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ANALYSIS OF PISA SURVEY'S DIGITAL READING TEXTS

Abstract

Preparing the learners for digital life involves incorporating technology into their education, including digital reading education. The PISA exam incorporates interactive and digital reading content, increasing awareness of digital reading in the future. The study aimed to assess PISA digital reading questions in the context of emerging literacy skills. The research conducted a case study to analyze PISA digital reading questions, understand content and evaluation process, and determine student skills for digital reading. The results showed that 33% of the questions assessed were related to information availability, 24% to synthesizing and critical evaluation, and 19% to verification skills. It is important to incorporate new literacy skills while using digital reading tools to prepare students for foreign tests and improve online comprehension processes. The researchers used a qualitative research approach that examines written materials to obtain the data needed without interviews or observations.

Keywords: Digital reading, new literacy skills, PISA, reading comprehension, reading literacy

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АНАЛИЗ ТЕКСТОВ ДЛЯ ЦИФРОВОГО ЧТЕНИЯ В ИССЛЕДОВАНИИ PISA

Аннотация

Подготовка учащихся к цифровой жизни предполагает включение технологий в их образование, включая обучение цифровому чтению. Экзамен PISA включает в себя контент для интерактивного и цифрового чтения, что повышает осведомленность о цифровом чтении в будущем. Целью исследования было оценить вопросы PISA по цифровому чтению в контексте развития навыков грамотности. В ходе исследования был проведен практический анализ вопросов PISA по цифровому чтению, понимание содержания и процесса оценки, а также определение навыков учащихся по цифровому чтению. Результаты показали, что 33% оцененных вопросов были связаны с доступностью информации, 24% - с синтезом и критической оценкой и 19% - с навыками проверки. Важно внедрять новые навыки грамотности при использовании инструментов цифрового чтения, чтобы подготовить учащихся к иностранным тестам и улучшить процессы понимания онлайн. Исследователи использовали качественный исследовательский подход, который исследует письменные материалы для получения необходимых данных без интервью или наблюдений.

Ключевые слова: Цифровое чтение, новые навыки грамотности, PISA, понимание прочитанного, грамотность чтения.

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PISA ЗЕРТТЕУІНДЕГІ ЦИФРЛІК ОҚУҒА АРНАЛҒАН МӘТІНДЕРДІ ТАЛДАУ

Аңдатпа

Оқушыларды цифрлық өмірге дайындау олардың біліміне технологияны, соның ішінде цифрлық оқуды енгізуді қамтиды. PISA емтиханы болашақта цифрлық оқу туралы ақпараттануды арттыра отырып, интерактивті және цифрлық оқу мазмұнын біріктіреді. Зерттеу PISA сандық оқылым сұрақтарын жаңа сауаттылық дағдылары контекстінде бағалауға бағытталған. Зерттеу PISA сандық оқу сұрақтарын талдау, мазмұны мен бағалау процесін түсіну және оқушылардың цифрлық оқу дағдыларын анықтау үшін кейс-стади жүргізді. Нәтижелер бағаланған сұрақтардың 33%-ы

ақпараттың қолжетімділігіне, 24%-ы синтездеу мен сыни бағалауға, 19%-ы тексеру дағдыларына қатысты екенін көрсетті. Студенттерді шетелдік тесттерге дайындау және онлайн түсіну процестерін жақсарту үшін цифрлық оқу құралдарын пайдалану кезінде жаңа сауаттылық дағдыларын енгізу маңызды. Зерттеушілер сұхбат немесе бақылаусыз тиісті деректерді алу үшін жазбаша материалдарды зерттейтін сапалық зерттеу әдісін қолданған.

Түйін сөздер: Сандық оқу, жаңа сауаттылық дағдылары, PISA, түсініп оқу, оқу сауаттылығы

Basic provisions. The internet has led to a rise in interest in electronic media, including digital reading, which was included in the PISA exam in 2009. The exam assesses reading skills on three levels: text, reader's attitude, and intended use. In 2015, it was administered electronically in 57 countries. Reading comprehension is affected by factors like vocabulary, interest, motivation, prior knowledge, and purpose. Factors related to the reader include vocabulary, interest, motivation, and purpose. Factors related to the text include type, level of expression, structure, language, and physical aspects. PISA emphasizes the importance of understanding texts and placing more emphasis on content. The evaluation process of digital reading is based on cognitive processes, including accessing information, integrating inferences, assessing and reflecting, and considering the structure and content of texts.

The internet has boosted interest in digital reading, which was included in the PISA exam in 2009. The exam assesses reading skills on text, reader's attitude, and intended use. PISA emphasizes understanding texts and content, with evaluation based on cognitive processes.

The scope of this study includes three digital reading exams and their content, which were employed in the field of PISA reading skills in the 15-year-old age group in 2018. The examined questions came from <https://www.oecd.org/pisa/>. Also PISA digital reading assessment process is discussed.

The main idea of the research is that the researchers analyse the texts Chicken forum, Cow's milk and Rapa Nui and found new literacy skills keywords forms appears in learners after using texts of PISA exam.

Kazakhstani students face challenges in acquiring critical skills like information availability, synthesizing, and verification. The country's scores are 60% higher than the average, focusing on digital competence, reading culture, communication, science and technology, multiliteracy, and technology concepts. PISA 2018 evaluations reveal children struggle with reading comprehension, particularly higher-order thinking skills.

