

INTERNATIONAL STUDIES IN EDUCATIONAL SCIENCES

EDITORS

PROF. DR. BÜLENT PEKDAĞ

PROF. DR. ERDAL BAY

March 2024

Genel Yayın Yönetmeni / Editor in Chief • C. Cansın Selin Temana

Kapak & İç Tasarım / Cover & Interior Design • Serüven Yayınevi

Birinci Basım / First Edition • © Mart 2024

ISBN • 978-625-6644-77-9

© copyright

Bu kitabın yayın hakkı Serüven Yayınevi'ne aittir.

Kaynak gösterilmeden alıntı yapılamaz, izin almadan hiçbir yolla çoğaltılamaz.

The right to publish this book belongs to Serüven Publishing. Citation can not be shown without the source, reproduced in any way without permission.

Serüven Yayınevi / Serüven Publishing

Türkiye Adres / Turkey Address: Kızılay Mah. Fevzi Çakmak 1. Sokak

Ümit Apt No: 22/A Çankaya/ANKARA

Telefon / Phone: 05437675765

web: www.seruvenyayinevi.com

e-mail: seruvenyayinevi@gmail.com

Baskı & Cilt / Printing & Volume

Sertifika / Certificate No: 47083

INTERNATIONAL STUDIES IN EDUCATIONAL SCIENCES

March 2024

Editors

PROF. DR. BÜLENT PEKDAĞ

PROF. DR. ERDAL BAY

CONTENTS

CHAPTER 11

USING INTERACTIVE INFOGRAPHICS IN EDUCATION

Ezgi Pelin YILDIZ

CHAPTER 217

SYSTEMATIC PROGRAM THEORY AND ITS REFLECTIONS ON TURKISH EDUCATION SYSTEM

Okan DEDE, Doğan Can AKÇİN

CHAPTER 339

THE EFFECTS OF TECHNOLOGY ON YOUNG LEARNERS IN THE CLASSROOM

Bahar ÖZET

CHAPTER 457

EXPLORING THE ROLE OF ATTITUDE AND APTITUDE IN FOREIGN LANGUAGE LEARNING

Ecem EKİNCİ, Mithat EKİNCİ

CHAPTER 569

EVALUATION OF ACTIVITIES IN SEVENTH GRADE SCIENCE TEXTBOOKS ACCORDING TO 2018 SCIENCE CURRICULUM IN TERMS OF SCIENTIFIC PROCESS SKILLS

Sena Nur ÇOLAK, Sevgül ÇALIŞ

CHAPTER 693

TASK-BASED LANGUAGE TEACHING: CURRENT TRENDS AND FUTURE DIRECTIONS

Doğan Can AKÇİN, Okan DEDE

CHAPTER 7113

**THE ROLE OF PHYSICAL ACTIVITY AND SPORT IN THE LIVES OF
INDIVIDUALS WITH INTELLECTUAL DISABILITIES**

Tuğçe AKBAŞ, Nihal ŞEN

CHAPTER 8133

21ST CENTURY SKILLS AND NEW APPROACHES IN EDUCATION

Okan SARIGÖZ



CHAPTER 8

21ST CENTURY SKILLS AND NEW APPROACHES IN EDUCATION

Okan SARIGÖZ¹



¹ Assoc. Prof. Dr., Hatay Mustafa Kemal University, okan.sarigoz@gmail.com,
ORDID ID: 0000-0002-1616-9789

Introduction

In the 21st century, success can be said to depend on a cycle of preserving technology, problem-solving, communication, critical thinking, collaboration, and new approaches to education. These elements are interconnected in a spiral manner and emphasize character, ethical approach, and social skill awareness to the individual. In the contemporary world of the 21st century, possessing fundamental skills for lifelong learning is of great importance in achieving success. Education systems are responsible for imparting and ensuring these skills that adapt to the rapid changes and technological developments of the information age. Accordingly, the educational institutions implement innovative teaching methods and new approaches to education to overcome the prevalence of traditional techniques.

