

School Teachers' Awareness of the 21st-Century Life Skills Aspects that Children of Different Ages Need

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Type: Full Article. Received: 24 September 2025, Accepted: 01 June 2026

Accepted Manuscript, In Press

Abstract :Objective: This study seeks to identify school teachers understanding of the 21st-century life skills, and their awareness of the life skills that children of different ages need over their learning process from the perspective of school teachers. **Methodology:** The research population included the private school teachers in Ramallah Directorate of Palestine. Two kindergarten teachers, four elementary school teachers, and five middle school instructors were conveniently chosen for the research sample. The data was gathered through in-depth semi-structured interviews that have been created to investigate teachers' understanding of the 21st-century life skills, as well as to check the most required skills in each grade level. Data was analyzed using a thematic analysis approach after it had been checked for validity and reliability.

Results: The research revealed that Ramallah private school teachers were aware of the 21st-century life skills, and use some of them in their classes, including cooperation, communication, creativity, innovation, critical thinking, and problem solving. The findings also demonstrated that there was no gender difference between female and male 21st-century life skills learners. Hence, both genders seem to need similar life skills. **Conclusion:** the research stresses a strong emphasis on 21st-century life skills in Palestinian schools, with teachers actively adapting them to maximize student development across all grade levels regardless of gender.

Recommendations: The study ended up with a number of recommendations for further research to be conducted on additional Palestinian educational institutes to assess their understanding and application of 21st-century life skills, as well as to investigate the similarities between The International Baccalaureate Organization applied skills and life skills. **Keywords:** 21st-century life skills, social constructivism, Connectivist theory, kindergarten and elementary children, teachers' awareness of life skills.

وعي معلمي المدارس بالمهارات الحياتية للقرن 21 التي يحتاجها الأطفال في مختلف الأعمار

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تاريخ التسليم: 2025/09/24، تاريخ القبول: 2026/06/01

ملخص الدراسة: الهدف: هدفت هذه الدراسة الى تقصي وعي المعلمين بالمهارات الحياتية للقرن 21، ومدى ادراكهم بالمهارات التي يحتاجها الأطفال خلال تعلمهم المدرسي من وجهة نظر المعلمين، ومدى توظيف المعلمين لهذه المهارات مع اختلاف أعمارهم ومراحلهم التعليمية. **المنهجية:** تشكل سياق الدراسة من عينة متيسرة تألفت من أحد عشر معلم ومعلمة من معلمي رياض الأطفال والمرحلة من الصف الاول حتى الصف الرابع، بالإضافة لمعلمي مرحلة الصف الخامس والسادس الأساسي. تم جمع البيانات من خلال عقد مقابلات فردية مع المعلمين لقياس مدى وعيهم بالمهارات الحياتية للقرن 21، وأهم وأقل المهارات التي يتم استخدامها بكل مرحلة. **النتائج:** أشارت نتائج الدراسة لوعي معقول من معلمي المدارس الخاصة في رام الله بالمهارات الحياتية للقرن 21، واستخدامهم لبعضها في الحصص الدراسية مثل التعاون والتواصل والإبداع والابتكار والتفكير النقدي وحل المشكلات. أظهرت النتائج أيضاً عدم وجود فروق بين الجنسين في حاجات الطلاب والطالبات للمهارات الحياتية للقرن 21. **الخلاصة:** تشير الدراسة إلى وجود تركيز قوي على المهارات الحياتية في بعض المدارس الفلسطينية الخاصة في مدينة رام الله، حيث يعمل المعلمون بنشاط على تكييفها لتعزيز تنمية الطلاب إلى أقصى حد في جميع المراحل الدراسية لكلا الجنسين. **التوصيات:** خرجت الدراسة بمجموعة من التوصيات لبحوث مستقبلية لتقييم مؤسسات تعليمية في فلسطين لتقييم مدى وعي واستخدام مهارات القرن 21 وأخرى لدراسات مستقبلية مشابهة تربط برنامج البكالوريا الدولية ومهاراته بمهارات القرن 21. **الكلمات المفتاحية:** المهارات الحياتية للقرن 21، البنائية الاجتماعية، النظرية الاتصالية، أطفال رياض الأطفال والمرحلة الابتدائية، وعي المعلمين بالمهارات الحياتية.

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Introduction

In an evolving educational landscape, equipping students with 21st-century life skills is essential. This research investigates this imperative from the perspective of educators, assessing their awareness of essential skills such as communication, problem-solving, and innovation. Conducted among private school teachers in Ramallah, the study analyzes how the application of these skills differs across grade levels and reveals key insights regarding gender parity in skill development needs.

Research Background and Related Literature

Theoretical Framework

This study employed both the social constructivist theory (Berger & Luckmann, 1966) and the Connectivist theory (Siemens) (2004). The social constructivist theory served as the primary framework, the wider and more general theoretical framework, while the connectivism theory serving as the deeper and more specific approach for certain aspects of 21st-century skills related to technology.

To begin, social constructivist theory, which builds upon the constructivist epistemology

established by Vygotsky, posits that learners construct their own unique understanding through reflection and social interaction (Shepardson, 1999). Consequently, they uncover and disclose personal meaning underlying their experiences. This social approach to learning positions students as accountable for their own learning process, and empowers them to select personally preferred methods (Brown et al., 2015).

Unlike Piaget, Vygotsky argues that cognitive development is influenced by both biological and social factors. Accordingly, social constructivist theory emphasizes the necessity of social interaction for the continuous development of an individual's cognitive structures. Furthermore, this theory frames education as a vehicle for social change, reflecting a view of human development that is acquired through cultural interactions (Henriques, 1998).