As a result of the research digital reading, as per PISA examinations, enhances traditional literacy by enhancing information access, searching, synthesizing, verifying, and critical evaluation skills, necessitating teacher and student training for new reading skills.

Introduction. The spread of the internet has led to an increase in interest in electronic media and contact with screens. This has led to the formation of new forms of communication, such as digital reading, which was included in the PISA exam in 2009. PISA examines reading skills on three levels: the text, the reader's attitude to the text, and the intended use of the text. In 2015, the exam was administered electronically in addition to printed reading in 57 countries. Reading comprehension and answering questions are expected of individuals. [1,p.28]

Reading comprehension is affected by a number of factors, including the reader, the material being read, and the environment in which the text is given. When a reader reads a text, he or she integrates existing knowledge with the text's ideas. It reaches the meanings of the sentences, the meaning of the paragraphs from the sentences, and the meaning of the subject from the paragraphs based on the meanings of the words in the text. Reading comprehension is creating a new idea by comparing and synthesizing the reader's prior knowledge with what they have learned from the texts (Akyol, 2006). Reading comprehension is a two-way street between the reader and the text. Factors related to the reader include vocabulary, interest, motivation, prior knowledge, and purpose. Factors related to the text include type, level of expression, structure, language, and physical aspects.

Studies emphasize that children should understand the texts they read and that more emphasis should be placed on the content (Hu & Nation, 2000; Neuman, 2001). The process of reading or

digital reading is based on the individual's talents and techniques. Before, during, and after reading, individuals organize ahead of time, examine the content, and use prior knowledge. Different abilities and strategies are necessary during the digital reading process, such as using a search engine or website to generate reading intent, selecting an appropriate keyword, and examining the links in the search results. PISA emphasizes major concerns in the evaluation process of print and digital reading. The PISA digital reading evaluation is based on the cognitive processes of accessing and obtaining information, integrating and producing inferences, assessing and reflecting, and considering the structure and content of texts in relation to both personal experience and external processes. [2,p.403]

Critical reading and assessment are needed for digital media, as it is not enough for readers to decide on the information that will be beneficial and relevant. The cognitive processes of the exam are depicted in Table 1.

Table 1. PISA Digital Reading Assessment Process

| Access and Retrieve | Integrate and Generate Inferences/ Understand | Evaluate and Reflect |
|---|--|---|
| Access and retrieve information with a text | Represent literal information -Reflecting the literal meaning, directly or indirectly expressing the information in the question using other words. -Matching the paragraphs in the questions in their phrases, as close to the individual's literal meaning as possible. | Assess quality and credibility -Evaluating if information in a text is legitimate, current, accurate, unbiased, and reliable, among other things. Readers must identify and assess the source of the information, as well as the text's content and form, or how the author presents the information. |
| Search for and select relevant text. | Integrate and generate inferences -Integrating information between phrases or even entire chapters to go beyond its literal meaning. -Tasks in which the learner must generate the primary idea or a summary or title for a passage. Integrate and generate conclusions from many sources. Bringing together bits of information from two or more texts. | Reflect on content and form -Evaluating the writing form to determine how the author expresses their aim and/or point of view. To compare, contrast, or hypothesize alternative perspectives or opinions, these things frequently need the student to reflect on their own experience and knowledge. Detect and handle conflict -Determining whether several texts corroborate or contradict each other, and deciding how to resolve conflict when they do. -Asking pupils to determine if two authors agree on an issue's perspective or to identify each author's stance. |

When the categories based on the PISA digital reading assessment in Table 1 are examined, it is seen that the skills overlap with the “New Literacy skills” revealed by Leu et al. (2004). New literacy is a skill formed by the convergence of several literacies. (information literacy, computer literacy, digital literacy, media literacy, etc.). It is feasible to draw the lines between various types of literacy and see how many of them are similar. The concept of new is utilized to convey the idea that technology and age are subject to change. What is novel now may be replaced by a different thought tomorrow. (Cope & Kalantzis, 1999; Leu, 2000). New literacy skills are employed to fulfill individuals' rising demands, address their issues, and encourage them to use technology consciously. Individuals with new literacy skills will be able to obtain information, search for it, synthesize it, verify it, and evaluate it critically. New literacy skills instruct pupils on the types of abilities they should employ when using the internet. Accessing information, searching for information, synthesizing, validating, and making critical assessments are the five main abilities of new literacy. [3, p.78]

According to studies, children should grasp the texts they read, and greater focus should be placed on the content. (Hu&Nation, 2000; Neuman, 2001). The ability to acquire information is a talent that requires pupils to make judgments based on their own requirements in order to properly use the internet's information stack. (Kuiper & Volman, 2008). It is essential for students to understand what they are seeking and to find the correct information in online environments. They must be able to do information searches, evaluate search results, and choose which information is more significant. They must also be able to verify information before consulting with someone or reviewing or comparing previous material. Critical thinking is also necessary to judge reliability and pick which criteria to apply. [4,p.102]

PISA questions are used to evaluate digital reading skills, as they focus on abilities that can be employed in the new age. Data from our country shows that 68% of teenagers aged 14 to 18 play video games, 70% use the internet for schoolwork, 55% watch videos, and 65% participate in social media networks. (Research of the Public Opinion Institute commissioned by Internews, 2019)