21st century skills comprise three main themes and sub-themes: *cognitive skills*, including critical thinking, innovation, problem-solving, and versatility; *social skills*, including collaboration, social responsibility, and communication; and *technological skills*, including digital literacy and the use of information and communication technologies (Bourn, 2018; Sarigöz et al., 2012). Education standards play a crucial role in shaping activities in the global market. These standards or skills are developed to enable countries to compete at the national and international levels.

Globalization, along with the Industry 4.0 Revolution and advances in information and communication technologies, has further increased the importance of these skills in education. Flexible and adaptable educational environments, technology integration, and lifelong learning are some of the new approaches in education developed and implemented to impart these skills. In addition, new methods are constantly being developed in education to meet the demands of the 21st century. These new approaches or methods in education are intertwined and focus sustainably on ethical behavior and social responsibility. By allowing technical advancements and human-centered facilities, these approaches also establish a sustainable structure. Productivity and these new approaches also contribute to the enhancement of prosperity, social progress, and effective presentation in the knowledge society, enabling countries to participate responsibly in all activities and contribute to the growth of production.

1. 21st Century Skills

The 21st century skills comprise the knowledge, collaboration, communication, critical thinking, creativity, and problem-solving necessary for personal success in today's world. The ability to blend expertise and skills in the 21st century is crucial for daily survival and job success. Among the fundamental skills required for the contemporary business world are teamwork, communication, critical thinking, and information

and communication technology literacy. In fact, these competencies are anticipated to retain their significance well beyond the confines of the 21st century. Various individuals, institutions, and organizations have defined and emphasized these skills through various frameworks and models (Ledward & Hirata, 2011; The Partnership for 21st Century Learning, 2015). There is a growing recognition of the importance of equipping each individual in education with 21st century skills. As a result, educators should integrate advanced technology and global business products into their curricula to meet 21st century expectations. In other words, incorporating 21st century skills into the curriculum is crucial not only for a select few in a particular academic field, but for all students (Pellegrino & Hilton, 2012). As 21st century skills gain more importance in educational policies and curricula, this shift in focus necessitates the comprehensive and organized inclusion of these skills in the curriculum (Cengiz, et al., 2015; Dede, 2010; Jacobs, 2010; Jerald, 2009; Stephens & Keqiang, 2014; Voogt & Roblin, 2012).

The discipline required by the 21st century includes a set of skills including reconstruction, analysis, interpretation, information and media literacy, critical thinking, and accountability.

The Organisation for Economic Co-operation and Development (OECD) categorizes these skills into three different dimensions: knowledge, communication, ethics, and social impact (Ananiadou & Claro, 2009). Wagner (2008) divides these abilities into subcategories, including problem-solving, critical thinking, accessing, and organizing features, personal and social responsibility, communication, collaboration, leadership, and imagination (Atış-Akyol & Aşkar, 2022). In addition to the foundational skills in 21st-century theoretical frameworks and curricula, analyses focused on literature-based societal and national values indicate, according to records from the Ministry of National Education, the presence of 7 core skills and various sub-skills.

Due to rapid technological advancements, society is undergoing significant changes in various areas, from daily life to the workplace. This continuous cycle of transformation has become a reality in the current century (Castells, 2010). In conjunction with this reality, technological developments in the 21st century have transformed economic, social, and daily life by significantly affecting the interests, wishes and demands of society. This rapid progress has led to the widespread dissemination of information, the development of new social networks, and the impact on various areas of social concern, including business and education. The Internet has revolutionized access to information, making it easier and faster than in the past.