Consequently, social constructivist theory posits a relationship between a child's prior knowledge and their social interactions, whereby these engagements foster the development of cognitive abilities (Vygotsky, 1978). According to Scott (1998), navigating these social interactions and resolving cognitive conflicts also contributes to intellectual growth.

Connectivism is a learning theory for that emphasizes the role of technology in expanding knowledge, and providing learners with new opportunities for sharing and browsing information (Siemens, 2005; 2008). This approach positions students at the center of the learning process, enabling them to become more engaged in constructing their own understanding. This active participation fosters a deeper, metacognitive approach to learning (Downes, 2007).

Within the shifting paradigm of modern education, learning methodologies must continuously adapt. Connectivism provides a valuable framework for this evolution, positing that learning is a process of forming connections within information networks, rather than a solitary act of knowledge acquisition. This theory is particularly relevant for navigating diverse electronic environments and implementing 21st-century life skills. Consequently, this research explores the specific 21st-century skills such as critical thinking, collaboration, and communication employed within this Connectivist dynamic, thereby aligning instructional methods with cognitive development and non-traditional learning settings (Khaldi & Kishek, 2020).

- Creativity and innovation: The capacity of learners to generate novel, contextualized concepts applicable to their daily lives, as well as to construct original ideas and frameworks.
- Critical Thinking and Problem Solving: The capacity to deploy analytical frameworks and rigorous logical reasoning during complex problem-solving scenarios, relying systematically on empirical justification and verifiable evidence.
- Communication: Conveying thoughts and feelings by writing, speaking, and acting, as well as employing complex vocabulary in texts and during dialogues with people. They are also re-explaining and re-writing their thoughts and ideas in various concepts.
- Cooperation: The ability of students to work together, either in person or virtually, to navigate challenges and solve tasks. This competency involves contributing ideas, engaging in peer negotiation, and working effectively within group dynamics.
- Informational Culture: To assess and evaluate the information accessible in sources such as magazines, books, and online websites, to select the proper information source and database, and to

select the most relevant and valuable information from the vast amount of information.

- Media literacy: The ability to verify the credibility of news and information broadcasted through media networks, refute allegations that are consistent in media, use scientific and mathematical knowledge to refute or support media allegations, and be aware that the media occasionally uses numbers and statistics in public opinion industries on social, political, or economic issues.
- Culture of information and communication technology: The student employs technological tools and capabilities, as well as media such as networks, websites, software applications, and GPS devices, to obtain information or conduct data analysis, as well as to use technology as a communication tool in the context of learning and exchanging information and experiences.
- Flexibility and adaptation: The capacity of students to modify and update theories, hypotheses, and conceptual models as new data or evidence emerges. This competency includes the ability to apply established scientific facts and research

findings across diverse cultural, societal, and multidisciplinary contexts.

- Initiative and self-direction: Students may create their own objectives, manage their time, determine their priorities, and work independently to finish a project, implement an idea, or accomplish a goal.
- Cross-cultural social skills: Students must use scientific instruments, theories, and methodologies to understand issues and conflicts in other countries, as well as accommodate different cultural interpretations of research results, laws, or facts, and organize scientific discussions in which opinions and points of view differ across cultures.
- Productivity and accountability: The capacity to define objectives, establish priorities, and successfully manage collaborative projects. This competency also entails a commitment to ethical and professional standards, demonstrated through both rigorous self-evaluation and external assessment.
- Leadership and responsibility: Learners accepting responsibility for their work and ensuring that their accomplishments are of high and deep quality while keeping ethical standards in mind when implementing a project or an idea.

This research employed a dual theoretical framework, grounding itself in social constructivism (Berger & Luckmann, 1966) while using connectivism (Siemens, 2004) to provide a specific lens on technology-related 21st-century skills. Social constructivism emphasized the role of social interaction and cultural contexts in knowledge construction, building on Vygotsky's ideas. Connectivism complemented this by conceptualizing learning as a process of forming connections within information networks. This theory is particularly relevant to the modern learning context, where knowledge is accessed through diverse environments and technologies (Ernest, 1994). Furthermore, the research problem examined the specific application of 21st-century skills within this combined framework.

Research Problem and Rationale

The educational landscape is undergoing a significant transformation. Driven by rapid technological advancements and evolving modes of information access, traditional learning methodologies must now adapt. In this context, learner's cognitive development is no longer a linear process confined to the classroom; rather, it is a continuous trajectory shaped by diverse experiences and

connections within an expanding information network.

This shift necessitates a move in pedagogy from the mere delivery of content toward the cultivation of 21st-century skills, such as creativity, critical thinking, and collaboration. Despite a global emphasis on these competencies, little is known about how teachers in Palestine, specifically within Ramallah, perceive and implement them in their daily practices. Understanding teacher awareness and pedagogical application in this setting is crucial. Therefore, this study aims to address this localized gap by investigating how private school instructors in Ramallah interpret these essential skills, and determine which are most needed for students across developmental stages, from Kindergarten through Middle School.

Connectivism (Siemens, 2004) provides a valuable theoretical framework for this investigation. The theory posits that learning is a dynamic process of forming and nurturing connections within an information network, rather than merely the accumulation of knowledge. This focus on networked learning is particularly relevant to the 21st-century context, where knowledge is encountered not only in formal classrooms

but also across diverse environments and through the application of essential life skills.

21st-century skills, which encompass critical thinking, collaboration, and communication (Khaldi & Kishek, 2020), are crucial for navigating an expanding information landscape. However, the specific manifestations of these skills required for effective learning differ significantly based on a child's developmental stage. For example, the collaborative skills of a first grader using a basic learning platform differ vastly from those of a ninth grader engaged in a complex online research project.

