

Article History

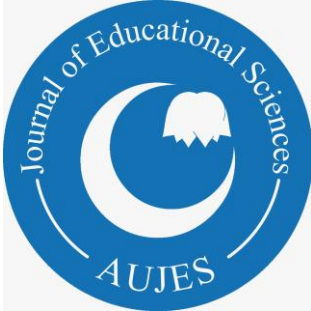
Received: 25.10.2022

Received in revised form: 28.05.2023

Accepted: 27.06.2023

Available online: 28.06.2023

Article Type: Research Article



ADIYAMAN UNIVERSITY
Journal of Educational Sciences
(AUJES)

<https://dergipark.org.tr/tr/pub/adyuebd>

The Investigation of the 2018 Life Studies Curriculum and Practices to Provide Students with 21 st Century Skills

Ash Kıyıkçı¹, Melike Özyürt²

¹Ministry of National Education, Turkey 

²Department of Educational Sciences, Gaziantep Faculty of Education, Gaziantep University 

To cite this article:

Kıyıkçı, A. & Özyürt, M. (2023). The investigation of the 2018 life studies curriculum and practices to provide students with 21 st century skills. *Adiyaman University Journal of Educational Sciences*, 13(1), 21-40.

The Investigation of the 2018 Life Studies Curriculum and Practices to Provide Students with 21st Century Skills

Aslı Kıyıkçı^{1*}, Melike Özyürt²

¹Ministry of National Education, Turkey

² Department of Educational Sciences, Gaziantep Faculty of Education, Gaziantep University

Abstract

The present study examined the 2018 Life Studies curriculum (LSC) and its practices, which have been in implementation in Turkey, in terms of developing students' 21st century skills. For this purpose, the 2018 LSC curriculum was scrutinized together with the Life Studies text books recommended by the Ministry of National Education for the first, second, and third graders in the 2020-2021 academic year. The study adopted document analysis, one of the qualitative research methods, and employed descriptive analysis in analysing research data. Partnership21 framework was used as the frame of reference in addressing research data. As a result, it was determined that the 2018 LSC learning outcomes and the activities included in the Life Studies coursebooks and workbooks are mostly aimed at improving the students' learning and innovation skills. Additionally, learning outcomes and activities are focused on developing critical thinking and problem solving to the most, and collaboration to the least among that cluster. The learning outcomes and activities included in the curriculum and books attempt to promote information literacy among the information, media, and technology skills, and the flexibility and adaptability among life and career skills. However, the curriculum ignores improving media literacy. Moreover, the coursebooks do not include activities to improve media literacy, productivity, and responsibility skills. It has also been found that there is a harmony between the learning outcomes in the curriculum and the activities in the textbooks in developing 21st century skills. Most of the learning outcomes in the curriculum are aimed at improving students' 21st century skills. However, there is a limited number of practices for the development of those skills in coursebooks and workbooks. Thus, it is recommended to enrich the coursebooks and workbooks with activities aimed at improving students' 21st century skills.

Key words: Life Studies Curriculum, 21st Century Skills, Coursebooks, The P21 Framework, Learning and Innovation Skills, Information, Media and Technology Skills, Life and Career Skills

Introduction

The first quarter of the 21st century, which is called the information age, has led to a global and rapid transformation in the fields of technology, science, art, economy, and education. For countries to survive in this environment, they need to make progress in science and technology. In addition, it is vital to raise innovative, and entrepreneurial individuals with high problem-solving skills who can transfer the knowledge they have learned to daily life (Ekici, Abide, Canbolat, & Öztürk, 2017, Bybee, 2010, Dede, 2010). However, the skills that individuals need to be active in society, and to be successful in education and business life in the 21st century are not limited to those. Individuals' social and intercultural skills and such skills as flexibility, communication, creative thinking, critical thinking, reflective thinking, taking responsibility, and initiative should also be developed (Uluyol & Eryılmaz, 2015). That's why, the diplomas and basic skills acquired by individuals in 21st century business life are not sufficient. A great many local and international research and reports emphasize the importance of such skills as problem-solving, accessing information, and using technology for individuals to be successful in business life (Ananiadou & Claro, 2009; Canso, 2018; Kivunja, 2015; Reich, 1992; Rotherham & Willingham, 2009; Silva, 2009). All these are called 21st century skills.

Studies have been carried out to define and classify 21st century skills by certain institutions, organizations, and communities such as OECD, NCREL, ISTE, P21, and ATCS. The products of these studies are called 21st century skill frameworks. Figure 1 demonstrates the most frequently cited 21st century skill frameworks in the literature and how 21st century skills are classified in these frameworks.

* Corresponding Author: Aslı Kıyıkçı, aslikykc84@gmail.com

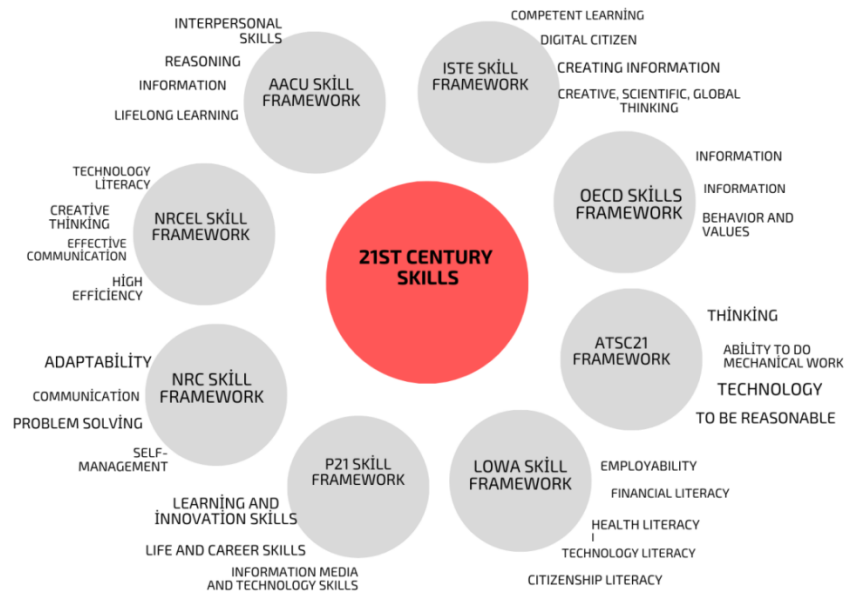


Figure 1.The Frameworks for 21st Century Skills

The examination of these frameworks yields that the skills such as critical thinking, creative thinking, problem-solving, learning to learn, communication, collaboration, and technology literacy are included in all frameworks, albeit with different classifications/sub-dimensions. The P21 skill framework, which is under investigation, is one of the most widely used frameworks in school education. The P21 skill framework, implemented in 21 states and supported by 33 institutions in the USA, is given in Figure 2.

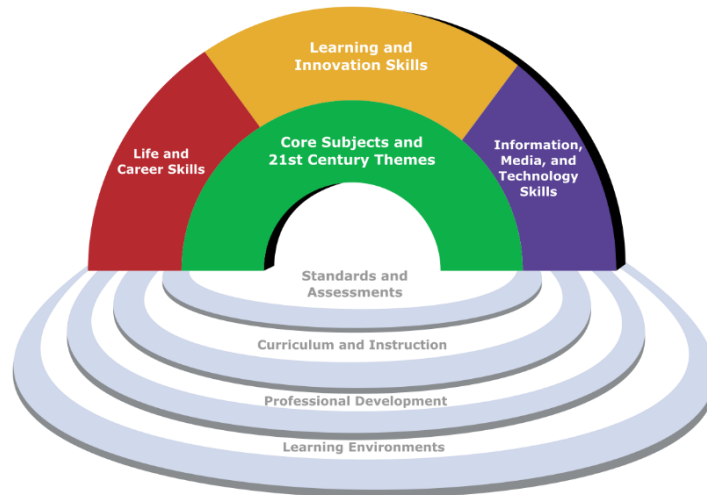


Figure 1 - P21 Framework for 21st Century Learning

Figure 2.21st Century Skills and Support Systems (Partnership for 21st Century Skills, 2015)

Figure 2 indicated that the P21 framework consisted of three dimensions: learning and innovation skills, information media, and technology skills, and life and career skills. *Learning and Innovation* include four skills: creative thinking and innovation, critical thinking and problem-solving, communication, and collaboration (P21, 2015). These skills are also known as the 4Cs.

The *Information, Media, and Technology* dimension of the P21 framework includes three skills: information literacy, information, communications, and technology (ICT) literacy, and media literacy. These literacies necessitate individuals to use time and resources effectively in their adventure of accessing information through technology, and to act in accordance with ethical rules in using a variety of media tools (P21, 2015).