As a result, the perception that knowledge is difficult and time-consuming to acquire is changing. An adequate education system is needed to adapt to

this technological change. As human demands evolve, the education system needs to adapt and this makes the restructuring process vital (Millî Eğitim Bakanlığı [MEB], 2011). In the early 2010s, many highly aware associations and companies based in the United States (American Association of School Librarians, National Education Association, Lego, Microsoft, Pearson, ETS, Intel, HP, Dell, Apple, Crayola, Cisco, etc.) came together for an initiative emphasizing the need to emphasize and develop 21st century skills (Erkut, 2014). This initiative is presented in the form of a comprehensive summary product produced by the Department of Defense Education Activity (DODEA) in 2014. This framing focuses on three main themes - learning and innovation learning, life and vocational skills, literacy (information and media) learning - and the different skill sets that represent these themes. These efforts represent an important step towards the development of an appropriate education and training model for the 21st century (Partnership for 21st Century Skills, 2008). Therefore, it is evident that steps have been taken to initiate a new perspective on the current education system. With this initiative, education systems aim to ensure that students acquire not only cognitive skills (literacy, mathematics, etc.) but also 21st century skills that can be taught and learned, aiming to improve their thinking, and learning styles and improve their working and living conditions (Orhan-Göksun, 2016).

1.1.Types of 21st Century Skills

The rapid growth of information and communication technologies (ICT) necessitates a comprehensive understanding of the international economy and continuous transformation in the ways of working and learning. Drawing from this, it is indisputable that the acquisition of new skills is imperative for success in the current century. 21st century skills are defined as skills for education and workplace learning in the current economy; however, to be effective citizens, it is necessary to adapt to the realities and conditions of the 21st century. On the other hand, when the literature is examined, a common definition encompassing 21st century skills has not been encountered (Anagün, 2018; Voogt & Roblin, 2012).

Education takes its place in our lives as a basic task that enables students to acquire skills appropriate to their age and file. The National Law (No. 1739) also summarizes the principles of the education system and emphasizes the realization of the purpose of education by individuals. In the future, education should prioritize interdisciplinary development and adaptable skills, rather than merely providing basic knowledge. This approach will enable students to succeed in today's world and adapt to various conditions (Cansoy, 2018).

1.2. Scope

The term '21st Century Skills' encompasses a range of fundamental and sub-skills related to life, social-emotional skills, technical and social skills,

and transferable skills. Technical skills such as computer programming and data analysis are considered essential for job requirements. Social skills like communication, attention to detail, listening, empathy, critical thinking, and conflict resolution are difficult to measure due to their human-related and complex nature. Digital skills, ICT skills and digital literacy are widely used interchangeably in this field. These skills are essential for job success and are at the forefront of 21st century skills (Joynes et al., 2019).

The 21st century includes various cycles such as innovation, critical thinking, learning, metacognition, communication, problem solving, citizenship, empathy, information literacy, collaboration, ICT literacy, life and career, and adaptation to personal and social responsibility (GPE, 2020). Academic development is not independent of these cycles, as research shows a positive correlation between 21st century developments and increased academic achievement. Therefore, 21st century development should be supported in schools and alternative learning environments (GPE, 2020). In other words, research consistently shows that 21st century developments are positively correlated with increased academic achievement, emphasizing the necessity of supporting these developments in schools and alternative learning environments, and indicating that they are not independent processes (Köşer, 2022). These skills can be categorized into three main themes.

1.1.1. Social and Emotional Skills

Social and emotional skills are abilities to develop traits, characteristics and behaviors that differ from literacy or numeracy in that they focus on managing, perceiving, and relating to others rather than merely processing information. According to the OECD (2021), social and emotional skills change and develop through learning. A study conducted by CASEL (2022) suggests that understanding social and emotional breakdowns can help combat inequality and promote participation in healthy, egalitarian communities.

Psychological well-being refers to an individual's overall mental health, including attitudes, relationships, and personal development, as well as positive levels of functioning. Emotion regulation involves understanding and controlling one's emotions. Planning and organization require the individual to plan and organize activities to fulfill job responsibilities in a complex environment. Collaborative work entails enthusiasm, flexibility, and shared responsibility in different teams. Social and cultural awareness necessitates understanding the norms and expectations of different cultures, taking others' perspectives, and having broad empathy (Sarigoz et al., 2015). Flexibility and adaptability refer to the individual's ability to adapt to changes.