The research problem, therefore, stems from the need to understand private school educators' awareness of these developmental nuances and their motivation to integrate the appropriate 21st-century skills into their pedagogy. While established theories emphasize the importance of adapting instruction to learner's cognitive development, a gap exists in our understanding of how effectively instructors in Ramallah's private schools are implementing these skills. To address this gap, this study employed audio-recorded, in-depth, semi-structured interviews with private school teachers within the Ramallah

district. These interviews were designed to explore instructors' perspectives on:

- Their awareness of the key 21st-century life skills required by students of various age groups.
- The challenges and opportunities associated with integrating these skills into their teaching methods.
- Their level of motivation and support in implementing these skills within the private school curriculum.

By exploring these questions, the research aimed to provide valuable insights into the current state of pedagogy within private schools in Ramallah. This knowledge can be used to develop and implement more effective teaching strategies, that empower students with the necessary 21st-century life skills to thrive in the interconnected digital world benefiting both the private and mainstream educational sectors in Palestine.

It is worth mentioning that, recently, there has been increased interest in life skills education in Palestine as an educational approach that contributes to addressing the significant challenges facing Palestinian education. National and international results have shown a general decline in the level of students in science and mathematics among fourth and tenth graders, and these results

have been consistent for at least two decades. The World Bank 2018 report (World Bank, 2018) points to the deterioration of education quality in Palestine, which is due to the accumulation of educational losses resulting from students' long absence from school for various reasons, including the occupation's measures to divide cities and villages.

Research Questions

The following main questions are addressed by this research:

1. How well private school instructors in Ramallah are aware of the 21st-century life skills?
2. What are the primary 21st-century life skills that children of various ages require from the point view of school instructors?
3. How would the age difference reflect on the required life skills for the students?

The Aim and Significance of the Study

The purpose of this study was to analyze private school instructors' understanding of 21st-century life skills, as well as the necessary skills for each grade level. This study will provide a model for teachers, school administrators, and academics.

This also highlighted the significance of not just giving educational establishments with a

model that may be desirable and sought after, but also delivering such an approach to instructors themselves. Furthermore, educational establishments in general, and schools in particular, should differ, evolve, and develop with time, according to academics. It is virtually unreasonable to teach pupils using learning methods that were employed centuries ago, since the world has changed and the educational system should as well. As a result, schools should adapt their teaching tactics based on newly developed components that may help and prepare children for their future, such as applying 21st-century life skills.

Accordingly, the significance of this study was twofold. First, it addressed an identified need in practice, specifically a lack of awareness regarding pedagogical techniques for integrating 21st-century skills, as noted by the researcher in local school contexts. Second, it aimed to contribute to the underdeveloped body of Palestinian literature on the implementation of these essential skills.

Related Literature

Many educational institutions, social organizations, and global stakeholders (UNICEF, 2017) have begun addressing the significant gap between the skills students

acquire in schools and universities, and those requisite for real-world application and employment in the 21st-century. This collective effort involves formulating comprehensive frameworks to define and identify these skills, offering proposals on how to integrate them into the educational system in general, and core academic fields in particular, and preparing professional development programs to equip educators to teach within a 21st-century paradigm.

The call for developing 21st-century skills has garnered significant attention from educators, international organizations, and relevant educational institutions, who have advocated for the intentional integration of these skills into curricula and textbooks. The Partnership for 21st-Century Skills was established early 2008 through a collaboration between key leaders in development and education worldwide, including the U.S. Department of Education, UNICEF, and relevant educational institutions like the National Council for Teacher Mathematics (NCTM), the National Science Teachers Association (NSTA) ([National Science Teachers Association, 2009](#)), and some commercial entities like Microsoft and the National Education Association ([Binkley et al., 2012](#)).

The "Partnership for the 21st-Century skills" identified twelve essential skills: creativity and innovation, critical thinking and problem-solving, communication, collaboration, information literacy, media literacy, technology literacy, flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility ([Partnership for 21st Century Skills, 2015](#)).

The world is experiencing a surge in technology. The internet is becoming increasingly accessible, providing a wealth of information beyond traditional educational resources. This abundance of knowledge sources allows for more specialized learning opportunities. Recently, educational institutions around the globe have faced the challenge of adapting to a rapidly changing environment. This has led educators and students to explore new methods of teaching and learning to ensure the smooth continuation of education.

Looking through the lens of 21st-century life skills, the culture of technology, and communication skills are currently the most significant skills that the globe is gaining.

The world's culture of technology and communication skills to seek knowledge is currently evolving. People can get creative in designing their own way to connect with others, and use the culture of technology and communication skills. Nowadays, teachers are becoming creative in planning an online digital class to grab the attention of their students through videos, PowerPoint presentations, and even creating games that are played online in group meetings and online classes. As [Martínez-Cerdá et al. \(2015\)](#) explained that in order to share and exploit some of the existing film instructional activities that are already being implemented, teachers must participate more actively in the creation of their own training activities.

Another study by [Demirkol-Orak and İnözü \(2021\)](#) with the title 'Teachers' Awareness and Actual Practices of 21st-Century Learning and Innovation Skills' examined Turkish English language teachers' awareness, motivation, organization (institution), and actual classroom practices in terms of 21st-century learning and innovation skills such as communication, collaboration, critical thinking, and creativity. 26 Turkish English lecturers from Frat University were chosen as participants for this purpose. A mixed approach

descriptive case study was carried out in order to keep the research investigation going. A questionnaire (self-report instrument) and interviews were used to collect data. During the participant selection phase, convenience sampling was used. Furthermore, quantitative data was analyzed using the SPSS program version 2.00, and qualitative data was analyzed using interview questions. The study's findings demonstrated that Turkish English instructors lacked theoretical and conceptual understanding of 21st-century learning and innovation abilities, despite their eagerness to improve them in the classroom.