Life and Career Skills are categorized as flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership, and responsibility. Flexibility and adaptability require adapting to different environments and uncertain situations. It is aimed to equip individuals with the ability to manage time and goals correctly by taking initiative and to work with people with various life experiences and different cultural characteristics through social and cross-cultural skills. Productivity and

responsibility skills refer to working with stakeholders follow in ethical rules, and leadership and responsibility skills aim at exploiting each individual's potential decently to achieve common goals (P21, 2015).

Today, the acquisition of these skills by students has become a necessity rather than an option (Williams, 2020). Therefore, a great number of schools organize their education in a way to develop students' 21st century skills, thus, they aim to educate students in a way to be more successful in all areas of life, including professional life (P21, 2015). However, developing these skills necessitates systematic changes in formal education. Curricula and their elements implemented in schools need to be updated by integrating 21st century skills (Nieveen & Plomp, 2017). Moreover, it has been observed that individuals should be active in the processes of knowing, understanding, sensemaking, and realizing during the practices aimed at developing 21st century skills. In this regard, this should be taken into consideration when updating the curriculum (Nair & Ranjan, 2020; Sulistyaningsih, Sulam, Syakur & Musyarofah, 2019). To sum up, curricula with fixed and information-filled content should be replaced by those where teachers are guides and aim to reveal student competencies and skills to meet the needs and expectations of individuals (Ananiadou & Claro, 2009). Canada, Finland, and the Netherlands can be given as examples of countries that reflect this point of view in their curricula. In these countries, curricula are developed in which components such as teacher skills, teaching materials, measurement and evaluation techniques are integrated to develop students' 21st century skills (Fisser & Thijs, 2015).

The studies in Turkey started with the "21st Century Skills and Quality of Education Meeting Series" held for the first time on the 26th of June, 2012. The meetings were organized by the Turkish Industry and Business Association with the participation of representatives of the Ministry of National Education. It was pointed out in these meetings that individuals should have skills such as creative thinking, critical thinking, problem-solving, communication, collaboration, knowing the ways of accessing information, using technology while accessing information, being open-minded, flexible, and adaptable to be successful in business life. Moreover, it has been noted that individuals must be aware of their responsibilities, be self-directed and have initiative, have developed social and cultural skills, and have productive and leadership qualities (TÜSİAD, 2013). However, these should not only be regarded as necessary for future business life. These skills are also of great importance for individuals to fulfil their civic duties and take an active part in daily life as a social entity (Çelebi & Altuncu, 2019). As a result, the curricula in practice in Turkey have been updated within this framework (Board of Education, 2017). In this regard, the Life Studies curriculum, which is under investigation, has also been updated (MoNE, 2018).

Updating curricula to develop students' 21st century skills is an important step. It is also vital to examine the inclusiveness and adequacy of the curricula in practice in terms of developing students' 21st century skills. That's why, with such a study, matters not provided for, if any, can be identified and curricula and textbooks can be made more functional in improving students' 21st century skills.

A great number of research have problematized whether curricula and textbooks aimed at improving 21st century skills in different levels of education and various courses in Turkey. To illustrate, the social studies curriculum and textbooks (Demir & Özyurt, 2021), and the social studies teaching undergraduate program (Bozkurt, 2021) were investigated in terms of 21st century skills. Atik & Yetkiner (2021) analysed the learning outcomes of the biology curriculum and Çetin & Çetin (2021) scrutinized the 2013 preschool curriculum and the activity book for teachers with similar objectives. Similarly, Kalemkuş (2021) examined the third and fourth-grade learning outcomes of the 2018 science curriculum. Turkish language and literature curriculum learning outcomes (Gelişli & Erdoğan, 2020), eighth grade 2018 Turkish curriculum learning outcomes, textbooks, and activities, (Altun & Güröl, 2019), the 2018 Turkish curriculum (Kurudayıoğlu & Soysal, 2019), English curriculum (Çelebi & Altun, 2019) were studied in the context of 21st century skills. These studies concluded that the curricula do not cover all skills and some of the skills are not sufficiently included. However, it has been determined that there are learning outcomes for the development of most of the 21st century skills in the curricula under investigation and activities for the development of these skills in the textbooks.

The examination of the studies on the Life Studies curriculum yields that they focused on the opinions of the teachers (Şenay 2015; Alak ve Nalçacı 2012; Türkyılmaz, 2011; Tuncer 2009; Uğur 2006) and the elements of the curriculum. For example, Aykaç (2011) and Ütkür (2018) examined which methods and techniques teachers used while implementing the Life Studies curriculum, and Narin (2015) analysed the opinions of teachers about developing citizenship knowledge, skills, and values through the curriculum. Öztürk & Kalafatçı (2016), investigated the applicability of the curriculum according to the opinions of teachers. It is observed that the curriculum is analysed in the context of social skills (Gündoğan, 2017), values (Yaşaroğlu, 2018), and key competencies (Taneri & Yüksel, 2020). These studies have determined that the Life studies curriculum includes the skills of doing and executing a task with the group, and the skills of planning and problem-solving (Gündoğan, 2017). However, digital competencies are given little place (Taneri & Yüksel, 2020).

The literature includes a limited number of studies in which the life studies curriculum was examined within the framework of 21st century skills. They found that communication and collaboration skills were

adequately included in the curriculum, but it was limited in terms of developing critical and creative thinking skills (Bektaş, Sellum, & Polat, 2018). Eker & Kurum (2021) determined that learning and innovation skills are mostly included in the curriculum. However, the analysis of the coursebooks and workbooks had never been carried out in the context of 21st century skills. The present study analysed the coursebooks and workbooks, besides the curriculum, in the context of 21st century skills. The present study is important in terms of giving a holistic idea about whether the life studies curriculum and practices develop students' 21st century skills. Besides, it is hoped that the results of the study will contribute to the development of the practices in the field and the needs analysis of the curricula to be developed.

In this regard, the purpose of this study is to examine whether the 2018 Life Studies curriculum and its practices are aimed at improving the students' 21st century skills. In line with the main aim of the study, answers to the following questions are sought.

1. Do the learning outcomes of the 2018 Life Studies curriculum aim at improving students' 21st century skills?
2. Do the practices (texts, text-based activities, and questions) in the first, second, and third-grade Life Studies coursebooks aim at improving students' 21st century skills?
3. Do the texts and activities in the first, second, and third-grade Life Studies workbooks aim at improving students' 21st century skills?

METHOD

Research Model

Document analysis, one of the qualitative research methods, was used in this study. Qualitative studies are conducted by employing techniques such as observation, interview, and document analysis, examining the units of analysis in their natural environment thoroughly and revealing the reality by answering why and how questions (Yıldırım & Şimşek, 2008). Document analysis, on the other hand, has been accepted as a method that makes sense by predicting events, phenomena, and cases (Kıral, 2020). In this method, the formation of an understanding of the relevant subject is provided by the analysis of the documents (Corbin & Strauss, 2008). In this study, document analysis was preferred as the Life studies curriculum, coursebooks, and workbooks were analysed in the context of 21st century skills.

Data Sources

The data sources of the study are the learning outcomes in the Life Studies curriculum in the 2020-2021 academic year (MoNE, 2018), the practices in the coursebook, and the activities in the workbook. The practices in the coursebook are aimed at learning outcomes and consist of texts, text-based activities, and questions. The workbook, on the other hand, contains only activities related to learning outcomes. They are the first-grade (Alemdar, 2020), second-grade (Dokumacı, Gök & Dokumacı, 2018), and third-grade coursebooks (Çelikbaş Güral & Özcan, 2020) and workbooks recommended by the Ministry of National Education in the 2020-2021 academic year. They included the units of Life in Our School, Life in Our Home, Healthy Life, Safe Life, Life in Our Country, and Life in Nature in the spiral curriculum at each grade level (MoNE, 2018).

The Life Studies Curriculum, which is under investigation within the scope of the study, was put into practice in 2018. There are 148 learning outcomes in the curriculum. Life Studies first-grade and second-grade coursebooks were granted for five years starting from the 2019-2020 academic year, with the decision of the Board of Education No. 8 dated 28.04.2019. The third-grade coursebooks were approved by the Board of Education No. 78 issued 28.05.2018. The practices in the first-grade coursebook consist of 53 texts, text-based activities, and questions. There are 50 texts, text-based activities, and questions in the second-grade coursebook and 43 of them in the third-grade coursebook. The analysed workbooks were written by the Commission of the MoNE (2020). There are 74 activities in the first-grade workbook, 120 activities in the second-grade workbook, and 119 activities in the third-grade workbook.