It is possible to prepare students for digital reading content at a young age by incorporating new literacy skills into early literacy and the curriculum. Primary school Kazakh text books are not prepared for this subject, and so the subject's material should be enriched and developed. It has been found that content that overlaps with the new literacy skills is incorporated into many countries' mother tongue curriculum. Information and communication technologies, digital literacy, and media literacy are closely related to new literacy skills in various countries' mother tongue teaching programs. It can be seen that they give way to skills that are blended with traditional education. In Australia, for example, information and communication technology (ICT) skills are required as part of the program. Canada promotes the importance of information and communication technology in its mother tongue curriculum, providing tools to enrich and expand teachers' teaching practices while also supporting students' learning. Students should be aware of how to use the internet efficiently, ethically, and safely.

Although many students understand how to use a computer and the internet, many have deficits in how they use this knowledge, namely in reading and comprehension. The disparities between printed and digital texts have aided in the development of these shortcomings (OECD, 2011). The study's goal is to assess PISA digital reading questions in the context of emerging literacy skills. It is expected to guide instructors, students, and other stakeholders in the educational process on how to define, content, and evaluate digital reading. Researchers have found that comprehension activities in the writings on the internet are lower and readers detach themselves from the inner meaning.

Materials and Methods. Document review is a qualitative research approach that examines written materials to obtain the data needed without interviews or observations.

The scope of this study includes three digital reading exams and their content, which were employed in the field of PISA reading skills in the 15-year-old age group in 2018. The examined questions came from <https://www.oecd.org/pisa/>

The researcher developed a "New Literacy Skills Keywords Form" to investigate new literacy abilities such as accessing information, research, synthesizing verification, and critical assessment. The form was based on the data from the determined scenario and content characteristics. As a result of these examinations, the "New Literacy Skills Keywords Form" developed by the researcher was created. The information in the form is presented in Table 2.

Table 2. New Literacy Skills Keywords Form

| Skills | Keywords |
|-----------------------|---|
| Accessing information | Decision-making Creating a reading purpose Have internet skills Informational website structures |

| | |
|---------------------|---|
| | Asking questions |
| Searching | Using a search engine Informational website structures Monitoring the website Navigating Using keywords |
| Synthesizing | Collecting facts and ideas from multiple sites and expressing them in their own words Determining important ideas Making inferences |
| Verification | Sharing Communication/collaboration Evaluating information sources |
| Critical evaluation | Determining the reliability of information |

Descriptive analysis was used to summarize and interpret data gathered through qualitative data gathering procedures, using codes determined in the context of new literacy abilities.

Validity and Reliability

The literature was used to create an assessment form for the validity of the research. Two academicians and two teachers were consulted to ensure the reliability and validity of the data collection tool form. Expert opinion was sought to determine if the PISA questions used in the research and the keywords provided matched. The experts and researcher agreed on 18 questions, and the reliability was calculated using Miles and Huberman's formula. When the reliability rating is greater than 80%, the analysis is considered reliable. [5,p.56]

Digital Text Dimensions PISA considers digital texts to be synonymous with hypertext, which is writing that includes navigation tools and features that allow the reader to navigate from one page or website to another. PISA categorizes digital text properties as text display, text shape and type, navigation tools, and features. The text is presented in two ways: single authored and message based. Single-author texts require the reader to immediately complete the act of comprehension. Message-based texts are those with which readers interact. (e.g., replying to an email message). Mixed texts are those that contain both single-author and message-based writing. The shape of the text, which falls into four categories: fluent, autonomous, mixed, and multiple, is the second aspect of digital texts. Fluent, independent, and mixed questions are those that are concentrated on a single digital page. However, the majority of multiple-choice questions are also based on groupings of fluent, independent, and mixed material. While narrative texts are included in the scope of the text type, which is in the third row of the text categorization, description, explanation, discussion, and interactive text types are not. Navigation tools and features are important differentiating aspects of digital texts. Navigation tools assist readers in navigating through, around, and between texts. Although there are similarities in print, such as a table of contents, headings, and page numbers, many navigation tools and characteristics are digital-specific and are included in the definition of hypertext. The reader can go from one page to another via hypertext links. Readers can access scrollbars to move up and down a page, tabs for separate websites, and lists of hypertext links shown as click-to-open menus with the help of navigation tools.

PISA Digital Reading Difficulty Levels

PISA digital reading difficulty levels are divided into five categories. These levels are used to differentiate the questions (<https://gpseducation.oecd.org/>). PISA digital reading difficulty levels are divided into five categories: Level 5 (scores above 626 points), Level 4 (scores greater than 553 but less than or equal to 626 points), and Level 6 (scores greater than 553 but less than or equal to 626 points). 22% of students in participating OECD nations qualify at Level 4 or higher. Students at level 3 (scores greater than 480 but less than or equal to 553) can do moderately complicated digital readout assignments. Level 2 (scores greater than 407 but less than or equal to 480) can navigate using navigation tools and features. Level 2 and lower proficiency (scores less than 407 points) can access information on a basic level in a hypertext. Competencies assessed at these levels were used as the foundation for assessing digital reading questions. [6,p.12]

Results and Discussion. Within the scope of the research, an answer to the question "What do the PISA digital reading questions include in the context of new literacy skills?" was sought. Three

different texts and text-related questions were studied in the context of new literacy skills for this goal.