Another study similar to the current research in that it focused on teachers' level of awareness and also on a specific school.

This study investigated instructors' understanding of 21st-century life skills at various educational levels ([Uche et al., 2016](#)). The contemporary environment is characterized by constant and rapid change, driven by the continual evolution of human cognition, societal structures, and technology. This stands in stark contrast to the priorities of a century ago, when the most crucial life skills placed little emphasis on technology or critical thinking.

In a related context, [Prasetyo et al. \(2021\)](#) examined the implementation of 21st-century

life skills in their article, "The 21st-Century Life Skills-Based Education Implementation at the Non-Formal Education Institution." Their research described non-formal education managers' attempts to integrate these skills. The study employed a quantitative survey design in Yogyakarta City and Sleman District, with managers of non-formal education institutions as respondents. Data were collected via questionnaires and analyzed quantitatively. The findings indicated that the implementation of 21st-century life skills education remained limited to the development of knowledge and hard skills. Consequently, crucial thinking abilities such as conceptual thinking, creativity, innovation, problem-solving, critical thinking, decision-making, and metacognition were largely underdeveloped.

[Khaldi and Kishek \(2020\)](#) evaluated the new Palestinian science and math curricula to see how well they prepare students with essential 21st-century skills. A Critical and Enlightening Study were the researchers developed a rubric with twelve main themes: creativity, innovation, critical thinking, communication, collaboration, information literacy, media literacy, information and communications technology literacy,

flexibility, adaptability, initiative, cross-cultural skills, productivity, accountability, and leadership. The findings showed that the existing curricula poorly represented 21st-century skills, with low focus and insufficient attention. The paper offered a conceptual framework for reshaping curricula with authentic tasks from the Palestinian socio-cultural context to accommodate 21st-century skills and provide school teachers with tangible mechanisms to enhance students' skills. The paper concluded with policy recommendations and suggestions for further research on the relevance and effectiveness of this framework and improvement models in the new Palestinian curricula.

According to another published research, students gained experience in four skills: communication, critical thinking, collaboration, and creativity in terms of learning, practicing, teaching, and assessing them ([Cretu, 2016](#)). Some students were able to adopt the "Four Cs" technique from the skills more than others, but it demonstrated student engagement far more than having a standard learning plan. Teachers were allowed to assign specific abilities to each level, as will be stressed in this study.

Life skills in the 21st-century are innovative and equip students and learners with in-depth

and critical analysis. It provides a different prescription than earlier, and this is the key goal that is being investigated, the awareness that teachers require.

Definition of Terms

This section of the research comprises of the following introduced study built up key concepts:

Life skills for the 21st-Century : The study adopts UNESCO definition which defines them as the skills that individuals should master in order to live effectively, whether on a social level, such as interacting and communicating with others, or on a mental level, such as critical thinking, problem solving, and decision making (UNESCO, 2005). When the concept of life skills is applied to education, the main goals of teaching life skills are: developing learners' ability to successfully deal with different life changes, developing learners' ability to solve life problems, from environmental – local and global, developing the learner's ability to interact socially and communicate with others, and developing the learner's ability to reason logically and think scientifically.

Children : According to the United Nations Convention on the Rights of the Child, a child is any human being under the age of 18 years,

unless majority is attained earlier under the law applicable to the child. (UNICEF, 2010). Children in this research are defined as students enrolled in private schools within the Ramallah area, across the following age groups:

- Early Childhood: 5 - 8 years old (Kindergarten - Grade 2)
- Middle Childhood: 9 - 12 years old (Grades 3 - 5)
- Early Adolescence: 13 - 15 years old (Grades 6 - 8).

Methodology

Research Design

This study adopted a qualitative research approach (Creswell, 2014). This approach considers most appropriate as the primary objective is to explore and understand the perspectives, in-depth experiences, and personal interpretations of school teachers regarding 21st-century life skills. Rather than seeking statistical generalization, this study aims to gain rich, detailed insights into teachers' awareness and their perceptions of the skills needed by students at different grade levels.

Participants

The sample of this study consisted of eleven teachers working in private schools within the Ramallah District of Palestine. The

researchers selected a convenience sample from those who volunteered to participate. Formal approval was secured from the respective school administrations, and all participants provided written informed consent.

A convenient sampling approach was used, allowing the researchers to select participants who could provide diverse perspectives and experiences. Of the eleven included teachers, eight were male and three were female. The selection was made strategically to ensure representation across all grade levels from lower kindergarten to ninth grade, providing insights from teachers working with children at different developmental stages. All participants possessed between 5 and 15 years of teaching experience, and were qualified educators holding at least a bachelor's degree in education, while four held a master's degree in the same field. This sample size is considered appropriate for a qualitative research design, which aims for an in-depth understanding rather than statistical generalization.

Research Instruments

To gather in-depth data from educators' perspectives, this research employed a face-to-face semi-structured interviews. This approach allowed for procedural flexibility, while ensuring the exploration of key themes

related to the study. The interview questions were designed to cover the twelve life skills categorized within the following four axes, aligned with the concept of life skills in the educational context as outlined by [Khaldi and Kishek \(2020\)](#):

A. Developing the Learner's Culture:

- Items in this section explored instructors' understanding of how life skills can contribute to fostering well-rounded learners capable of adapting to various life situations.

B. Problem-Solving Skills (Environmental - Local & Global):

- This section delved into instructors' perceptions of integrating environmental skills into their teaching practices.

C. Social Interaction and Communication Skills:

- Items here focused on how instructors encourage and develop social interaction and communication skills within their classrooms.