Relationship management involves establishing and maintaining healthy growth and communication with various individuals and groups. Conflict resolution involves reaching consensus by promoting cooperation

and resolving disputes between different interests. These skills are essential for personal development and success in various aspects of life (Aggarwal, 2021; Borowski, 2019; Care & Luo, 2016; Chen, 2019; International Labor Organization, 2021; Kankaras & Suarez-Alvarez, 2019; Kenworthy & Kielstra, 2015).

1.1.2. Language and Communication Skills

Language and communication skills are essential for personal and social development; they allow individuals to discern their feelings, thoughts, attitudes, values, understand others, exchange information, and express their desires, traits, fears and concerns. These skills are crucial for effective communication both in the first language and in a foreign language. Different models create different ways of combining language and communication with skills that are not considered language and communication skills, such as oral communication, multilingual communication, written communication, literature, effective transfer, and self-expression. The preservation of language and communication is addressed within three sub-skills: communication in native and foreign languages, negotiation, and active listening skills (Council of Europe, 2016).

1.1.3. Higher Order Thinking Skills

Higher order thinking involves advanced, analytical, critical, and creative thinking. It helps individuals to effectively access computer effects, analyze information, apply knowledge, evaluate situations, and produce results. However, it faces challenges such as performance-based problem discrimination and decision making. A model classifying higher order thinking skills takes into account and integrates relevant literature (Sarigoz, 2017). For instance, while argumentation is recognized as a separate skill type in one model, it is not given a separate title. Similarly, creative thinking and strategy use are considered as sub-dimensions of problem-solving skills, which are evaluated under problem-solving and decision-making skills. This approach emphasizes the importance of focusing and deep thinking in higher-order thinking (Binkley et al., 2012).

1.1.4. Self-Skills

Self-learning refers to the process of developing one's attitudes and perceptions towards oneself. It involves personal development, commitment, and motivation. This section provides a brief overview of different self-skills such as perseverance, self-discipline, self-control, and leadership certificates. Perseverance involves determining one's own destiny, persistence, and patience, while self-discipline focuses on self-control and control of action. Leadership certificates cover various aspects such as self-awareness, planning, time management, self-regulation, and initiative (Skinner et al., 2009).

1.1.5. Learning Skills

When considering the learning skills model, it enables organizing, analyzing, and synthesizing elements for effective learning. It manages time and information effectively both individually and in groups. It understands acquired individual sets goals and determines appropriate learning strategies. It monitors successes and failures in the learning process, implements changes to address deficiencies. It evaluates skills such as independent learning, lifelong learning, developing teaching strategies, and academic characteristics (Hoover & Patton, 1995; Sarıgöz, 2020; Zydziunaite et al., 2022).

1.1.6. Work Skills

When developing a comprehensive overview of 21st-century work skills, it is observed that studies focusing on career planning and general work skills are included. It emphasizes the importance of effective use and relevant fieldwork and draws attention to the separate examination of literacy skills. In addition, it emphasizes the need for higher order thinking and communication skills, and discusses the concepts that constitute the ability, namely entrepreneurship, productivity, resource management, and accountability (Care & Luo, 2016).

1.1.7. Literacy Skills

Literacy is a crucial skill that individuals need to possess in the 21st-century knowledge society. According to the Turkish Language Association (TDK), literacy means having knowledge and includes reading and understanding content such as texts and visuals (TDK, 2023). It also includes a learning continuum that enables individuals to achieve their goals, develop their knowledge and potential, and participate fully in society (Küslü, 2022). The definition of literacy evolves over time depending on social needs, demands for economic development, and advances in research and measurement.

In today's world, literacy goes beyond reading and understanding content. It also encompasses various types of literacy such as computer literacy, technology literacy, digital literacy, and e-literacy. In the current model, information literacy and technology literacy are combined under information and communication technology literacy (Şimşek et al., 2023). Citizenship literacy includes skills such as awareness and participation in governance, spatial literacy, map literacy, and infographic reading skills. Visual literacy includes map literacy and infographic reading skills. Overall, literacy is a vital skill that every individual must possess in order to succeed in today's information society (Rintaningrum, 2009; UNESCO, 2022; Valtin et al., 2016).