Data Analysis

This study examined the learning outcomes in the 2018 Life Studies curriculum, the practices in the first, second, and third-grade coursebooks (texts, text-based activities, and questions), and the activities in the workbooks in terms of improving students' 21st century skills. In this regard, research data were analysed descriptively based on the P21 skill framework. The P21 analysis framework used in data analysis is submitted in Table 1 (Gelen, 2017).

Table 1:P21 Analysis Framework for 21st Century Skills

21st Century Skills											
Learning & Innovation skills				Information, Media & Technology Skills			Life & Career Skills				
Creative thinking	Critical thinking and problem-solving	Communication	Collaboration	Information literacy	Information, communications, and technology (ICT) literacy	Media literacy	Flexibility and adaptability	Initiative and self-direction	Social and cross-cultural skills	Productivity and accountability	Leadership and responsibility
Learning outcomes and activities aimed at creating various ideas, making creative and original works with others	Learning outcomes and activities for effective reasoning, analysis, evaluation, and development of various perspectives	Ability to express verbal, written, and unwritten ideas in different environments	Learning outcomes and activities to demonstrate the ability to work with various teams, to achieve common goals together	Learning outcomes and activities for effective access to information resources, use, and management of information	Using technology as a goal to advance knowledge	Interpreting why and how media messages are created, choosing the appropriate media product	Adapting to various roles and environments, adapting to multicultural environments	Effectively managing time and workload, setting goals, and taking initiative	To be able to work with people from different socio-cultural backgrounds, respecting different ideas and opinions.	The multi-way operation, obtaining quality products, striving to achieve the intended result	Acting responsibly, taking into account the interests of the society, being an example, and being a leader to achieve the common goal

While presenting the findings, the learning outcomes were given as they were coded in the curriculum. For example, 2.4.3. refers to the third learning outcome related to the fourth unit of the second grade. The practices in the coursebooks and workbooks were coded based on the order of the text and activities in the book. M1 is the first text in the relevant unit, M1E1 is the first activity of the first text; M1E2 represents the second activity of the first text. Text-based questions were coded by adding the letter S to the order of the text in the book. For example, questions related to the second text of the relevant unit are shown as M2S. A similar coding was also done for the activities in the workbook.

Validity and Reliability

To ensure the reliability of the data analysis in the study, the learning outcomes, the practices in the coursebooks, and the activities in the workbooks were analysed independently by the researchers. After the analysis, the inter-coder reliability coefficient was estimated based on the formula of “The number of consensus / (Total consensus + the number of dissensus) x 100” (Miles & Hubermann, 2016). The inter-coder reliability was determined to be 0.86. Afterward, a full consensus was reached by discussing the learning outcomes, practices, and activities that the coders think differently. Moreover, examples of learning outcomes, practices, and activities are also included under the tables while presenting the findings.

FINDINGS

Findings Regarding the Learning Outcomes

A total of 148 learning outcomes, 53 for the first-grade level, 50 for the second-grade level, and 45 for the third-grade level, were examined within the scope of the study. The association of these learning outcomes with 21st century skills was given in Table 2.

Table 2: Analysis of Learning Outcomes by 21st Century Skills

21st Century Skills													
Ünit	Grad	Learning & Innovation skills				Information, Media & Technology Skills			Life & Career Skills				
		Creativity and innovation	Critical thinking and problem-solving	Communication	Collaboration	Information literacy	Information, communications, and technology (ICT) literacy	Media literacy	Flexibility and adaptability	Initiative and self-direction	Social and cross-cultural skills	Productivity and accountability	Leadership and responsibility
Life in Our School	1		1.1.2 1.1.17	1.1.1 1.1.9 1.1.10 1.1.11 1.1.13		1.1.4		1.1.12 1.1.16	1.1.14 1.1.15	1.1.1 1.1.11 1.1.13		1.1.3 1.1.8 1.1.12	
	2		2.1.11	2.1.1 2.1.4 2.1.5 2.1.7 2.1.8 2.1.9	2.1.7			2.1.4 2.1.7 2.1.10	2.1.1	2.1.2 2.1.8 2.1.3		2.1.6	
	3	3.1.5 3.1.9	3.1.1 3.1.2 3.1.3 3.1.4 3.1.6	3.1.8	3.1.7	3.1.5 3.1.10		3.1.4	3.1.1 3.1.10	3.1.2 3.1.3 3.1.8			
Life at Home	1		1.2.7	1.2.1 1.2.4					1.2.5 1.2.6				
	2		2.2.2 2.2.4 2.2.6	2.2.1 2.2.5	2.2.5	2.2.3 2.2.6	2.2.6	2.2.9	2.2.8		2.2.8		
	3	3.2.3 3.2.6	3.2.1 3.2.5 3.2.8		3.2.4	3.2.1 3.2.3		3.2.8	3.2.4 3.2.7				
Healthy Life	1		1.3.2 1.3.3 1.3.5					1.3.6					
	2		2.3.1 2.3.3 2.3.4 2.3.6 2.3.7			2.3.5	2.3.5						
	3		3.3.2			3.3.2						3.3.5	
Safe Life	1		1.4.7			1.4.5	1.4.6	1.4.1 1.4.3 1.4.4				1.4.1 1.4.3	
	2		2.4.1 2.4.6		2.4.4	2.4.4	2.4.5						
	3	3.4.3 3.4.6	3.4.2 3.4.3 3.4.5 3.4.6	3.4.3 3.4.4 3.4.5		3.4.1							
Life in Our Country	1		1.5.2 1.5.4									1.5.6 1.5.7	
	2		2.5.2 2.5.4 2.5.5			2.5.1 2.5.3 2.5.6	2.5.3 2.5.6	2.5.8		2.5.7			
	3		3.5.4 3.5.3	3.5.2	3.5.7	3.5.6	3.5.9			3.5.7	3.5.4		
Life in Nature	1		1.6.5			1.6.7	1.6.7	1.6.3				1.6.4	
	2		2.6.1 2.6.2 2.6.3 2.6.8		2.6.4	2.6.7 2.6.9	2.6.9					2.6.4	

	3	3.6.1				3.6.2						3.6.2
		3.6.3										
		3.6.4										
		3.6.6										
Total	6	46	21	7	19	10	0	14	10	11	2	12

As can be seen in Table 2, 119 (80%) of 148 learning outcomes in the LSC are aimed at developing one or more 21st century skills. When the findings are analysed by grade level, the highest number of learning outcomes aimed at developing 21st century skills are in the second grade (45 learning outcomes), followed by the third grade (37 learning outcomes), and the least number of acquisitions are in the first grade (37 learning outcomes) curriculum. When Table 2 is analysed based on units, the highest number of learning outcomes developing these skills are in the “Life in Our School” unit, and the least number of those are in the “Healthy Life” unit. Some learning outcomes are aimed at developing students’ more than one 21st century skill. It has been determined that the learning outcomes in the curricula at all grade levels aimed at improving students’ skills in the learning and innovation cluster to the most (80 learning outcomes), and those in the information, media, and technology cluster (29 learning outcomes) to the least. Additionally, there are learning outcomes to develop students’ critical thinking and problem-solving skills (46 acquisitions) to the most in the curricula. It is followed by those aiming at improving communication (21 learning outcomes) and information literacy (19 learning outcomes) skills, respectively. It has been determined that the learning outcomes related to the development of productivity and responsibility skills (2 gains) are the least ones. One of these is in the second-year curriculum and the other is in the third-year curriculum. Learning outcomes for the development of media literacy skills were not included in the curricula. Below are examples of learning outcomes aiming at improving students’ 21st century skills.

Critical thinking skill:

- ‘HB.3.2.6. Makes original suggestions for the effective and efficient use of resources at home.’*
- ‘HB.3.1.9. Makes original suggestions for the effective and efficient use of school resources.’*

Critical thinking and problem-solving skills:

- ‘HB.1.1.2. Distinguishes similarities and differences between oneself and peers.’*
- ‘HB.2.3.1. Realizes the relationship between healthy growth and development and personal care, sports, sleep, and nutrition.’*
- ‘HB.3.6.3. Finds directions by making use of nature.’*

Communication skill:

- ‘HB.3.5.3. Introduces the characteristics of historical, natural, and touristic places in the immediate vicinity.’*

Communication, social and intercultural skills:

- ‘HB.1.1.13. Follows the rules of courtesy when communicating at school.’*

Information literacy skill:

- ‘HB.2.5.6. Explores the cultural heritage elements in its immediate surroundings.’*

Information, communications, and technology literacy skill:

- ‘HB.2.2.6. Investigates the contribution of economical use of resources at home to the family budget.’*

Entrepreneurship and self-management, productivity, and responsibility skills:

- ‘HB.2.2.8. Implements the works s/he has planned during the day.’*

Collaboration, social and intercultural skills:

- ‘HB.3.5.7. Participates in social responsibility projects that address the problems of people from different cultures living in our country.’*

Findings Regarding the Practices in Life Studies Coursebooks

The practices in the Life Studies coursebooks initially present the text and then include text-based activities and questions. In this regard, 53 texts from the first-grade coursebook, 50 texts from the second-grade coursebook, and 45 texts from the third-grade coursebook together with text-based activities and questions were examined. The obtained results are presented in Table 3.