D. Logical Reasoning and Scientific Thinking:

- This section explored how instructors integrate life skills to cultivate analytical thinking and scientific reasoning among their students.

The interview items were formulated to address these specific areas and their corresponding skills, thereby facilitating a comprehensive understanding of instructors' awareness and pedagogical readiness for integrating 21st-century skills into their teaching practices within Ramallah private school sector.

Instrument Validity and Reliability

To establish content validity, the interview instrument was first evaluated by a panel of six expert reviewers from Birzeit and Bethlehem universities. They assessed the relevance and clarity of the questions. Furthermore, to ensure content/construct validity, the first two interviews served as a pilot study; based on this, additional questions were added to ensure the instrument comprehensively captured the constructs of interest. To enhance the credibility of the findings, data triangulation was employed by corroborating interview responses with organizational documents and project reports.

To insure reliability, an inter-rater reliability approach was used. One researcher conducted an initial analysis of the interview data, which was then independently re-analyzed by a second researcher. The resulting inter-rater reliability coefficient of 0.82

indicated a reasonable level of agreement, supporting the consistency of the data analysis.

Data Analysis

The qualitative data was analyzed using Braun and Clarke's thematic analysis (Braun & Clarke, 2006), in which the interviews were derived from the research questions and coded before being presented with themes and, finally, patterns.

Following Braun and Clarke's qualitative analysis, the gathered interviews were evaluated using addressed patterns, codes, and themes, as illustrated in the section below:

Step 1: Familiarizing with the data, where the researchers gather the initial data from the teachers and started reading and understanding its content.

Step 2: Generating initial codes, where the researchers explored occurring patterns from the gathered data.

Step 3: Searching for themes, where the researchers began coding the data of similarities, which by the end of this stage a collection of candidate themes or sub-themes emerged.

Step 4: Reviewing themes, where the researchers were able to differentiate the themes, and how the themes fit together.

Step 5: Defining and naming themes, where the researchers named the themes agreed on from the previous stage.

Step 6: Producing the report, where the researchers have had the final analysis with its final themes hence being able to write the report (Braun & Clarke, 2006).

Research Findings, Discussion and Recommendations

This section investigated the key findings gleaned from the semi-structured interviews conducted with eleven private school teachers in Ramallah, Palestine. The interviews explored the teachers' perspectives on the specific life skills most crucial for fostering well-rounded development in students across distinct age groups within the early childhood, middle childhood, and early adolescence stages.

Table (1): The initial findings from teacher interviews, summarizing their perspectives on the most essential life skills for students across three age groups, based on six key questions.

Question	Kindergarten Teachers	First to Fourth Teachers	Fifth to Ninth Teachers	Conclusion
1	- Creativity - Innovation - Communication - Cooperation - Leadership - Responsibility - Critical thinking	- Critical thinking and problem solving. - Creativity and innovation - Cooperation - Communication	- Creativity and innovation - Critical thinking and problem solving. - Communication - Cooperation	deep knowledge regarding the life skills since the IBO program (The International Baccalaureate) adopts such approach
2	Very good knowledge based on the long term experience in teaching, the students cultural background and most importantly the schools priorities and approaches.	Very good knowledge based on the school adopting the PYP (Primary Years Program) considering the 21 st -century life skills.	Very good knowledge based on the school adopting the MYP (Middle Years Program) IB program considering the 21 st -century life skills.	
3	There is no difference between female and male needed skills.	There is no difference between female and male needed skills.	There is no difference between female and male needed skills.	
4	- Innovation and creativity - Problem solving and critical thinking - Communication skills - Cooperation - Adaptation - Culture of information and communication technology	- Critical thinking and problem solving - Creativity and innovation - Cooperation - Communication - Flexibility and adaptation - Culture of information and communication technology	- Creativity and innovation - Communication - Culture of information and communication technology - Critical thinking and problem solving - Cooperation - Culture of information and communication technology	The 21 st -century life skills are applied in all grade levels but each practiced in the most suitable way for the children age and level
5	The least to the most needed life skills: - Media literacy - Productivity and accountability - Flexibility and adaptation - Culture of information and communication technology - Critical thinking and problem solving. - Creativity and innovation - Cooperation - Communication skills	The least to the most needed life skills: - Productivity and accountability - Media literacy - Culture of information and communication technology - Informational Culture - Flexibility and adaptation - Leadership - Communication skills - Cooperation - Creativity and innovation - Critical thinking and problem solving.	The least to the most needed life skills: - Media literacy - Flexibility and adaptation - Informational Culture - Culture of information and communication technology - Cooperation - Communication skills - Critical thinking and problem solving. - Creativity and innovation	The three levels practice many of the 21 st -century life skills. Nonetheless, the first four skills most commonly used are relatively identical within the pursued life skills by the teachers.
6	Innovation and creativity through classroom open discussions, art crafts, seating choice, choice of games, and choice of groups. Communication skills through classroom discussions, classroom activities, and respecting others point of views. Cooperation through group work through the distribution of tasks.	Leadership and cooperation skills through allowing students to create and lead the learning process. Creativity and Innovation through painting and advertizing the unit (student centered). Critical thinking and problem solving through brain storming. distribution of tasks	Students' self-evaluation and reflection Cooperation through presenting the students with a project while dividing students to groups working together. Critical thinking and problem solving through brain storming, criticism, and offering problem solutions. Communication cooperation skills through teamwork for given tasks. Culture of information and communication technology through the use of internet for research.	Student centered learning Distribution of tasks

A thorough analysis of the data revealed a set of key insights as illustrated in Table (1) above.

Answering research questions:

Research question (1): Teachers' awareness of the 21st-century life skills.