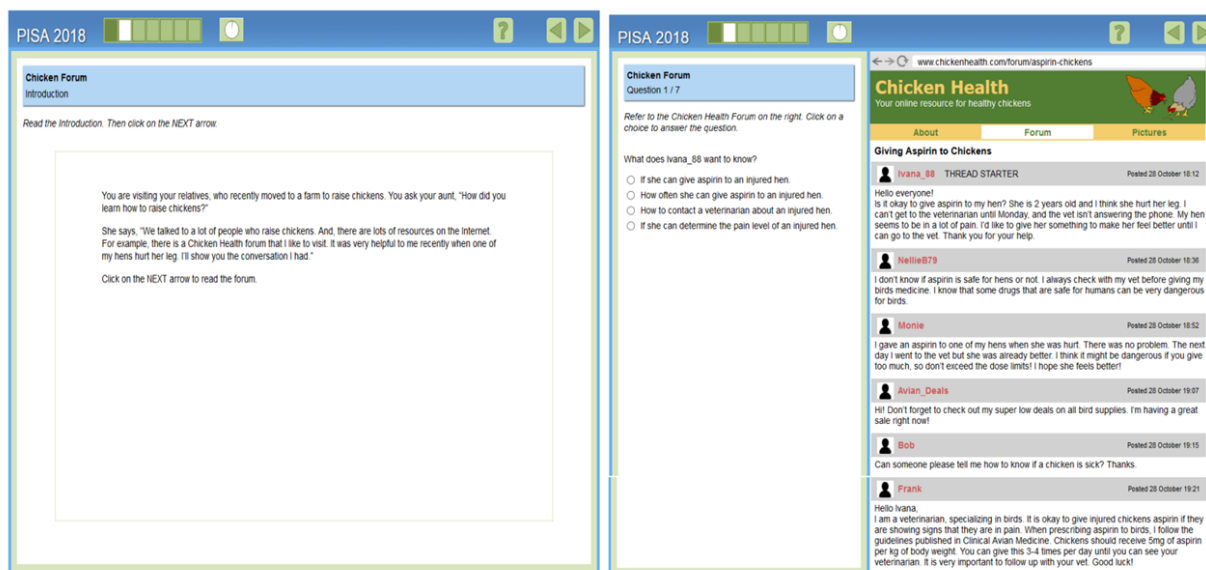


Figure 1. Analysis of the First Text: Chicken Forum (PISA explained questions, Chicken Forum, English Version, URL) (1)

In this unit's scenario, the student meets relatives who raise chickens, and the aunt suggests an internet forum as a beneficial resource. Posts on the forum contain numerous texts because they were written at different times by different authors. Although the text is brief, it is vital to consider numerous views when answering questions and to examine the content of the postings in order to judge the reliability of the information contained in the text.

The student must understand the literal meaning of the posts in the Chicken Forum in order to get the correct answer. This skill corresponds to one of the new literacy abilities, the ability to obtain information. It allows pupils to make judgments based on their individual requirements among the vast amount of information available on the internet.

The chicken forum tests students' ability to synthesize new literacy abilities by gathering and analyzing information from numerous sources. In the second, fifth, and seventh questions, students must evaluate the facts in the post and make an assumption. They must also gather information from Ikey_88 and Ferdi's posts and interpret it.

The Chicken Forum requires students to distinguish reliable material in the third and sixth questions. In the third question, students must pre-evaluate the expected information and differentiate it from the primary issue. In the sixth question, students must rate the postings' dependability and provide reasons. Table 3 shows that the majority of queries in the chicken forum are at level 2 or lower, with students able to navigate utilizing navigation tools and features. [7,p.78]

Table 3. Analysis of the Text of Chicken Forum

| Question Number | Cognitive Process | Response Format | Difficulty | Compatible New Literacy Skill |
|-----------------|-----------------------------------|-----------------|------------|-------------------------------|
| 1 | Represent literal meaning | Multiple choice | 1b-328 | Accessing information |
| 2 | Integrate and generate inferences | Multiple choice | 1a-357 | Synthesizing |
| 3 | Reflect on content and form | Multiple choice | 2-458 | Critical evaluation |
| 4 | Represent literal meaning | Multiple choice | 1b-328 | Accessing |

| | | | | |
|---|--|-----------------|--------|---------------------|
| | | | | information |
| 5 | Integrate and generate inferen-ces | Multiple choice | 1a-347 | Synthesizing |
| 6 | Access quality and credibility | Open response | 2-409 | Critical evaluation |
| 7 | Integrate and generate inferen-ces across multiple sources | Open response | 2-466 | Synthesizing |

The "cow milk" unit is designed to challenge students of varying skill levels to interpret information from different sources. The text is made up of two web pages, one from a dairy company and one from a health website. The learner is initially presented with a single web page and questions that focus solely on its content. After viewing the second web page, the student responds to questions that challenge them to integrate the material from both web pages. The multitext technique was used to develop this model, allowing students of varying skill levels to exert effort and proficiency in at least some aspects of the course.