2. New Approaches in Education

Today, new educational solutions are being developed in response to various factors such as the characteristics of Generation Z, Scamper Technique,

teacher assessment literacy, gender, social and educational, learning models and robotic coding education. Numerous studies are being conducted to provide more effective education for these distributions, to investigate the relationship between children with developmental language delay and their mothers, and to analyze the current situation, problems, and solutions in Turkey. In addition, different studies are also being carried out to examine conflicts between administrators and teachers in educational institutions, to emphasize gender equality, to include augmented reality-based design and implementation, and to address the gender perspective in preschool children's books (Bas & Sarigoz, 2018). Educational studies influenced by new approaches play a significant role in intergenerational knowledge transfer. However, the unique characteristics, scope, ethical rules, features, and capabilities of Generation Z are often overlooked. Effective education should be organized to address the digital elements that constitute Society 5.0. As discussed by Kocaman-Karoğlu, Bal-Çetinkaya, and Çimşir (2020), it is essential to manage and evaluate the impact of the digital environment on education.

Environmental education is becoming increasingly important, especially with the decrease in life expectancy and the increase in environmental problems. The primary aim of environmental education is to create awareness, develop knowledge and skills, and support individuals in demonstrating their sustainability. Being environmentally friendly involves adopting behaviors such as protecting and improving the environment. Ensuring active participation is the main purpose of environmental education. The most critical issue in environmental education is to create environmental consciousness and develop attitudes that have a lasting and positive impact on the environment. The Scamper Technique, which includes seven stages (Combine, Modify, Substitute, Adapt, Eliminate, Put to another use, and Reverse), used to develop these attitudes, helps children develop problem-solving skills and imagination. It also helps children understand the functions of objects and substances around them. Environmental education provided with the Scamper technique allows children to express their feelings and thoughts and increases their self-confidence (Güzelyurt and Özkan, 2018). As a result, environmental education is of great importance in terms of promoting sustainable practices and developing environmental awareness among individuals. By applying the Scamper Technique, children can develop their problem-solving skills, imagination, and self-confidence and ultimately contribute to a more sustainable future (Güzelyurt & Özkan, 2018; Özyaprak, 2016; Yıldırım & Akman, 2020; Yıldız-Demirtaş, 2021).

Values are very important for an individual's character development; they affect mental, social, emotional, and spiritual development. Guiding the use of skills, they become a significant component of the 21st century skill set model developed in this report. Values and skills are closely intertwined concepts,

which renders them fundamental constituents of character development. Respect is a fundamental aspect of human behavior that encompasses values, beliefs, opinions, practices, rights, and privacy. It is a fundamental element of family unity, honesty, justice, friendship, kindness, patriotism, morality, conscience, manners, and thrift.

Respect is a series of beliefs, resilience, and behaviors influenced by personal, cultural, and social values, determining what is right and wrong. Love is a very important aspect of family unity, involving sacrifice, trust, affection, and loyalty. Honesty is the knowledge of ethics and values related to basic principles, demonstrating sincerity, truthfulness, reliability, and humility. Justice is the ability to behave fairly and equally by sharing values. Friendship is characterized by sacrifice, trust, understanding, solidarity, loyalty, and cooperation. Benevolence is characterized by generosity, cooperation, compassion, hospitality and sharing. Patriotism is associated with diligence, solidarity, and sensitivity towards nature and natural heritage. Morality is a set of beliefs, resilience and behaviors that determine right and wrong, influenced by personal, cultural, and social values. Conscience requires sensitivity to and sympathy for different political experiences. Etiquette refers to the respect and courtesy that exists in society, and thrift involves the careful use and management of resources.