Research findings, summarized in Table (2) below, offer a comprehensive understanding of the participants' perspectives regarding educator awareness of the 21st-century life skills.

Table (2): Categories generated from teachers' interviews.

Category 1: Teachers' awareness of the 21 st -century life skills	Category 2: Children's' most needed 21 st -century life skills according to the grade level
Category 3: The 21 st -century life skills in relation to gender difference	Category 4: Awareness vs. reality

According to the interview data across all three grade levels, the school educators' awareness of 21st-century life skills is considered "very good". This is primarily demonstrated by their ability to seamlessly articulate their knowledge and experience, while providing concrete examples of integrating these competencies into their classrooms.

The findings indicate that the school's cultural background motivates not only students but also teachers to advance professionally; educators are regularly provided with professional development workshops by the administration and the International Baccalaureate Organization (IBO) team, focusing on the application of 21st-century life skills across all grade levels. Figure (1) illustrates the parallels between these 21st-century life skills and The International Baccalaureate Organization (IBO) framework.



Figure (1): The categorization of life skills by The International Baccalaureate Organization (IBO). This indicates a similarity between The International Baccalaureate Organization (IBO, 2009) skills used by one of the sampled schools (Ramallah Friends School) and the earlier addressed 21st-century life skills, where many interviewees reflected their

knowledge built on the schools cultural background of being an International Baccalaureate school and already following these untraditional skills.

"I have knowledge of some key indicators of 21st-century skills through following the Primary Years Programme (PYP) and the Middle Years Programme (MYP) program, which enhances and focuses on most of these skills " (T11).

Teachers appear to be receptive to professional development and cultural change as a result of their consistent attendance at workshops, particularly those focusing on the integration of life skills.

"The Middle Years Programme requires teachers to apply many of these skills during teaching and in assignments. Therefore, teachers are well versed in these skills and how to use them, especially since schools regularly conducts workshops on how to apply, utilize, and achieve these skills in the learning process." (T9)

This is where the social constructivist theory intersects with the trait of being a social individual who interacts with the surrounding environment, as Vygotsky clarifies that cognitive brain development is influenced by biological factors as well as human social interaction.

As a result, teachers attend frequent constructivist meetings where they socially connect with one another, increasing their degree of maturity as they continually evolve

via the interactions of their surrounding school environment. Furthermore, social constructivism expanded on the premise that human progress occurs when individuals evolve via cultural relationships with one another, which is known as social transformation (Henriques, 1998).

According to the related literature reviewed above; "Teachers' Level of Awareness of 21st-Century Occupational Roles in Rivers State Secondary Schools" the present study aligns with certain aspects, specifically the focus on educators within a localized school community. On the other hand, the findings of this study diverge from that literature; while the previous study indicated that teacher awareness was merely moderate and uninspiring, the current findings evaluate teachers' awareness as "very good." The sampled instructors in this study demonstrated that they are well-informed and highly capable of utilizing 21st-century life skills within their classrooms.

Answering Research question (2):

Children's most needed 21st-century life skills.

The results presented in Tables (3) and (4) below reveals a substantial alignment across all grade levels, indicating that the most important 21st-century life skills for children are communication skills, collaboration,

creativity and innovation, and critical thinking and problem-solving. Conversely, the skills identified as least critical by the instructors included informational culture, media literacy, productivity and accountability, flexibility and adaptability, and information and communication technology culture. In reality, The findings demonstrated that this similarity occurs because practically all of these life skills are already embedded within the classrooms, though they are adapted to match the children's developmental stages and grade levels.

For example, almost all participants recognized the importance of cooperation as a core skill, and identified age-appropriate techniques for its implementation. This ranged from assigning preschoolers simple collaborative tasks, such as using LEGO bricks to build a tower cooperatively, to conversely tasking ninth graders with solving complex mathematical problems as a cohesive team. The participating instructors stressed their ongoing efforts to cultivate these various competencies to ensure that students attain a deep conceptual understanding. It is worth noting that two participants chose not to rank the 21st-century competencies from least to most important, as they believe that all skills hold equal

significance within their instructional settings.

“I believe I cannot answer this question due to the importance of all the skills for me. At this young age, students need all the skills that will build and shape their character. Therefore, I cannot rank them based on least to most needed. They need all of them to develop into independent, supportive, purposeful, innovative, active, empathetic, critical-thinking individuals who are also characterized by resilience.”(T2)

Notably, the school community in general, and educators in particular, recognize the importance of addressing students' needs and utilizing 21st-century life skills. As a result, numerous professional development workshops are conducted either by the school administration or by the Primary Years Programme / Middle Years Programme (PYP-MYP) team providing systemic support that positions the teaching staff as pioneers in the integration of 21st-century competencies.

According to the interview findings, participants not only acknowledge the value of these life skills, but are also highly trained in implementing them for children of all ages and developmental levels. Furthermore, as shown in table (3), communication, cooperation, creativity/innovation, critical thinking, and problem-solving are the most frequently integrated competencies. Through

these skills, children are enabled to develop innovative ideas related to their daily lives, as well as apply critical and logical thinking to evaluate evidence when addressing complex problems. (Khaldi & Kishek, 2020).

In the related literature, Cretu (2016) argues that each grade level necessitates a relatively specific, bounded set of 21st-century life skills that evolve as the learner progresses through the grades. The findings of the current study, however, diverge from this perspective. Rather than isolating distinct skills for different cohorts, the empirical data demonstrate that children across all grade levels actively engage with the same core 21st-century life skills, provided these competencies are pedagogically tailored to match the students' developmental needs and cognitive capacities.

Table (3): The most commonly utilized 21st-century life skills by instructors across the three grade levels.