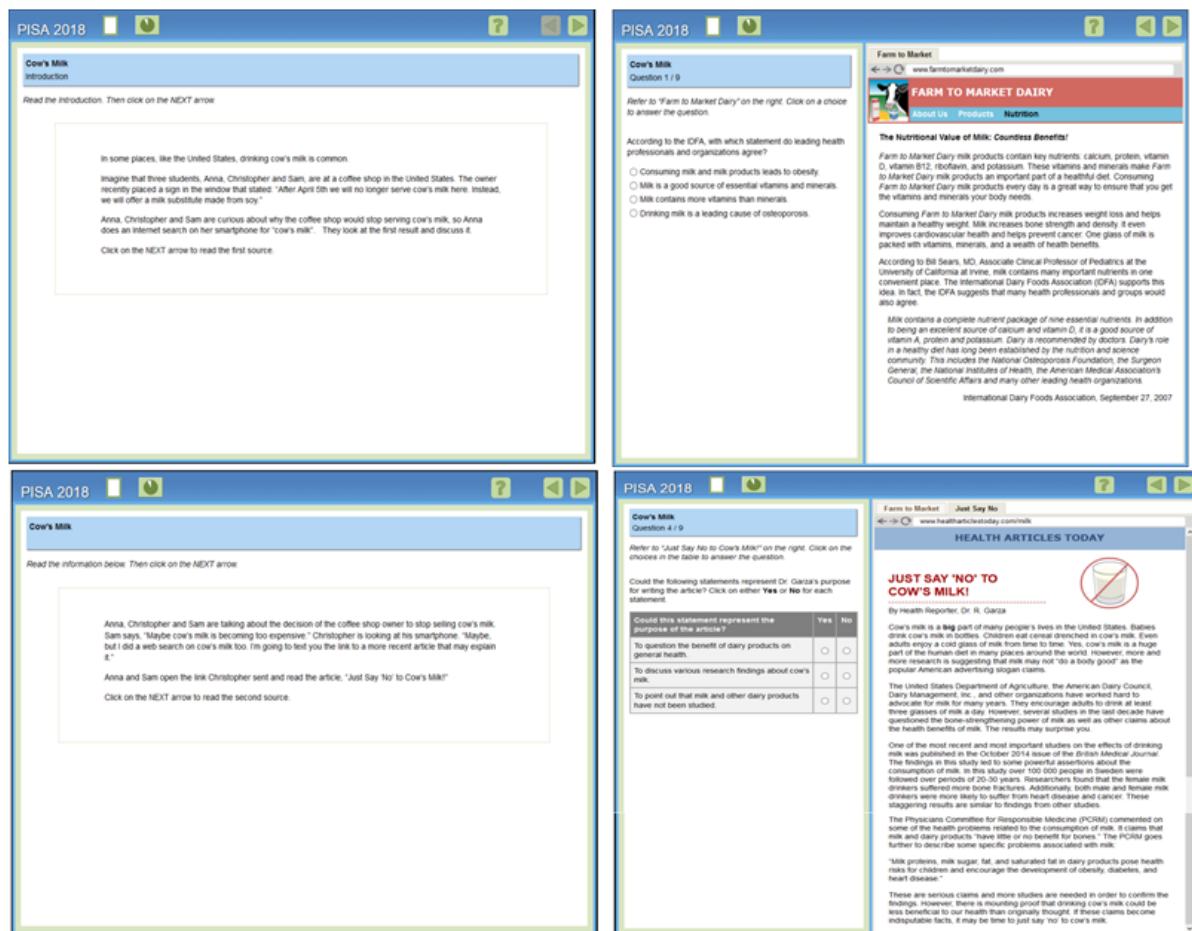


Figure 2. Analysis of the Second Text: Cow's Milk (PISA explained questions, Cow's Milk, English Version, URL, 2).

The cow's milk scenario requires students to identify and specify one of the study findings in Dr. Garza's article, navigate using tools, choose and sort information, determine the major purpose of the text, and determine if each row of the table is appropriate for Dr. Garza's objective in authoring the paper. The critical evaluation skill, one of the new literacy abilities, overlaps based on

these assumptions. The root of the question in the first question is related to the sentence on the web page introducing the citation to the IDFA.

The most important details in this text are the aims, levels, and targeted new literacy skills of the questions. In question 5, the student must integrate the information in the texts and determine whether the assertions in the table represent the facts or the viewpoints offered on the web pages. In question 6, the student should be able to identify the key subject on which the authors disagree and comprehend how each online page depicts the role of milk in a typical diet. In question 7, the student should compare multiple texts with each other and assess if they are correct or contradictory to one another. The aims, levels, and targeted new literacy skills of the questions are given in Table 4. [8,p.61]

Table 4. analysis of the Text of Cow's Milk

| Question Number | Cognitive Process | Response Format | Difficulty | Compatible New Literacy Skill |
|-----------------|---|-----------------|------------|-------------------------------|
| 1 | Represent literal meaning | Multiple choice | 1b-323 | Accessing information |
| 2 | Reflect on content and form | Multiple choice | 2-452 | Critical evaluation |
| 3 | Reflect on content and form | Multiple choice | 3-539 | Critical evaluation |
| 4 | Represent literal meaning | Open response | 3-398 | Accessing information |
| 5 | Integrate and generate inferences across multiple sources | Multiple choice | 5-662 | Synthesizing |
| 6 | Detect and handle conflict | Multiple choice | 1a-406 | Verification |
| 7 | Detect and handle conflict | Open response | 3-506 | Verification |

The Rapa Nui unit has three texts: a blog, a book review, and science news. When blog post comment sections reflect multiple writers, they are categorized as multisource text, whereas book reviews and science news pieces are classified as single text centered on a single page. The Rapa Nui unit is of medium-to-high difficulty. The levels of the questions in this text are clearly 3 and above.