Table 3: Analysis of Practices in the Coursebooks Based on 21st Century Skills

		<i>21st Century Skills</i>										
<i>Unit</i>	<i>Grad</i>	<i>Learning & Innovation skills</i>				<i>Information, Media & Technology Skills</i>			<i>Life & Career Skills</i>			
		Creativity and innovation	Critical thinking and problem-solving	Communication	Collaboration	Information literacy	Information, communications, and technology (ICT) literacy	Media literacy	Flexibility and adaptability	Initiative and self-direction	Social and cross-cultural skills	Productivity and accountability
<i>Life in Our School</i>	1			M1 M2 M11 M13 M15E	M11				M14	M2		M3 M8
	2	M2E	M2E1 M14S	M4 M7	M4 M7							
	3		M7 M2E1 M3E1 M5E1 M9E1	M8S1	M7 M8S1							
<i>Life at Home</i>	1				M2 M4				M6			
	2		M1 M4E1 M6E1 M6E3		ME4							
	3	M3E1 M5E1 M6E2	M4E1 M6E1					M7E1				
<i>Healthy Life</i>	1		M3 M4E1									
	2											
	3	M4E1 M5E1 M1S1	M4E1									
<i>Safe Life</i>	1		M7		M4				M4			M1
	2											
	3	M2E1	M2E1 M5E1									
<i>Life in Our Country</i>	1	M6E1 M7E1		M4		M1E1	M5			M4		M7E1
	2				M7E1 M8E1	M8E1	M6E1 M8E1					
	3	M5S1				M5S1 M3S1 M7S1		M7				

<i>Life in Nature</i>	1	M4E1 M5E1	M4E1	M8S1 M1	M2E1
	2		M8E1 M8E2 M2S1	M4E2 M4E1 M9E2	
	3		M3E1	M2S1	M5E1

As indicated in Table 3, 23 (14%) out of a total of 168 texts in the Life Studies coursebooks are aimed at developing one or more 21st century skills. The examination of text-based activities yielded that 37 (16%) out of a total of 225 activities are aimed at developing these skills. It was determined that only 13 (8%) of the 166 questions in the coursebooks under the headings of ‘Let’s examine’, ‘Let’s evaluate’ and ‘Let’s get ready’ are aimed at developing 21st century skills. In light of these, it can be alleged that the limited number of practices in the coursebooks are aimed at improving students’ 21st century skills. Moreover, it has been found that most practices (text, activities, and questions) in the third-grade coursebooks, followed by the first-grade and the second-grade at least, are aimed at improving students’ 21st century skills, respectively. When Table 3 is analysed in terms of units, it is observed that the “Safe Life” and “Healthy Life” units do not include any practices for developing 21st century skills at the second-grade level.

When the texts, activities, and questions in the coursebooks were analysed, it was concluded that these practices are mostly aimed at improving learning and innovation skills among the skill clusters. Critical thinking and problem-solving are the most referred learning and innovation skills. A very limited number of practices are included in the coursebooks to develop information, media and technology skills, and life and career skills. There are no practices in the coursebooks to improve media literacy, productivity, and responsibility skills under these clusters. Some examples of texts, activities, and questions among the practices in the Life Studies coursebooks aimed at improving students’ 21st century skills are presented below.

Example text for communication skill:



Hello guys and girls, I am your teacher. My name is Zuhal Bora. Now, can you please introduce yourself?

(The unit entitled Life in Our School, M1: We meet)

The M1 encoded text of the unit entitled *Life in Our School* in the first-grade Life Studies coursebook is intended to enhance the skills of purposeful communication and self-expression in different environments. Accordingly, the text has been found to develop communication among 21st century skills.

Example activity for critical thinking and problem-solving skill:

Mehmet and Şeyma are researching the consumption of resources in their homes. Answer the questions according to the table.

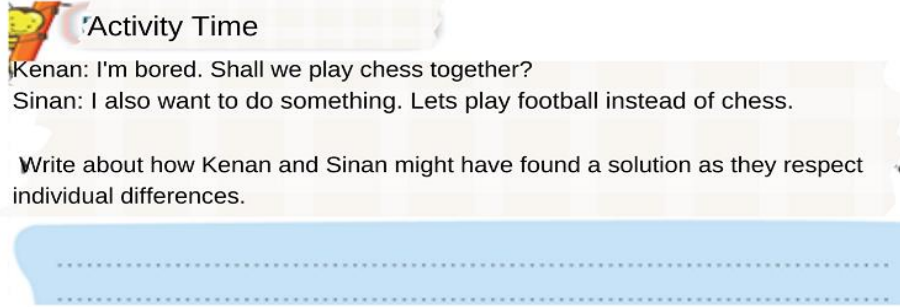
Mehmet's Home		Şeyma's Home	
resources	invoice amount	resources	invoice amount
electric	40	electric	55
water	40	water	60
combi boiler	70	combi boiler	98

- 1-) Which family has less electricity consumption?
- 2-) Which family has more water consumption?
- 3-) Why do you think Şeyma's bills may have been too high?

(The unit entitled Life at Home, M6E3)

The above example for the M6E3 encoded activity from the unit entitled *Life at Home* in the Life Studies second-grade coursebook is aimed at drawing conclusions, making evaluations, and reasoning about possible causes. Accordingly, the sample activity has been considered to be associated with developing critical thinking and problem-solving among 21st century skills.

Example activity for creative thinking skill:



Activity Time

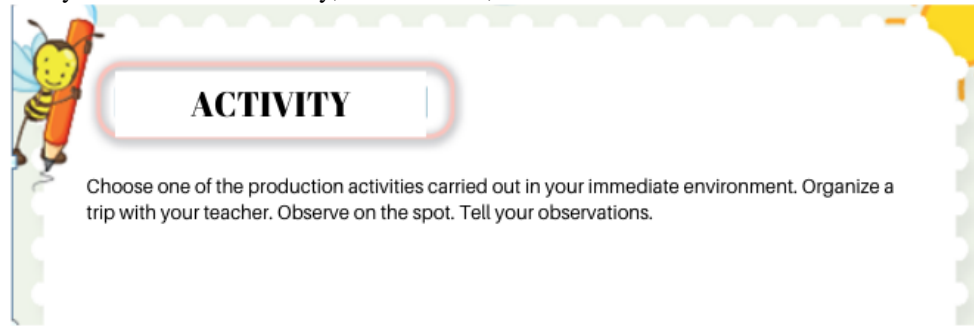
Kenan: I'm bored. Shall we play chess together?
Sinan: I also want to do something. Lets play football instead of chess.

Write about how Kenan and Sinan might have found a solution as they respect individual differences.

(The unit entitled Life in Our School, M2E1)

The example for the M2E1 encoded activity from the unit entitled *Life in Our School* in the second-grade Life Studies coursebook has an instruction with a prompting question to generate new and different ideas. The activity has been regarded to develop creative thinking, among 21st century skills.

Example activity for information literacy, collaboration, and communication skills:



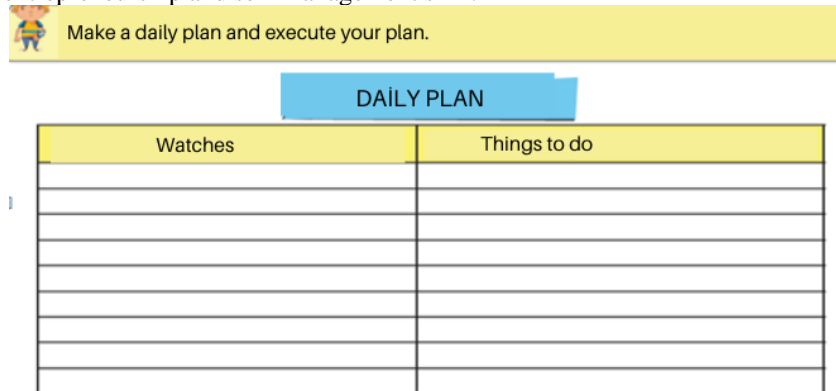
ACTIVITY

Choose one of the production activities carried out in your immediate environment. Organize a trip with your teacher. Observe on the spot. Tell your observations.

(The unit entitled Life Unit in Our Country M8E1)

The instructions included in the activity encoded M8E1 for the second grade Life Sciences unit “Life in Our Country” set an example for the processes of reaching information sources effectively, achieving together, and expressing thoughts and ideas. Accordingly, text-based activity has been regarded to improve information literacy, collaboration, and communication, which are among the 21st century skills.