Values education focuses on character development, the adoption of ethical values and an awareness of social responsibility. It teaches basic human values such as honesty, respect, justice, empathy, responsibility, tolerance, and cooperation, and encourages individuals to contribute to society rather than focusing only on personal achievement (Camara et al., 2015; Care & Luo, 2016; Council of Europe, 2016; Lippman et al., 2015; MoNE TTKB, 2017; MOE, 2018; TDK, 2023; UNICEF, 2017).

3. 21st Century Skills and New Approaches in Education

The growth of the 21st century entails acquiring skills necessary for a fast-paced world. New approaches in education help develop these skills, ensuring their relevance in the workplace and education systems. The learning process is designed to sustain lifelong learning, enabling individuals to adapt to and navigate new knowledge, technologies, and approaches. 21st century learning encompasses social and emotional skills, language and communication skills, higher order thinking, self-directed learning, study, work, and literacy. The study of the place of knowledge in education enables the equipping of knowledge and outcomes with qualifications required for marketing or higher education.

The increasing acquisition of skills in the 21st century highlights the importance of educators and their equipment in supporting this growth. New methods in education can help students acquire 21st century skills by

combining experiential learning, constructive movement, coding workshops, flexibility and adaptability, entrepreneurship and self-direction, and values in education. These approaches enable presenting real-life problems, encouraging students to create things on their own, organizing growth and STEM activities, acquiring skills needed for different roles and responsibilities, monitoring their understanding, and learning, and developing social and emotional skills, language and communication, and higher order thinking. Furthermore, these approaches provide students with the necessary skills for the future.

Teaching in the 21st century focuses on developing skills such as technology, communication, problem solving, critical thinking and collaboration; for this reason, new approaches in education are needed to adapt to this. These include integrated technology use, project-based learning, collaborative learning environments, critical thinking and problem-based learning, self-regulated learning, and global awareness and multiculturalism. Integrated use of technology enriches learning experiences by enabling students to effectively utilize digital technologies and enhances their creative thinking abilities. Project-based learning encourages active participation and makes learning more meaningful.

Collaborative learning environments utilize collaboration, communication, and management technologies to provide a comprehensive learning experience. Critical thinking and problem-based learning emphasize analytical thinking, problem-solving, and decision-making processes. Self-regulated learning includes teaching methods such as goal setting, time management, and self-assessment to manage and sustain learning processes. Global awareness and multiculturalism promote understanding of global issues and appreciation of different cultural perspectives, support global growth and reinforce values such as empathy and tolerance.

These approaches continue within the education system, providing students with skills for success and developing societies in the 21st century. In this way, adopting new approaches to education can help students acquire 21st century skills and be better prepared for the future. These approaches aim to maximize students' potential by making learning experiences more effective, engaging, and meaningful (Bursalıoğlu, 2008; De Jong, 2007; Greenhalgh, 1986; Louis, 2012; Lunenberg, Korthagen & Swennen, 2007).