Kindergarten Teachers	First to Fourth Teachers	Fifth to Ninth Teachers
Communication skills	Critical thinking and problem solving	Creativity and innovation
Cooperation	Creativity and innovation	Critical thinking and problem solving.
Creativity and innovation	Cooperation	Communication skills
Critical thinking and problem solving.	Communication skills	Cooperation

Table (4): Instructors' least utilized 21st-century life skills for each of the three grade levels.

Kindergarten Teachers	First to Fourth Teachers	Fifth to Ninth Teachers
Media literacy	Productivity and accountability	Media literacy
Productivity and accountability	Media literacy	Flexibility and adaptation
Flexibility and adaptation	Culture of information and communication technology	Informational Culture
Culture of information and communication technology	Informational Culture	Culture of information and communication technology

Answering Research question (3): The 21st-century life skills needs by Children and gender differences

As revealed by the research findings, there was no substantial relationship between a child's gender and the life skills required of them. The majority of the interviewees maintained that there was no gender distinction, asserting that both male and female students equally necessitate the entire spectrum of these 21st-century skills.

“Not really. I think these skills need to be introduced and emphasized for students of both genders equally.”(T2).

In contrast, a single educator strongly disagreed with this consensus regarding gender neutrality, highlighting a perceived gender gap between male and female students. This participant emphasized that female students require distinct competencies compared to their male peers, particularly during adolescence.

“Absolutely! Teenagers think in a completely different way in regard to their gender. Boys at this age tend to communicate more than girls who spend more time empowering themselves as creative students at school.” (T8)

Life skills awareness versus practice of school instructors

The participating educators demonstrated the practical implications of integrating 21st-century life skills within their classrooms, where students were viewed as the central

focus of the learning process, and teachers serve as facilitators and mentors.

This section delves into the instructors' articulated understanding of life skills by highlighting concrete examples from the interviewees' classrooms. Teachers fundamentally acknowledged the value of students acting as active learners, particularly regarding student-centered methods for task assignment.

The interviewees highlighted the importance of this approach, asserting that it naturally incorporates numerous 21st-century competencies into the instructional process. Consequently, this approach is intended to foster deep thinkers, thereby encouraging an innovative trajectory characterized by the active pursuit of knowledge, collaboration, communication, and critical thinking. As the adopted theory of social connectivism claims, this approach encourages students to create and recreate their learning while being the main center of the learning process, facilitating a deeper understanding that fosters lifelong learning (Downes, 2007). As a result, utilizing 21st-century life skills as a nontraditional pedagogical strategy encourages students to become active and metacognitive learners.

The following are examples that provide a demonstration of how participants applied 21st century life skills in their classrooms.

-Cooperation / collaboration: “I assigned the students to research civilizations in the Arab world and divided them into six groups. I chose six civilizations, and each group consisted of four students to research a specific civilization. I sent each group a set of common research questions about all the civilizations. Each group conducted research on the chosen civilization, and we set a deadline for the submission of their work and provided feedback. In class, the students in each group answered these questions and brainstormed together to create a final product highlighting the most significant achievements or landmarks of the civilization. They also divided roles among themselves during the presentation, and so on.” (T6)

-Creativity and innovation: “Encouraging creativity and innovation involves giving students roles during lessons and implementing activities that allow them to create and develop on their own. It involves letting them take the lead in designing activities and observing their development through the skills they practice without directing their ideas to a specific place or angle (during discussions, artistic activities,

choosing their own spaces, play methods, and the groups they belong to, etc.).” (T7)

-Communication: “Communication and interaction are fostered by allowing students to express what they want and their ideas as well, without directing them during classroom discussions and activities. It involves analyzing what they do in the classroom without criticizing them and giving importance to their actions.” (T3)

-Cooperation / collaboration: Collaboration is encouraged by assigning roles among the students within the classroom and by giving importance to what they do throughout the day. Some students ensure the arrangement of games, while others sweep and return sand to the sandbox. Some bring papers and colors, and some make sure to turn off the lights when leaving the classroom. Some students ensure that the classroom is tidy. Hence, a continuous appreciation for their cooperation is expressed by explaining why they are being thanked. (T11).

This research investigated the awareness and implementation of 21st century life skills among teachers in private schools in Ramallah, Palestine. The findings reveal a high level of teacher awareness "very good" regarding these life skills, as demonstrated by their ability to articulate and exemplify their

integration within classrooms across all grade levels. This strong awareness is cultivated by the institution's cultural emphasis on continuous growth, which is systematically supported by professional development workshops offered by the administration. Notably, Figure (1) above visually depicts the alignment between 21st century life skills and the IBO learner profile attributes, further solidifying this focus.

In summary, this section analyzed data collected through semi-structured interviews conducted with eleven private school teachers in Ramallah. The research explored the participants' perspectives on the most crucial 21st century life skills for fostering well-rounded student development across early childhood, middle childhood, and early adolescence stages.

Key Findings

- *Teacher Awareness:* Educators demonstrated "very good" awareness of 21st century life skills, as they seamlessly articulated and provided concrete examples of integrating these competencies into their classrooms for all grade levels.
- *School Culture:* The school's culture emphasis on continuous professional growth, supported by targeted workshops

on the practical application of life skills, significantly contributes to this elevated level of teacher awareness.

- *Alignment with IBO:* The categorization of life skills by the International Baccalaureate Organization (IBO) closely aligns with the skills identified by the teachers (Figure 1) reflecting how the researched school environment implements this program within its pedagogical framework.
- *Most Needed Skills:* Communication, collaboration, creativity/innovation, and critical thinking/problem-solving were identified as the most frequently integrated competencies across all grade levels.
- *Least Needed Skills:* Media literacy, productivity and accountability, flexibility and adaptation, and informational culture were identified as the least utilized skills.
- *Gender and Skills:* The majority of participants reported no significant gender differences regarding the required life skills. However, one educator identified a divergence during adolescence, noting that female students prioritized self-empowerment, whereas male students focused predominantly on communication.