Example activity for entrepreneurship and self-management skill:



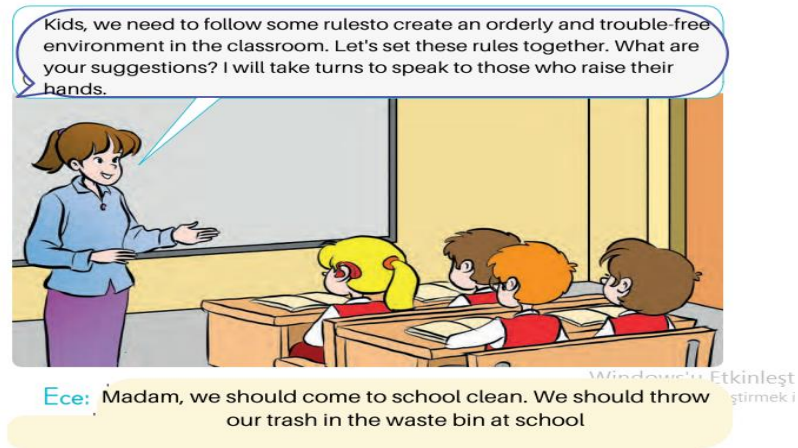
Make a daily plan and execute your plan.

DAILY PLAN	
Watches	Things to do

(The unit entitled Life in Our Home, M7E1)

The M5E1 encoded activity in the “Life at Home” unit of the third-grade Life Studies coursebook guides students to define tasks, develop short-term goals and implement them. Accordingly, the activity has been regarded to develop entrepreneurship and self-management, which are among the 21st century skills.

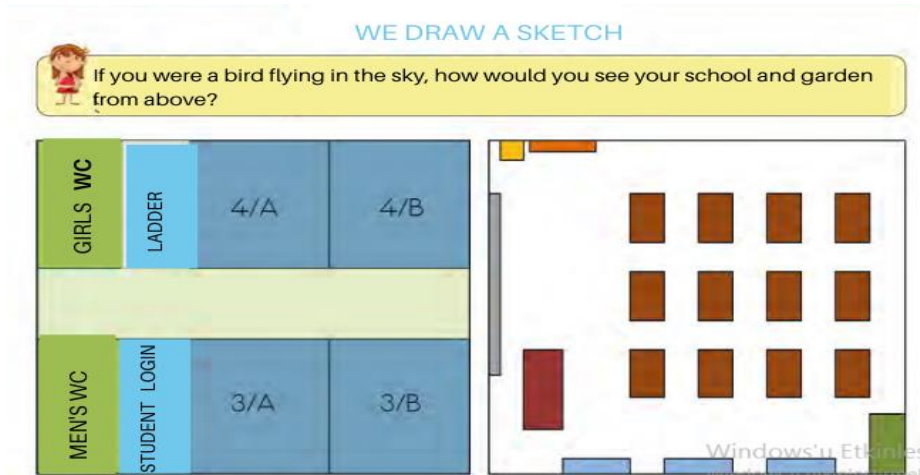
Example text for collaboration skill:



(The unit entitled Life in Our School, M11)

The M11 encoded text in the “Life in Our School” unit of the first grade Life Studies coursebook includes sample speeches for students to create classroom rules based on common ideas. Different children express different ideas and represent an example of acting together and working effectively and respectfully. Accordingly, the text has been regarded to develop the 21st century skill of collaboration.

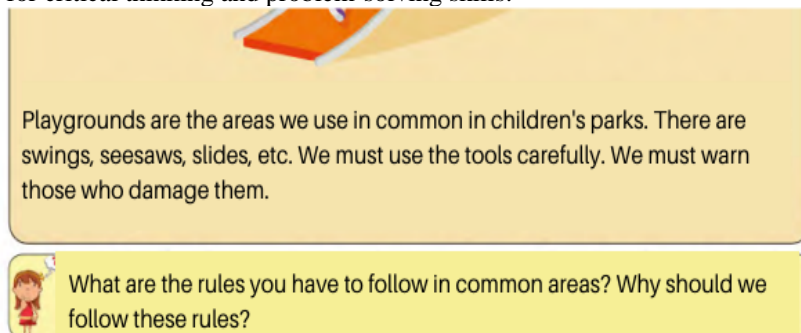
Example question for creative thinking skill:



(The unit entitled Life in Our School, M5S)

The M5S encoded question in the “Life in Our School” unit of the third-grade Life Studies coursebook is located at the beginning of the text. This question aims to reveal the different and original ideas of the students. Accordingly, the text-based question has been regarded to develop creative thinking, one of the 21st century skills.

Example question for critical thinking and problem-solving skills:



	3	M2E2 M4E3 M6E1	M2E4 M6E1 M7E1	M9E1 M9E2	M7E1	M7E1 M7E2
Life in Nature	1	M3E1		M2E4		
	2		M2E2 M7E3			
	3	M5E3				

Table 4 implied that 53 of the 308 activities in the first, second, and third-grade Life Studies workbooks are aimed at developing one or more 21st century skills while 255 of those are not. The analyses by grade levels indicated that the activities aimed at developing 21st century skills are mostly in the third grade, then first grade, and least in the second-grade workbooks, respectively. This is just like the findings obtained from the analysis of the coursebook practices. Accordingly, workbook activities aim at developing students’ *Learning and Innovation Skills* to the most and *Information, Media & Technology Skills* to the least. They also frequently aim at enhancing creative thinking, critical thinking, and problem-solving skills among P21’s framework for 21st century skills while initiative and self-direction skills are the least ones. The workbooks do not include activities to develop students’ information, communications, and technology literacy, media literacy, productivity and responsibility, and leadership and responsibility skills. Below are examples of the activities in the Life Studies workbooks aimed at improving students’ 21st century skills.

Example activity for creative thinking skill:

(The unit entitled Safe Life, M2E7)

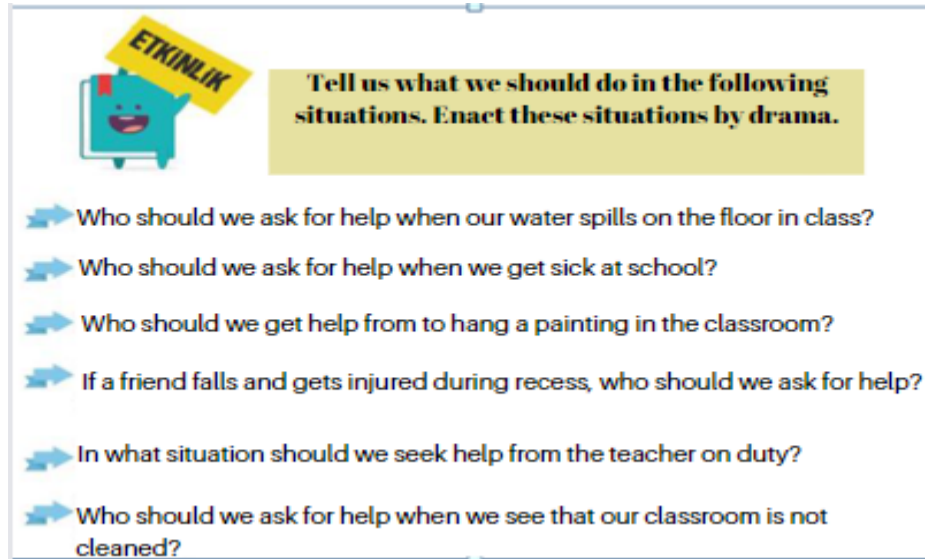
The above example for the M2E7 encoded activity from the unit entitled *Safe Life* in the first-grade Life Studies workbook promotes the development of creative thinking skills, one of the 21st century skills by asking individuals to create a new and original product.

Example activity for critical thinking skill:

(The unit entitled Life at Home, M8E1)

The example for the M8E1 encoded activity from the unit entitled *Life at Home* in the second-grade Life Studies workbook highlights the necessity of careful use of resources and materials. It has been considered to enhance critical thinking skill based on the requirements of creating arguments and questioning.

Example activity for communication and collaboration skills:



ETKİNLİK

Tell us what we should do in the following situations. Enact these situations by drama.

- ➡ Who should we ask for help when our water spills on the floor in class?
- ➡ Who should we ask for help when we get sick at school?
- ➡ Who should we get help from to hang a painting in the classroom?
- ➡ If a friend falls and gets injured during recess, who should we ask for help?
- ➡ In what situation should we seek help from the teacher on duty?
- ➡ Who should we ask for help when we see that our classroom is not cleaned?