REFERENCES

- Aggarwal, A. (2021). *Global framework on core skills for life and work in the 21st century*. ILO. Geneva.
- Ananiadou, K., & Claro, M. (2009). 21st-century skills and competencies for new millennium learners in OECD Countries. *OECD Education Working Papers*, No. 41, OECD Publishing, Paris.
- Atış-Akyol, N., & Aşkar, N. (2022). Erken çocukluk döneminde 21. yüzyıl becerileri. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, 42(3), 2597-2629.
- Bas, M., & Sarigoz, O. (2018). An examination of teacher candidates' attitudes towards teaching profession. *International Journal of Educational Administration and Policy Studies*, 10(4), 25-32.
- Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., Miller-Ricci, M., & Rumble, M. (2012). Defining Twenty-First Century Skills. In P. Griffin, B. McGaw, & E. Care (Eds.), *Assessment and Teaching of 21st Century Skills* (pp. 17-66). Springer.
- Borowski, T. (2019). *CASEL's framework for systemic social and emotional learning*. Establishing Practical Social-Emotional Competence Assessments Work Group: Collaborative for Academic, Social, and Emotional Learning.
- Bourn, D. (2018). *Understanding global skills for 21st century professions*. Basingstoke, UK: Palgrave Macmillan.
- Bursalioğlu, Z. (2008). *Okul yönetiminde yeni yapı ve davranış*. Ankara: Pegem Akademi Yayınları.
- Care, E., & Luo, R. (2016). *Assessment of transversal competencies: Policy and practice in the Asia-Pacific region*. UNESCO.
- CASEL. (2022). What Is the CASEL framework? <https://casel.org/fundamentals-of-sel/what-is-the-casel-framework/#the-casel-5> Erişim Tarihi: 03.01.2024.
- Cengiz, M. Ş., Sarigöz, O., & Dönger, A. (2015). Evulation of pre-service teachers' ideas about brainstorming method in terms of some variables. *The Journal of Academic Social Science*, 3(12), 251-263.
- Chen, D. (2019). *Toward an understanding for assessing 21st century skills: Based on literature and national assessment practice*. Paper presented at the NCME 2019, Toronto, Ontario, Canada, April 4–8.
- Council of Europe. (2016). *Competencies for democratic culture: Living together as equals in culturally diverse democratic societies*. Council of Europe. <https://rm.coe.int/16806ccc07> Erişim Tarihi: 05.01.2024.
- De Jong, O. (2007). Trends in western science curricula and science education research: A Bird's eye view. *Journal of Baltic Science Education*, 6(1), 15-21.
- Dede, C. (2010). Comparing frameworks for 21st century skills. In J. Bellanca, & R. Brandt, *21st century skills: Rethinking how students learn* içinde (pp. 51-76). Indiana: Solution Tree.

- Erkut, E. (2014). 21. yüzyıl yetkinlikleri. <http://erhanerkut.com/21-yy-yetkinlikleri/21-yuzyil-yetkinlikleri-sorun/> Erişim Tarihi: 17.02.2024.
- GPE. (2020). 21st century skills: *What potential role for the global partnership for education? A landscape review*. Global Partnership for Education. <https://files.eric.ed.gov/fulltext/ED627371.pdf> Erişim Tarihi: 05.01.2024.
- Greenhalgh, L. (1986). SMR forum: Managing conflict. *Sloan Management Review*, 27(4), 45-51.
- Güzelyurt, T., & Özkan, Ö. (2018). Okul öncesi öğretmenlerinin okul öncesi dönemde çevre eğitimine ilişkin görüşleri: Durum çalışması. *Electronic Turkish Studies*, 13(11), 651-668.
- International Labor Organization. (2021). *The contribution of social dialogue to gender equality*. https://www.ilo.org/global/publications/books/WCMS_679957/lang-en/index.htm Erişim Tarihi: 05.01.2024.
- İçme, T., & Büyük, U. (2023). Z kuşağına nasıl bir fen eğitimi verilmelidir? *Eğitimde Yeni Yaklaşımlar Dergisi*, 6(2), 1-19.
- Jacobs, H. H. (2010). A new essential curriculum for a new time. H. H. Jacobs, *Curriculum 21: Essential education for a changing world*. In (pp. 7-17). Virginia: ASCD.
- Jerald, C. D. (2009). *Defining a 21st Century Education*. Alexandria: Center for Public Education.
- Kankaras, M., & Suarez-Alvarez, J. (2019). Assessment framework of the OECD study on social and emotional skills. *OECD Education Working Papers*, No: 207. OECD.
- Karadoğan, A. (2019). Z kuşağı ve öğretmenlik mesleği. *Ağrı İbrahim Çeçen Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 5(2), 9-41.
- Kenworthy, L., & Kielstra, P. (2015). *Driving the skills agenda: Preparing students for the future*. Economist Intelligence Unit.
- Kocaman-Karoğlu, A., Bal-Çetinkaya, K., & Çimşir, E. (2020). Toplum 5.0 sürecinde Türkiye'de eğitimde dijital dönüşüm. *Üniversite Araştırmaları Dergisi*, 3(3), 147-158.
- Küslü, F. (2022). *Öğretmenlerin eleştirel dijital okuryazarlık becerilerinin çeşitli değişkenler açısından incelenmesi*. Doktora Tezi, Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü.
- Ledward, B. C., & Hirata, D. (2011). *An Overview of 21st Century Skills*. Honolulu: Kamehameha Schools Research & Evaluation.
- Louis, R. C. (2012). *A case study exploring technology integration and incorporation of 21st century skills in elementary classrooms*. College of Professional Studies Northeastern University, Boston, Massachusetts.
- Lunenberg, M., Korthagen, F., & Swennen, A. (2007). The teacher educator as a role model. *Teaching and Teacher Education* 23, 586-601.