PISA 2018

Rapa Nui
Question 1 / 7

Read the Introduction. Then click on the NEXT arrow.

Imagine that a local library is hosting a lecture next week. The lecture will be given by a professor from a nearby university. She will discuss her field work on the island of Rapa Nui in the Pacific Ocean, over 3000 kilometres east of Chile.

Your history class will attend the lecture. Your teacher asks you to research the history of Rapa Nui so that you will know something about it before you attend the lecture.

The first source you will read is a blog entry written by the professor while she was living on Rapa Nui.

Click on the NEXT arrow to read the blog.

Blog
www.theprofessorblog.com/Fieldwork/RapaNui

The Professor's Blog
Posted May 23, 11:22 a.m.

As I look out of my window this morning, I see the landscape I have learned to love here on Rapa Nui, which is known in some places by the name Easter Island. The grasses and shrubs are green, the sky is blue, and the old, now extinct volcanoes rise up in the background.

I am a bit sad knowing that this is my last week on the island. I have finished my field work and will be returning home. Later today, I will take a walk through the hills and say good-bye to the moai that I have been studying for the past nine months. Here is a picture of some of these massive statues.

PISA 2018

Rapa Nui
Question 2 / 7

Refer to the Professor's Blog on the right. Type your answer to the question.

In the last paragraph of the blog, the professor writes: "Another mystery remained..."

To what mystery does she refer?

Blog
www.theprofessorblog.com/Fieldwork/RapaNui

The Professor's Blog
Posted May 23, 11:22 a.m.

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PISA 2018

Rapa Nui
Question 3 / 7

Refer to the Review of Collapse on the right. Click on the choice in the table to answer the question.

Listed below are statements from the Review of Collapse. Are these statements facts or opinions? Click on either **Fact** or **Opinion** for each statement.

| Is the statement a fact or an opinion? | Fact | Opinion |
|--|-----------------------|-----------------------|
| In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment. | <input type="radio"/> | <input type="radio"/> |
| One of the most disturbing examples in the book is Rapa Nui. | <input type="radio"/> | <input type="radio"/> |
| They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island. | <input type="radio"/> | <input type="radio"/> |
| When the first Europeans landed on Easter Island in 1722, the moai were still there, but the trees were gone. | <input type="radio"/> | <input type="radio"/> |
| The book is written well and deserves to be read by anyone who is concerned about the environment. | <input type="radio"/> | <input type="radio"/> |

Blog
www.academicbookreviews.com/Collapse

Review of Collapse

Jared Diamond's new book, *Collapse*, is a clear warning about the consequences of damaging our environment. In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment. One of the most disturbing examples in the book is Rapa Nui.

According to the author, Rapa Nui was settled by Polynesian settlers after 700 CE. They developed a thriving society of perhaps 15,000 people. They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island. When the first Europeans landed on Rapa Nui in 1722, the moai were still there, but the trees were gone. The population was down to a few thousand people who were struggling to survive. Mr. Diamond writes that the people of Rapa Nui cleared the land for farming and other purposes and that they over-hunted the numerous species of sea and land birds that had lived on the island. He speculates that the dwindling natural resources led to civil wars and the collapse of Rapa Nui's society.

The lesson of this wonderful but frightening book is that in the past, humans made the choice to destroy their environment by cutting down all the trees and hunting animal species to extinction. Optimistically, the author points out, we can choose **not** to make the same mistakes today. The book is written well and deserves to be read by anyone who is concerned about the environment.

PISA 2018

Rapa Nui
Question 3 / 7

Refer to all three sources on the right by clicking on each of the tabs.

Drag and drop the causes and the effect they have in common, into the correct places in the table about the theories.

The Theories

| Cause | Effect | Supporters of the Theory |
|--|---|---|
| The moai were carved in the same quarry. | Polynesian rats ate tree seeds and so a second set of new trees could grow. | Jared Diamond |
| The large trees disappeared from Rapa Nui. | Rapa Nui residents hunted natural resources to move the moai. | Carl Lipo and Terry Hunt |
| | | Deforestation led Lipo and Hunt to bring Polynesian rats to Rapa Nui. |
| | | Humans cut down trees to clear land for agriculture and other purposes. |

Blog
www.academicbookreviews.com/Collapse

Review of Collapse

Jared Diamond's new book, *Collapse*, is a clear warning about the consequences of damaging our environment. In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment. One of the most disturbing examples in the book is Rapa Nui.

According to the author, Rapa Nui was settled by Polynesian settlers after 700 CE. They developed a thriving society of perhaps 15,000 people. They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island. When the first Europeans landed on Rapa Nui in 1722, the moai were still there, but the trees were gone. The population was down to a few thousand people who were struggling to survive. Mr. Diamond writes that the people of Rapa Nui cleared the land for farming and other purposes and that they over-hunted the numerous species of sea and land birds that had lived on the island. He speculates that the dwindling natural resources led to civil wars and the collapse of Rapa Nui's society.