This research highlights the successful integration of 21st century life skills within the private school context studied. The strong teacher awareness, and practical implementation strategies collectively contribute to fostering well-rounded student development across diverse developmental stages.

Conclusion

In conclusion, the research examined the relative importance of specific life skills. While the findings shown in Tables (3) and (4) reveal a significant overlap across all grade levels regarding the necessity of the 21st-century life skills, communication, collaboration, creativity and innovation, and critical thinking and problem-solving emerged as the most heavily emphasized skills. Interestingly, teachers ranked informational culture, media literacy, productivity and accountability, flexibility and adaptability, and information and communication technology culture as less crucial. However, the findings clarify that this perceived lower importance stems from how these skills are adapted, not a complete absence. Teachers reported utilizing all skills but modifying them to suit the developmental stages of their students. For instance, collaboration might involve building blocks

in preschool and evolves into tackling complex mathematical problems collaboratively in ninth grade. This highlights the teachers' commitment to nurturing these skills throughout the students' academic journey.

It's important to acknowledge that two participants opted not to rank the skills, believing all are equally valuable. Additionally, only one teacher expressed a strong belief in a gender gap, suggesting female students require different skills than males, particularly during adolescence. However, the majority of participants refuted this notion, emphasizing the importance of all skills for both genders.

Overall, the research indicates a strong emphasis on 21st-century life skills in some private schools in Ramallah, with teachers actively adapting them to maximize student development across all grade levels and regardless of gender.

Recommendations

The current research provides valuable insights the integration of 21st-century life skills within the private school sector. Based on its empirical findings, the following recommendations are proposed for educational practice and future scholarly research:

Practical Recommendations

- Teachers get regular professional development workshops on 21st century life skills. It is desirable, however, that teachers be open to the notion of allowing cultural change and evolution.
- Involve teachers in the transitioning process from traditional to nontraditional learning, such as applying 21st century life skills, reminding teachers of the necessity of their assistance in this growth.
- Allow instructors to practice these skills utilizing both vertical and horizontal planning, as well as have a greater knowledge of the skills when performed and comprehended.
- Assign a coordinator to ensure that teachers and school administrators follow up on, and coordinate the implementation of 21st century life skills into the learning process, building and sustaining a sustainable development of the skills.
- Create a cooperative and communicative social contact network among teachers, leading to the creation of a cognitive school environment.
- Build upon the school's emphasis on continuous learning by offering ongoing professional development workshops focused on innovative strategies for

integrating 21st century life skills across all grade levels.

- Encourage collaboration between teachers of different grade levels to share best practices in adapting these skills for their specific students.
- While the research identified communication, collaboration, creativity and innovation, and critical thinking and problem-solving as top priorities, ensure all 21st century life skills are explicitly addressed within the curriculum.
- Develop age-appropriate activities and lessons that target a variety of skills throughout the school year, not just focusing on them in isolation.
- As highlighted by the teachers, create learning environments where students are active participants in their own education.
- Utilize project-based learning, group activities, and problem-solving tasks that encourage collaboration, communication, and critical thinking.
- Encourage metacognition by prompting students to reflect on their learning process and how effectively they are using various 21st century life skills.
- Integrate life skills into the education system, given the crucial role that schools and universities play in the community

project, and based on their responsibilities in achieving sustainable development goals.

- Research the impact of improving school students' life skills on their psychological relief and treatment of trauma resulting from crises, especially in Gaza.

Future Research

- Investigate the pre-post teachers' perspectives on the implementation and implications of 21st century life skills
- Investigate the process of educating trainers for the preparation and delivery of high-quality teacher workshops.
 - Search the use of 21st century life skills in Palestinian educational institutes and organizations.
- Investigate the long-term impact of this approach on students' development of 21st-century life skills. This could involve longitudinal studies tracking students' progress in acquiring and utilizing these skills throughout their academic journey and beyond.
- There is also a need for further studies examining teachers' awareness of these skills, and the extent to which they practice them, as well as the availability of an educational environment conducive to

developing these skills among students and teachers.

Dedication

This work is dedicated to the memory of Nasser Mousa, father of Hiba and Amanda whose wisdom, sacrifices, and encouragement built the foundation upon which this work stands. Though he has passed, his legacy lives on, and we honor his memory with this achievement.

To Sylvia Mousa, mother of Hiba and Amanda, our guiding light and source of strength. Thank you for your endless devotion, for celebrating every small victory with us, and for lifting us up whenever the road grew difficult. This milestone belongs to you just as much as it does to us.

Disclosure Statement

Ethics Statement

The authors of this study got an ethical clearance letter from the Research ethics committee at Birzeit University before conducting the study. Informed consent was obtained from all of the participants to participate in the study.

Conflicts of Interest

The authors declare no conflicts of interest regarding the research, intellectual property, or the publication of this study.

Authors Contributions

Mousa Khaldi: conceptualization, methodology, investigation data analysis, supervision, writing original draft.

Heba Mousa: supervision, data collection, validation, investigation, reviewing and editing the final draft.

Amanda Mousa: data collection, validation, investigation, reviewing and editing the final draft.

All authors contributed critically to the intellectual content, approved the final manuscript, and agree to be accountable for all aspects of the work, including its accuracy, integrity, and conclusions.

Funding: The authors declare that no funds were received over the whole life span of the study.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon request.

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