainted with all that is new in curricula and teaching methods, and granting scholarship opportunities in distinct fields to serve the education sector.

Twenty-first century skills aim to make students capable of critical thinking and problem solving, innovation and creativity, communication and cooperation, technological and information literacy, flexibility, adaptability, initiative and self-direction, productivity and interest in global affairs, global education.

CONCLUSION

Results from this study show that all the three skills are highly practiced by pre-service kindergarten teachers. This implies that when preservice teachers demonstrate 21st Century Skills specifically on learning and creativity, that is, critical thinking and problem solving, communication and share, and creativity and innovation, as well as on digital culture, that is, information culture ,education and communication technology, as well as on life and work , that is, flexibility and adaptability, social interaction, leadership and responsibility, communication and cooperation, they are well prepared to

implement effective classroom management. Therefore, 21st Century skills to teaching and learning for preservice teachers have effect on management of teaching.

RECOMMENDATIONS

To achieve the reality of education and its outputs in light of the developments of the twenty-first century, a change must take place in the education system so that the kindergarten teacher can work on developing the skills of the twenty-first century by choosing a group of them that fit the nature of kindergarten and determining the time period for developing each skill based on its nature and importance and the level of the learner, where twenty-first century skills are long-term goals that have been acquired to the learner in a class, semester, or academic year.

It is necessary to pay attention to the development of students' twenty-first century skills, the importance of preparing them for higher education and the transition from school education to a professional life by providing educational and training services in an active interactive framework that supports the growth of their personalities and social responsibility, enhances the concept of good citizenship, and interests them academically and professionally in line with The requirements of the labor market in the twenty-first century.

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REFERENCES

- Abdel- Aal, M. (2018). The effectiveness of a program enhanced with Web 2 tools in developing twenty-first century skills among students who are mathematics teachers in the College of Education. *Journal of Mathematics Education*, 21 (6), 214-269.
- Al Casey, A.; Tammam, I.; Tammam, A, Mahmoud R. (2018). Enable students of King Khalid University studying science in the skills of scientific experimentation in the light of the requirements of the twenty-first century education (an evaluation study). *Journal of Education and Psychology Message*, 1 (60), 91-116.
- Al-Khaybri, S.(2020). The role of secondary school teachers in developing students' technological awareness to achieve the Kingdom's 2030 vision. *Arab Studies in Education and Psychology, Arab Educators Association*, 118(3): 124-154 .
- Al- Yami, H.(2018). A future vision for the development of education in the Kingdom of Saudi Arabia in light of the Kingdom's vision 2030. *Journal of Educational and Psychological Sciences*, National Research Center Gaza, 2 (26):128-159.
- Beers, S. (2014). *Teaching 21st Century Skills: Action Tools*. Riyadh: Arab Bureau of Education for the Gulf States.
- Demirkol-Orak, S. & İnözü, J. (2021). Teachers' awareness and actual practices of 21st century learning and innovation skills. *International Online Journal of Education and Teaching (IOJET)*, 8(2). 975-997. <https://app.trdizin.gov.tr/publication/paper/detail/TkRJMk16VXhNUT09>
- Guinn, P. (2012) .Mobilizing Mom and Dad: Engaging Parents behind Systemic School Reform (2012). APSA 2012 Annual Meeting Paper, Available at SSRN: <https://ssrn.com/abstract=2108001>.
- Guo, J., & Woulfin, S. (2016). Twenty-first century creativity: An investigation of how the partnership for 21st century instructional framework reflects the principles of creativity. *Roeper Review*, 38(3), 153-161. DOI:10.1080/02783193.2016.1183741

Ali, B. M. H. (2022). Pre-service kindergarten teachers' conceptualization and enactment of twenty-first century skills: 2030 vision. *Cypriot Journal of Educational Science*. 17(10), 3660-3668. <https://doi.org/10.18844/cjes.v17i10.8199>

Jacobson-Lundeberg, V. (2016). Pedagogical Implementation of 21st Century Skills. *Educational Leadership and Administration: Teaching and Program Development*, 27, 82-100.

Kim, H.& Care,E.(2020) . *Capturing 21st century skills Analysis of assessments in selected sub-Saharan African countries*. United Nations Cultural Organization.

Lally, M and Valentine-French, S.(2019) *Lifespan Development: A Psychological Perspective* .Second Edition. <http://dept.clillinois.edu/psy/LifespanDevelopment.pdf>

Roman, H. (2018). *Developing the Physics Teacher Preparation Program in the Faculties of Education in Egypt in the Light of Twenty-First Century Skills*, Ph.D. thesis (unpublished). Graduate School of Education, Cairo University.

Saudi Arabia Vision (2030)*Knowledge Magazine. Education is the gateway to transformation*. https://journals.ekb.eg/article_166969_0.html

Shalaby, N.(2014) A proposed framework for integrating twenty-first century skills in science curricula in basic education in Egypt. *International Specialized Educational Journal*, 10(3): 1-33 .<http://www.ijoe.org>

Sweet, D. (2014). *Strategies California superintendents use to implement 21st century skills programs* (PhD Dissertation). University of Southern, California.