(The unit entitled Life in Our School, M10E1)

While the M10E1 encoded text-based activity in the “Life in Our School” unit of the first grade Life Studies workbook aims to develop the communication skills of creating new ideas through various questions and sharing them in the appropriate language, it is aimed to indirectly improve the collaboration skill with the directive to ask for help when needed. Accordingly, the activity has been regarded to develop communication and collaboration, among the 21st century skills.

Example activity for communication, social and cross-cultural skills, flexibility and adaptability skills:

Activity

A student named Selma Muhammed from Somalia was newly registered in class 3A. Selma could not speak or understand Turkish. How can students in class 3A help Selma? Write your thoughts in the area below.



.....

.....

.....

(The unit entitled Life in Our Country, M7E1)

The M1 encoded activity of the unit entitled *Life in Our Country* in the third-grade Life Studies workbook is about being respectful to cultural differences, being flexible and communicating in a multicultural environment, and thus developing social cross-cultural skills, communication, flexibility, and adaptability skills.

DISCUSSION, CONCLUSIONS & RECOMMENDATIONS

According to the research findings, eighty percent of the learning outcomes in the 2018 LSC are aimed at developing one or more 21st century skills of the students. Moreover, it has been determined that the highest number of learning outcomes aiming at developing these skills are in the third-grade curriculum, and the least number of those are in the first-year curriculum. Based on the distribution of the learning outcomes by units, it has been concluded that the highest number of learning outcomes are in the “Life in Our School” unit and the least number of those are in the “Healthy Life” unit. In addition, there are learning outcomes aimed at improving students’ 21st century skills in all units at all grade levels. However, it can be claimed that the learning outcomes are mostly aimed at developing skills in the cluster of learning and innovation at all grade levels, and critical thinking and problem-solving are the most among those. That’s why, 46 out of 148 learning outcomes in the curriculum are aimed at improving students’ critical thinking and problem-solving skills. Similarly, critical thinking and problem-solving skills are found to be mostly included in 21st century skills in Science (Kalemkuş, 2021) and Biology (Atik & Yetkiner, 2021) curricula. Critical thinking and problem-solving have always had a significant impact on inventions depending on humane needs in history (Rotherdam & Willingham, 2009). Today the way individuals approach new situations is vital for solving problems (Bernhardt, 2015). The individual

makes interpretations, analyses, evaluations, inferences, explanations, and self-regulation in the process of developing critical thinking and problem-solving skills. This process first starts in the family environment and its development continues in a planned way thanks to the lessons taught at school (Facione, 1990). In this regard, it is valuable to frequently include the learning outcomes aiming at developing critical thinking and problem-solving skills in the curriculum.

The present study found that the learning outcomes for improving information, media, and technology skills of students are at the very least at all grade levels. Among the skills in this cluster, the curriculum mostly includes the learning outcome of information and communication and technology (ICT) literacy. However, there are no learning outcomes in improving media literacy skills. Media literacy has been regarded as a crucial 21st century skill that should be acquired both in business life and in daily life (Malter, 2011). The low reference to the aforementioned skill in the curriculum needs to be corrected as it is vital to be competent in using these technologies safely, critically, and appropriately to access information based on the increase in information, communications, and technology (ICT) in the digital world. This finding is also consistent with other research results. Bozkurt (2021) concluded that the social studies teacher training program is not rich in developing digital learning skills such as information, media, and technology literacy. Yüksel & Taeri (2021) and Erbil & Doğan (2019) emphasized that information, communications, and technology (ICT) skills should be integrated into Life Studies lessons more. Moreover, studies examining the curricula of different courses in terms of 21st century skills obtained similar results. Kurudayıoğlu & Soysal (2019) and Bal (2018) found that information and media literacy skills were the least included learning outcomes in the Turkish curriculum. Çelebi & Altuncu (2019), who examined the inclusion of 21st century skills in the ninth-grade English curriculum, also found that media literacy and information, communications, and technology (ICT) literacy were hardly included in the curriculum. Many theories have been put forward regarding the integration of information, communications, and technology into modern education procedures. They are commonly systematic. Systematically and sustainably developing students' information, communications, and technology skills is only possible with curricula (NCES, 2002). In this regard, it is expected that more learning outcomes will be included in the curricula to improve information, communications, and technology considering that it is easier to access instructional technologies in learning environments with technology-supported education projects (Uluyol & Eryılmaz, 2015). That's why these are among the most important skills that should be acquired by individuals in today's world.

The examination of the 2018 LSC learning outcomes in terms of developing *Life and Career Skills* indicated that this cluster is subsequent to *Learning and Innovation Skills*. It has been determined that the curriculum mostly includes learning outcomes aiming at developing leadership and responsibility, flexibility and adaptability skills among those. However, it was concluded that there are few learning outcomes in the curriculum to improve productivity and accountability skills. There are similar results in the relevant literature. Koç (2020) found that the 2018 LSC was insufficient in terms of developing life skills. Erbil & Doğan (2019), on the other hand, determined that the curriculum should be supported to develop such skills as leadership and responsibility, flexibility, and adaptability based on teachers' opinions. In addition, Akay & Çetin (2019), who examined the skills in the curriculum by years, compared 2015, 2017, and 2018 life studies curricula. As a result, it was yielded that there was no difference between the curricula in terms of skill development. It is important to start developing *Life and Career Skills* in early childhood and the developmental stages of individuals should be considered (Papachaisis, Goudas, Danish & Theodorakis, 2005, cited in Karakuş, 2021). It can be alleged that these skills should be given more space in the learning outcomes of the curriculum. It is also observed that the learning outcomes in the 2018 LSC are mostly aimed at improving the students' 21st century skills. However, it is not possible to say the same for the practices in the coursebooks and workbooks. Although the skills that are mostly included in the learning outcomes are also covered more by the practices, the very limited number of practices in the coursebooks and workbooks are aimed at developing these skills. Only 14% of the texts, 16% of the activities, and 8% of the questions in the coursebook are suitable for improving students' 21st century skills. Only 17% of the activities in the workbook are aimed at improving students' aforementioned skills.

While the cluster of learning and innovation skills are mostly included in the coursebooks, as in the learning outcomes, the skills in the clusters of information, media and technology, and life and career are given a very limited number of places. The examination of the practices in the coursebooks within the framework of learning and innovation skills pointed out that critical thinking and problem-solving skills are frequently used at all grade levels, and collaboration skill is the least. Regarding life and career skills, a limited number of practices aim to develop leadership and responsibility skills while texts and activities to improve productivity and accountability skills are not included in the coursebooks. These results are in line with other research results in the relevant literature. Demir & Özyurt (2021), who examined the questions in the social studies coursebooks in terms of 21st century skills, also concluded that there were no questions aimed at improving productivity and accountability skills. Öztürk (2009) determined that the first-grade Life Studies coursebooks and curriculum were weak to develop such skills as initiative and accountability. The initiative enables individuals to take risks, gain

experience and, in parallel, develop a sense of responsibility. It is known that people with an entrepreneurial character can make free choices in their own lives, make arrangements according to their conditions in parallel with the resources they have, and are prone to problem-solving with ideas fed by their imagination (Top, 2012). It was also revealed that entrepreneurship (initiative) in the 21st century should be included in curricula by including knowledge, skills, and attitudes (Curth, 2011). Moreover, problem-solving and adaptation to society and life have been regarded as vital skills (Yıldırım, 2021). Therefore, it is important to include more activities in the coursebooks and workbooks to develop students' *Life and Career Skills*. Research results indicated that the activities and questions aimed at developing information literacy skills are mostly included in the coursebooks among the information, media, and technology skills. However, these practices, which are included in the "Life in Our Country" and "Life in Nature" units, are also limited in number. In the same units, there are only three activities and a text for information, communications, and technology literacy skills. There are no practices in the coursebook regarding media literacy. In light of these findings, it can be asserted that the practices in the coursebooks are insufficient to develop students' skills in the cluster of information, communications, and technology. In a similar vein, Yüksel & Taneri (2020), who examined the Life Studies coursebooks by the key competencies similar to the 21st century skills, found that digital competences skills, including information literacy and media literacy, were at all grade levels.

Another research result is that the activities in the workbooks are mostly aimed at developing creative thinking and innovation skills among *Learning and Innovation Skills*. Additionally, it was determined that activities are frequently included in the workbooks to develop critical thinking and problem-solving skills. It was remarkable that critical thinking skill is the most widely used skill in the learning outcomes and coursebooks while it is creative thinking skill in the workbooks. A similar result was found by Kayhan, Sertel & Altun (2019) in the context of Turkish language curriculum and textbooks. However, they determined that there was a harmony between the learning outcomes in the curriculum and the activities in the textbooks in all skills exclusively creative thinking. In other words, learning outcomes and the practices in the coursebooks and workbooks aim at developing the same 21st century skill. However, the practices in the textbooks are limited in number, and insufficient for the development of most skills.