- Pellegrino, J. W., & Hilton, M. L. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, D.C.: The National Academies.
- Rintaningrum, R. (2009). Literacy: Its importance and changes in the concept and definition. *Teflin*, 20(1), 1-7.
- OECD. (2021). *Social and emotional skills: Well-being, connectedness and success*. <https://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf> Erişim Tarihi: 09.02.2024.
- Özyaprak, M. (2016). Yaratıcı düşünme eğitimi: Scamper örneği. *Journal of Gifted Education and Creativity*, 3(1), 67-81.
- Sarıgöz, O., Karakuş, A., & İrak, K. (2012). Meslek yüksekokulu öğrencilerinin elektromanyetik kirlilik ile ilgili görüşlerinin değerlendirilmesi. *Electronic Journal of Vocational Colleges*, 2(2), 1-8.
- Sarıgöz, O., Hacıcaferoğlu, S., Dönger, A., Cam, F., & Koca, M. (2015). Çalışanların mobbinge uğrama düzeylerinin bazı değişkenler açısından incelenmesi. *Akademik Sosyal Araştırmalar Dergisi*, 3(14), 360-373.
- Sarıgöz, O. (2020). *Yaşam boyu öğrenme*. (1. Baskı). Ankara: Anı Yayıncılık.
- Sarigoz, O. (2017). An analytical study related learning with flipped classroom model. *Mustafa Kemal University Journal of Social Sciences Institute*, 14(38), 1-11.
- Skinner, E. A., Kindermann, T. A., Connell, J. P., & Wellborn, J. G. (2009). Engagement and disaffection as organizational constructs in the dynamics of motivational development. In K. R. Wenzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 223-245). Routledge/Taylor & Francis Group
- Stephens, M., & Keqiang, R. X. (2014). Using a framework of 21st century competencies to examine changes between China's 2001 and 2011 Mathematics curriculum standards for basic education. *Journal of Mathematics Education*, 5(2), 9-15.
- Şimşek, A., Şimşek, E., & Kızıltepe, F. (2023). *21. yüzyıl becerileri ve değerlere yönelik araştırma raporu*. https://ttkb.meb.gov.tr/meb_iys_dosyalar/2023_05/11153521_21.yy_becerileri_ve_degerlere_yonelik_arastirma_raporu.pdf Erişim Tarihi: 12.03.2024.
- The Partnership for 21st Century Learning. (2015). *Framework for 21st century learning*. https://static.battelleforkids.org/documents/p21/p21_framework_brief.pdf Erişim Tarihi: 08.01.2024.
- Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*, 44(3), 299- 321.
- Wagner, T. (2008). *The global achievement gap: Why even our best schools don't teach the new survival skills our children need and what we can do about it*. New York, NY: Basic Books.

- Yılmaz, S., Yılmaz-Bolat, E., & Gölcük, İ. (2020). Erken çocukluk döneminde uygulanan çevre eğitim programının çocukların çevreye karşı tutumları üzerindeki etkisi. *Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi*, 17(1), 557-578.
- Yıldız-Demirtaş, V. (2021). *Yaratıcı ve farklı düşünmeye giden yol: Scamper*. Ankara: Eğiten Kitap.