The lesson of this wonderful but frightening book is that in the past, humans made the choice to destroy their environment by cutting down all the trees and hunting animal species to extinction. Optimistically, the author points out, we can choose **not** to make the same mistakes today. The book is written well and deserves to be read by anyone who is concerned about the environment.

PISA 2018

Rapa Nui
Question 4 / 7

Refer to the article "Did Polynesian Rats Destroy Rapa Nui's Trees?" on the right. Click on a choice to answer the question.

What do the scientists mentioned in the article and Jared Diamond agree on?

- Humans settled Rapa Nui hundreds of years ago.
- Large trees have disappeared from Rapa Nui.
- Polynesian rats ate the seeds of large trees on Rapa Nui.
- Europeans arrived on Rapa Nui in the 13th century.

Blog
www.theprofessorblog.com/Fieldwork/RapaNui

The Professor's Blog
Posted May 23, 11:22 a.m.

As I look out of my window this morning, I see the landscape I have learned to love here on Rapa Nui, which is known in some places by the name Easter Island. The grasses and shrubs are green, the sky is blue, and the old, now extinct volcanoes rise up in the background.

I am a bit sad knowing that this is my last week on the island. I have finished my field work and will be returning home. Later today, I will take a walk through the hills and say good-bye to the moai that I have been studying for the past nine months. Here is a picture of some of these massive statues.

Blog
www.theprofessorblog.com/Fieldwork/RapaNui

Did Polynesian Rats Destroy Rapa Nui's Trees?
By Michael Ramirez, Science Reporter

In 2001, Jared Diamond published *Collapse*. In the book, he described the human settlement of Rapa Nui (also called Easter Island).

The book caused a huge controversy soon after its publication. Many scientists questioned Diamond's theory of what happened on Rapa Nui. They agreed that the huge trees had disappeared by the time Europeans first arrived on the island in the 13th century, but they did not agree with Jared Diamond's theory about the cause of the disappearance.

Now, two scientists, Carl Lipo and Terry Hunt, have published a new theory. They believe that the Polynesian rat ate the seeds of the trees, preventing new ones from growing. The rat, they believe, was brought over either accidentally or purposefully on the canoes that the first human settlers used to land on Rapa Nui.

Studies have shown that a population of rats can double every 47 days. That's a lot of rats to feed. To support their theory, Lipo and Hunt point to the remains of palm nuts that show the gnaw marks made by rats. Of course, they acknowledge that humans did play a role in the destruction of the forests of Rapa Nui, but they believe that the Polynesian rat was an even greater culprit, setting in motion a series of factors.

The most important details in this text are that the student must use a blog to obtain the proper answers to the first and second questions, and that all three readings may be accessed via a tab. In question 3, the student must select whether the claims about the book review are objective or subjective. In question 5, the student must understand what evidence in the text supports or verifies

the scientists' theory. Finally, the learner must combine the material from the readings and pick which hypothesis to support in the seventh question. Level 4 students can analyze information sources and determine whether they are relevant.

In the sixth question, students should use the three texts to understand the information regarding the theories. Level 5 questions are 3, 4, and 6. Students who are proficient at level 5 are digital media readers who can analyze material collected from a variety of web-based sources. Table 5 shows the distribution of the Rapa Nui text analysis and Table 6 shows the overall distribution of the three texts' analyses. The targeted tasks become more complex as the tiers grow.

Table 5. Analysis of the Text of Rapa Nui

| Question Number | Cognitive Process | Response Format | Difficulty | Compatible New Literacy Skill |
|-----------------|---|-----------------|------------|-------------------------------|
| 1 | Access and retrieve information within a text | Multiple choice | 4-559 | Accessing information |
| 2 | Represent literal meaning | Open response | 3-513 | Accessing information |
| 3 | Reflect on content and form | Multiple choice | 5-654 | Critical evaluation |
| 4 | Access and retrieve information within a text | Multiple choice | 5-634 | Accessing information |
| 5 | Detect and handle conflict | Multiple choice | 4-597 | Verification |
| 6 | Integrate and generate inferences across multiple sources | Multiple choice | 5-665 | Synthesizing |
| 7 | Detect and handle conflict | Open response | 4-588 | Verification |

Table 6. General Table of Analyses of Texts

| New Literacy Skills | Title of Text/Question Number | Cognitive Process | Response Format | Difficulty | n | % |
|-----------------------|-------------------------------|---|-----------------|------------|---|----|
| Accessing information | Chicken Forum/1 | Represent literal meaning | Multiple choice | 1b-328 | | |
| | Chicken Forum/4 | Represent literal meaning | Multiple choice | 1b-328 | | |
| | Cow's Milk/1 | Represent literal meaning | Multiple choice | 1b-323 | | |
| | Cow's Milk/4 | Represent literal meaning | Open response | 3-398 | | |
| | Rapa Nui/1 | Access and retrieve information within a text | Multiple choice | 4-559 | | |
| | Rapa Nui/2 | Represent literal meaning | Open response | 3-513 | | |
| | Rapa Nui/4 | Access and retrieve information within a text | Multiple choice | 5-634 | | |
| Total | | | | | 7 | 33 |
| Searching | - | - | - | - | | |
| Synthesizing | Chicken Forum/2 | Integrate and generate inferences | Multiple choice | 1a-357 | | |
| | Chicken Forum/5 | Integrate and generate inferences | Multiple choice | 1a-347 | | |
| | Chicken Forum/7 | Integrate and generate inferences across multiple | Open response | 2-466 | | |