The study also concludes that information literacy skills, among the *Information, Media, and Technology* skills, are given very little space, and media literacy skills are not included at all in the workbook activities. However, education is of great importance in developing students' 21st century skills (Özyürt, 2020). Many countries have added 21st century skills to their curricula, as well as incorporating information literacy and information, communications, and technology literacy (ICT) skills (Adamson & Darling-Hammond, 2015). The studies examining how much information, media, and technology literacy is included in coursebooks and workbooks have underlined that these skills are not a privilege but a necessity in education, and have determined that educational materials are lacking in this regard (Aytaş & Kaplan, 2017; Tanrıku, 2014). It is a major shortcoming to neglect media literacy and information, communications, and technology literacy (ICT) skills in the workbooks.

It was also determined that the activities aiming at developing *Life and Career Skills* are also limited in the workbooks. In addition, activities for developing flexibility and adaptability, initiative and self-direction, productivity, and accountability skills are not included in all grade-level workbooks. It is believed that workbooks increase the quality of learning by providing a rich choice of activities in accompany by coursebooks (Gülüm & Çeltik, 2018). In this regard, it is highly important to review the workbooks and enrich them with activities for developing 21st century skills.

Recommendations

To sum up, this study concluded that the 2018 LSC learning outcomes and the texts and activities in the Life Studies coursebooks and workbooks are aimed at developing critical thinking and problem-solving among Learning and Innovation Skills to the most, and collaboration skills to the least. It was determined that they mainly aim to develop information literacy skills among the Information, Media, and Technology Skills, but the curriculum and textbooks do not include learning outcomes and activities to improve students' media literacy skills. It was found that the curriculum and textbooks intend to develop flexibility and adaptability skills to the most, and productivity and accountability skills to the least among Life and Career Skills. Based on the research results, it is suggested that the Life Studies curriculum should be updated and enriched in terms of developing 21st century skills that are never or rarely included in the available curriculum. In addition, 80% of the learning outcomes in the curriculum are aimed at improving students' 21st century skills while less than 20% of the practices in the coursebooks and workbooks are aimed at developing these. This overburdens the teachers, who are the implementers of the curriculum, in the development of students' 21st century skills. That's why, the practices in the coursebooks and workbooks are insufficient to develop students' 21st century skills. Therefore, it is recommended that teachers support students in the development of all 21st century skills by making conscious

planning, developing, and implementing activities related to the learning outcomes so that the curriculum can be carried out effectively in the specified context.

In this study, the Life Studies curriculum was analysed descriptively in the context of 21st century skills through document analysis of the coursebooks and workbooks. In this respect, the study can be considered as an analysis of the context in the development of students' 21st century skills. In future research, how curricula are handled in the context of developing students' 21st century skills during the learning and teaching process can be examined based on the analysis of teacher-student opinions, classroom observations, and diaries. Thus, concrete findings and suggestions regarding the implementation can be submitted to the opinions of researchers, policymakers, and practitioners.

Author (s) Contribution Rate

This study was carried out in collaboration. Corresponding author written first.

Conflicts of Interest

There is no potential conflict of interest in the study.

References

- Adamson, F. & Darling-Hammond, L. (2015). Policy path ways for twenty-first century skills. *Assessment and teaching of 21st century skills* (s.293-310). Springer, Dordrecht.
- Aktay, S., & Çetin, H. S. (2019). 2015, 2017 ve 2018 Hayat Bilgisi Dersi Öğretim Programları. *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi*, 20, 577-600.
- Alak, G. (2012). Program of social studies as a school subject based on the views of teachers [Unpublished master's thesis], Atatürk University.
- Ananiadou, K. & Claro, M. (2009). 21st century skills and competences for new millennium learner stoeced countries. OECD Education Working Papers Publishing.
- Atik, AD, & Yetkiner, A. (2021). Investigation on the 21st century skills of high school biology course curriculum. *Trakya Journal of Education*, 11 (2), 745-765. Doi: 10.24315/tred.707904
- Aykaç, N. (2011). Evaluation of the method sand techniques used in knowledge of life course teaching pro (Sinop case study) gram according to teacher opinions. *Kastamonu Journal of Education*, 19(1), 113-126.
- Aytaş, G., & Kaplan, K. (2017). Medya okuryazarlığı bağlamında yeni okuryazarlıklar. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 18(2), 291-310.
- Bal, M. (2018). Investigation on the 21st century skills of Turkish language course. *Turkish Studies*, 13(4), 49-64. DOI Number: <http://dx.doi.org/10.7827/TurkishStudies.12922>
- Bektaş, M., Sellüm, F. S., & Polat, D. (2019). An examination of 2018 life study lesson curriculum in terms of 21st century learning and innovation skills. *Sakarya University Journal of Education*, 9(1), 129-147. Doi: 10.19126/suje.537104
- Bernhardt, P. E. (2015). 21st century learning: Professional development in practice. *The Qualitative Report*, 20(1), 1- 19.
- Beers, S. Z. (2011). 21st century skills Preparing students for their future Retrieved from https://www.mheonline.com/mhmyath/pdf/21st_century_skills.pdf
- Bozkurt, F. (2021). Social studies teaching under graduate program in terms of 21st century skills evaluation. *Pamukkale University Faculty of Education Journal*, (51), 34-64. doi:10.9779/pauefd.688622
- Bybee, R. W. (2010). Advancing STEM education: A 2020 vision. *Technology and Engineering Teacher*, 70(1), 30-35.
- Cansoy, R. (2018). 21st century skills according to international frameworks and building them in the education system. *Journal of the Human and Social Sciences Researches*, 7(4), 3112-3134.
- Ceylan, M. (2019). Examining the changing roles of the school principles in the context of the 21st century skills from teachers' point of view [Unpublished master's thesis]. Trakya University Journal Of Social Sciences Institute.
- Cook, L. A., Bell, M. L., Nugent, J., & Smith, W. S. (2016). Global collaboration ENHANCES technology literacy. *Technology and Engineering Teacher*, 75(5), 20-25. Retrieved from <https://www.proquest.com/scholarly-journals/global-collaboration-enhances-technology-literacy/docview/1781334814/se-2?accountid=15958>
- Curth, A. (2011). Mapping of teachers' preparation for entrepreneurship education. http://www.ab.gov.tr/files/ardb/evt/1_avrupa_birligi/1_9_politikalar/1_9_4_egitim_politikasi/mapping_en.pdf adresinden 29.09.2020. tarihinde erişilmiştir.