| | | | | | | |
|-------------------------------------|-----------------|---|-----------------|--------|----|-----|
| | | sources | | | | |
| | Cow's Milk/5 | Integrate and generate inferences | Multiple choice | 5-662 | | |
| | Rapa Nui/6 | Integrate and generate inferences across multiple sources | Multiple choice | 5-665 | | |
| Total | | | | | 5 | 24 |
| Verification | Cow's Milk/6 | Detect and handle conflict | Multiple choice | 1a-406 | | |
| | Cow's Milk/7 | Detect and handle conflict | Open response | 3-506 | | |
| | Rapa Nui/5 | Detect and handle conflict | Multiple choice | 4-597 | | |
| | Rapa Nui/7 | Detect and handle conflict | Open response | 4-588 | | |
| Total | | | | | 4 | 19 |
| Critical evaluation | Chicken Forum/3 | Reflect on content and form | Multiple choice | 2-458 | | |
| | Chicken Forum/6 | Access quality and credibility | Open response | 2-409 | | |
| | Cow's Milk/2 | Reflect on content and form | Multiple choice | 2-452 | | |
| | Cow's Milk/3 | Reflect on content and form | Multiple choice | 3-539 | | |
| | Rapa Nui/3 | Reflect on content and form | Multiple choice | 5-654 | | |
| Total | | | | | 5 | 24 |
| Number of multiple choice questions | | | | | 15 | 71 |
| Number of open response | | | | | 6 | 29 |
| First-level question | | | | | 6 | 29 |
| Second-level question | | | | | 4 | 19 |
| Third-level question level | | | | | 4 | 19 |
| Fourth-level question level | | | | | 3 | 14 |
| Fifth-level question level | | | | | 4 | 19 |
| General total | | | | | 21 | 100 |

Conclusion. The most important details in this text are that 33% of the questions assessed were related to information availability, 24% to synthesizing and critical evaluation, and 19% to verification skills. The most frequently asked questions concern the ability to acquire information, which is similar to expressing true information and reaching and remembering knowledge. Verification and critical evaluation are the second most commonly employed skills, and critical thinking is one of the first talents that come to mind when discussing digital media. The level of

critical evaluation questions is 2 and above, and the country's scores are 60% higher than the average.

TCF requires individuals to acquire eight critical abilities as part of their lifelong learning, including digital competence, which includes computer access and evaluation, information storage, production, presentation, and exchange. The program also incorporates topics such as reading culture, communication, and science and technology, as well as multiliteracy, digital literacy, e-books, technology literacy, media literacy, information literacy, social media, and technology concepts. The ability to synthesize is an important process reading and understanding information in digital environments, as well as gathering and presenting the information contained therein. 29% of pupils lack the behaviors they should exhibit while browsing the pages. The PISA 2018 evaluation is centered on searching for and understanding digital reading content. [9,p.18]

The questions are texts from multiple sources that an individual is likely to encounter in real life. According to PISA data, internet connectivity among 15-year-old pupils increased from 15% in 2009 to 60% in 2018. Predicting and directing an individual's behavior when presented with different texts is dependent on accurately understanding the PISA questions. Teaching new literacy skills is a tangible proposal for the actions required by the questions.

The new literacy skills are equivalent to and compatible with the PISA skills, and are listed in the curriculum and textbooks as skills that students should learn. Primary school Kazakh textbooks are not ready for this subject, and research on new literacy skills is needed. The 2017 and 2018 Kazakh language curriculum emphasize twenty-first-century skills more than other programs, and the 2005 Kazakh Language Curriculum promise to encompass all twenty-first-century competencies.

PISA assessments reveal that children struggle with reading comprehension, particularly higher-order thinking skills. When Kazakhstan's reading literacy results are examined, it is discovered that the majority of students in the fifth and sixth grades have a low rate of correctly responding to reading texts that require higher order cognitive skills, such as the processes of integrating and generating inferences, reflecting, and evaluating. Another interesting finding in the PISA data is that nations that excelled at print reading comprehension also excelled at online reading comprehension. Print and online reading comprehension processes should not be considered separately. It is stated in PISA data that students' performances in digital and print reading are closely related. On average, 7.8% of students in the 16 participating OECD countries performed at level 5 in digital reading, while 16.9% of students performed below level 2. In addition, similar students performed below the second level in printed reading with a percentage of 17.4%. When the results of our country are examined, there is no difference between the digital reading and printed reading performances of the students, while it is stated that 55% of the students prefer printed reading (OECD, 2021).

This case demonstrates that digital reading is not lower than print reading, and that the desired behavior is reading comprehension. PISA examinations have been used to explain how digital reading should be understood, and it is expected to contribute to traditional literacy by including activities such as accessing information, searching, synthesizing, verifying, and critical evaluation skills. Training on new reading skills with both teacher and student dimensions is needed.

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