- Çelebi, M., & Altuncu, N. (2019). *The place of 21 st century skills in English*. 6. International Multi discipliner Studies Congress Proceeding Book, 231-244.
- Çetin, M. & Çetin, G. (2021). A critical outlook on mone early childhood education curriculum in terms of 21st century skills. *Journal of Education for Life*, 35(1), 235-255.
- Dede, C. (2010). Comparing frame Works for 21st century skills. *21st century skills: Rethinking how students learn*, 20(2010), 51-76. doi.org/10.33308/26674874.2021351258
- Demir, A. Y., & Özyurt, M. (2021). Investigation of social studies curriculum and coursebooks in the context of 21st century skills. *Journal of Faculty Education (INUJFE)*, 22(2). DOI:10.17679/inuefd.867905
- Eker, C. & Kurum, M. (2021). “21. Yüzyıl Becerileri Açısından Hayat Bilgisi Dersi Öğretim Programının Değerlendirilmesi”, *International Social Mentality and Researcher Thinkers Journal*, 7(46): 1211-1221.
- Ekici, G., Abide, Ö. F., Canbolat, Y., ve Öztürk, A. (2017). Analysis of resources on 21st century skills. *Journal of Research in Education and Teaching*, 6(1), 1-12.
- EnGauge. (2003). EnGauge 21st Century Skills. Retrieved from https://www.cwasd.k12.wi.us/highschl/newsfile1062_1.pdf
- Erbil, BA, & Doğan, B. (2019). According to the teachers' opinions about needs for primary life studies curriculum. *Journal of Education The oryand Pratical Research*, 5 (1), 14-26.
- Fisser, P., & Thijs, A. (2015, March). *Integration of 21st century skills into the curriculum of primary and secondary education*. In Society for Information Technology & Teacher Education International Conference. Las Vegas, NV, United States. Retrieved from <http://site.aace.org>.
- Gelen, İ. (2017). P21- 21st century skill frameworks in curriculum and instruction (usa practices). *Journal of Interdisciplinary Educational Research*, 1(2), 15-29.
- Gelişli, Y., & Doğan, E. (2020). Reflection of 21st century skills in Turkish language and literature secondary education program. *TURAN-CSR International Scientific*, 12(47), 58-69. DOI:10.15189/1308-8041.
- Gülüm, K., ve Çeltik, D. (2014). Investigation and recommendations to improve the quality of workbook and textbook of life science education on the 2'nd class of primary school. *Sivas Cumhuriyet University Faculty of Letters Journal of Social Sciences*, 38(1), 46-58.
- Gündoğan, A. (2017). The analysis of 2015 life science program in terms of social skills. *Bayburt University Journal of Education*, 12(23), 437-456.
- Kalender, B. (2018). Investigation of the life science curricula in terms of convention on the rights of the children's the aims of education: a historical analysis [Unpublished master's thesis]. Gaziantep University Institute of Educational Sciences.
- Kalemkuş, J. (2021). Investigation of science curriculum learning out comes in terms of 21st century skills. *Anadolu Journal of Educational Sciences International*, 11(1), 63-87. DOI: 10.18039/ajesi.800552
- Karakuş, C. (2018). Analyzing the primary education Social Science program's (2018) achievements in terms of life skills. *Kocaeli University Journal of Education*, 4(1), 1-25. <https://doi.org/10.33400/kuje.824004>
- Kayhan, E., Altun, S., & Gürol, M. (2019). Evaluation of eighth grade Turkish curriculum (2018) in terms of century skills. *Adnan Menderes University Faculty of Education Journal of Educational Sciences*, 10(2), 20-35.
- Kivunja, C. (2015). Teaching students to learn and to work well with 21st century skills: Un packing the career and life skills domain of the new learning paradigm. *International Journal of Higher Education*, 4(1), 1-11.
- Kurudayıoğlu, M., & Soysal, T. (2019). An evaluation of 2018 Turkish course curriculum in terms of 21st century skills. *Ahi Evran University Journal Of Social Sciences Institute*, 5(2), 483-496. <https://doi.org/10.31592/aeusbed.621132>
- Koç, E. S., (2020). The status of life skills in life science course curricula. *Western Anatolia Journal of Educational Sciences*, 11(2), 605-624.
- Malter, M. A. M. (2011). *The status of Professional development in independent schools related to teaching 21st century skills*. [Unpublished doctoral dissertation], Widener University School of Human Service Professions.
- IowaCore. (2007). K-12 21st Century Skills. Retrieved from https://www.educateiowa.gov/sites/files/ed/documents/K12_21stCentSkills_0.pdf
- Lamb, S., Maire, Q., & Doecke, E. (2017). Key skills for the 21st Century: an evidence-based review. Retrieved from <https://education.nsw.gov.au/ourpriorities/innovate-for-the-future/education-for-a-changing-world/researchfindings/future-frontiers-analytical-report-key-skills-for-the-21st-century/KeySkills-for-the-21st-Century-Executive-Summary.pdf>
- MEB. (2018). Primary education 1st, 2nd and 3 rd grades life studies course curriculum and guide. Retrieved from: <https://bilimakademisi.org/wp-content/uploads/2017/02/Hayat-Bilgisi.pdf>

- Mesleki Yeterlilik Kurumu, (2016) Türkiye Yeterlilikler Çerçevesine Dair Tebliğ ve eki Türkiye Yeterlilikler Çerçevesi(Tebliğ No: 2015/1), Ankara.
- Miles, M., B. ve Huberman, A., M. (2016). *Qualitative data analysis*. Ankara: Pegem Academy.
- Nair, A. R.,& Ranjan, M. S. (2020). Life skills education: Origin and development of the concept. *International Journal of Life Skills Education*, 6(2).
- Narin, D. (2007). Teachers perception on life studies course teaching program in terms of achieving knowledge skill and values of citizenship [Unpublished master's thesis]. Anadolu University Journal Of Social Sciences Institute.
- NCES (2002). Technology in schools: suggestion, tools, and guidelines for assessing technology in elementary and secondary education. *Washington DC: U.S. Department of Education*.
- Nieveen N., Plomp T. (2018) Curricular and Implementation Challenges in Introducing Twenty-First Century Skills in Education. In: Care E.,Griffin P., Wilson M. (eds) Assessment and Teaching of 21st Century Skills. Educational Assessment in an Information Age. Springer, Cham. https://doi.org/10.1007/978-3-319-65368-6_15
- Öztürk, T. ve Kalafatçı, Ö. (2016). Öztürk, T. ve Kalafatçı, Ö. (2016). Evaluation of the applicability of primary school life studies curriculum in terms of teachers opinions. *Ihlara Journal of Educational Sciences*, 1(1), 58-74.
- Özyurt, M. (2020). Adaptation of 21st century skills teaching scale to Turkish culture: a validity-reliability study. *OPUS International Journal of Society Research*, 16(30), 2568-2594. DOI: 10.26466/opus.725042.
- Papacharisis, V.,Goudas, M., Danish, S. J., & Theodorakis, Y. (2005). The effectiveness of teaching a life skills program in a sport context. *Journal of Applied Sport Psychology*, 17(3), 247-254.
- Reich, R. (1992). *The Work of Nations: Preparing Ourselves for the 21st century Capitalism*. New York: Vintage Books.
- Rotherham, A. J. ve Willingham, D. (2009). 21st century skills: The challenge ahead. *Educational Leadership*, 67(1), 16-21.
- Silva, E. (2009). Measuring skills for 21st century learning. *Phi Delta Kappa*, 90(9), 630-634.
- Şahin, M. (2009). Evolution of the social studies curriculum from republic to present. *Journal of International Social Research*, 2(8).
- Tay, B., ve Baş, M. (2015). Comparison of 2009 and 2015 life science course curricula. *Bayburt University Journal Faculty of Education*, 10(2).
- Tanrıkulu, F. (2014). *Medya okuryazarlığı bağlamında çocuk dergileriyle zenginleştirilmiş Türkçe dersinin etkililiği : Bir eylem araştırması*. (Yayımlanmamış doktora tezi). Çanakkale Onsekiz Mart Üniversitesi, Çanakkale.
- Türkyılmaz, A. (2011). *Evaluation of Primary Life Sciences Course Curriculum According to Teachers' Views*[Unpublished master's thesis]. Balıkesir University Social Sciences Institute.
- Türk Sanayicileri ve İş adamları Derneği, (TÜSIAD). (2013). Türkiye'de Öğretmen Eğitimini Yeniden Yapılandırmak İçin Bir Model Önerisi. (Yayın No: TÜSIADT/2013-12/543). Retrieved from <https://tusiad.org/tr/yayinlar/raporlar/item/7344-okulda-universite-turkiyede-ogretmen-egitimini-yeniden-yapilandirmak-icin-bir-model-onerisi>
- Trilling, B.,& Fadel, C. (2009). 21st century skills: Learning for life in our times.
- Uğur, T. (2006). *Evaluation of 2005 1., 2 and 3rd grades elementary social studies curriculum based on teachers views* (the case of Uşak) [Unpublished master's thesis]. Afyon Kocatepe University Social Sciences Institute.
- Uluyol, Ç., ve Eryılmaz, S. (2015) Evaluation of FATİH project in the consideration of 21st century skills. *Gazi University Journal of Gazi Education Faculty*, 35(2), 209-229.
- Ütkür, N. (2018). Identifying the methods and activities used in life studies courses: an examination of post graduate theses. *Celal Bayar University Journal of Social Sciences*, 16(1), 101-122.
- Yaşaroğlu, C. (2018). Values in curricula: A case of life science course. *Journal of Social Sciences of Mus Alparslan University*, 6(5), 725-733. DOI:10.1850/anemone.394551
- Yıldırım, A., ve Şimşek, H. (2008). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri (6. Baskı)*. Ankara: Seçkin Yayıncılık. <https://www.journals.uchicago.edu/doi/abs/10.1086/462392?journalCode=esj>
- Yıldırım, G. (2015). Investigation elementary teachers' opinions of activities in the primary education life science class student workbooks. [Unpublished master's thesis]. Atatürk University Education Sciences Institute.
- Yüksel, S.,&Taneri, A. (2020). Examination of life science text books in terms of key competencies. *Gazi Journal of Education Sciences*, 6(2), 185-209. DOI: 10.30855/gjes.2020.06.02.002.
- 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.

- Williams, Cherise, (2020). "Levels of feedback in preparation for a student-led conferencing event:a case study of elementary students' experiences" *Theses and Dissertations—Curriculum and Instruction*. 29. https://uknowledge.uky.edu/edc_etds/29
- Willingham, D., ve Rotherham, A. J. (2009). 21st Century Skills: The Challenges Ahead: Why the 21st century skills movement could falter and key considerations that might strengthen it. *Educational Leadership*, 67(1), 16.