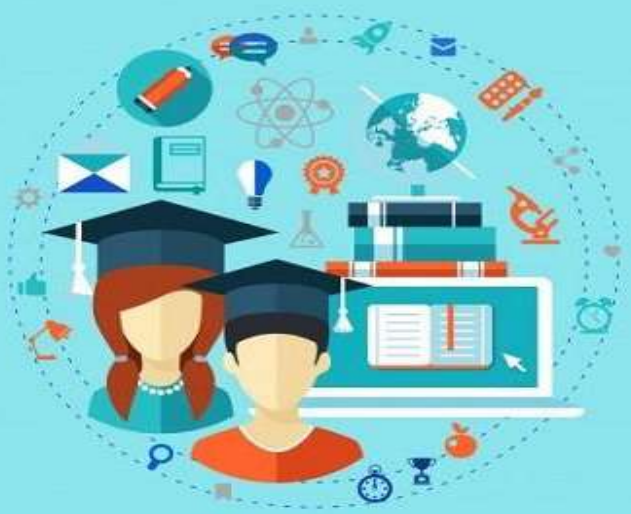

CONTEMPORARY APPROACHES IN EDUCATIONAL STUDIES

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PREFACE

Education is one of the most significant pillars of individual development and societal progress. This book, a collaborative effort by multiple authors, aims to explore the multifaceted nature of education and its ever-evolving dynamics. Through diverse perspectives, we seek to provide readers with a rich tapestry of insights into contemporary educational practices and theories.

Each contributor brings their unique expertise to the table, addressing a wide range of topics from innovative teaching methods and the role of technology in education to inclusive practices and the importance of emotional intelligence. This variety allows readers to engage with educational issues from multiple angles and to appreciate the complexity of the field.

Education is not merely the transfer of knowledge; it is a transformative process that shapes the way individuals think, develop values, and acquire social skills. To this end, this book balances theoretical frameworks with practical applications, a making it a valuable resource for educators, administrators, student teachers, and anyone interested in the education sector.

Each chapter is designed to stand on its own while contributing to a cohesive understanding of educational principles. This structure empowers readers to delve deeply into specific topics of interest, all while reinforcing the importance of a holistic approach to education.

As we navigate the complexities of education, we hope this book serves as a guiding resource on your journey. Every piece of knowledge gained and every new perspective embraced contributes to a brighter future in education.

We wish all our readers inspiration and success in their educational endeavors.

Prof. Dr. Osman Kubilay GÜL

TABLE OF CONTENTS

CHAPTER 1

PERSPECTIVES OF PROSPECTIVE TEACHERS ON CURRICULUM LITERACY IN LIGHT OF 21ST CENTURY SKILLS: AN INTERNATIONAL QUALITATIVE RESEARCH

Assoc. Prof. Dr. Serhat SÜRAL

INTRODUCTION

In the rapidly changing world of the 21st century, education systems must also adapt to this change. In this context, equipping teachers and prospective teachers with 21st century skills is of great importance. 21st century skills include competencies such as critical thinking, creativity, communication, and collaboration (Partnership for 21st Century Skills, 2019). These skills are complemented by digital literacy and the ability to use technology effectively (ISTE, 2020).

International education policies and research show that improving teachers' competencies in curriculum literacy positively affects student achievement (OECD, 2021). Particularly, international assessment programs such as PISA and TALIS conducted by OECD reveal a strong correlation between teachers' digital skills and curriculum literacy and student performance (OECD, 2019). Therefore, it is critical for prospective teachers to develop curriculum literacy skills during their training processes.

In Turkey, the Ministry of National Education (MEB) has stated in the 2023 Education Vision document that enhancing teachers' digital literacy skills is among the primary objectives (MEB, 2018).

Accordingly, digital literacy and programming skills are being integrated into teacher training programs. However, research on the extent to which prospective teachers embrace these skills and their views on this subject is limited (Gök & Erdoğan, 2019; Karaman & Karaman, 2020).

In the United States, the National Education Association (NEA) emphasizes that acquiring 21st century skills by teachers positively contributes to students' academic success and future careers (NEA, 2020). Similarly, the Directorate-General for Education and Culture of the European Commission has developed policies aimed at enhancing teachers' competencies in digital literacy and curriculum literacy (European Commission, 2020).

Similar trends are observed in Asian countries as well. For instance, the Ministry of Education in South Korea is implementing comprehensive reforms to increase digital literacy skills (Kim & Lee, 2021). In Japan, programs aimed at enhancing teachers' digital skills are intended to help students learn more effectively with technology (MEXT, 2020).

In Australia, comprehensive policies have been developed to enhance teachers' digital skills and promote curriculum literacy. Projects initiated by the Australian Department of Education and Training (2019) aim to help teachers learn how to use digital technologies in education. Additionally, digital literacy and programming skills hold significant importance in teacher training programs in Canada (Canada Education and Early Childhood Development, 2020).

International research findings also support these views. For instance, a study conducted in the United States shows that enhancing teachers' digital literacy skills contributes to students' success in STEM (Science, Technology, Engineering, and Mathematics) fields (Johnson et al., 2016). Another study conducted in Europe reveals that teachers with digital literacy skills significantly improve students' problem-solving and critical thinking abilities (European Schoolnet, 2015).

Similar studies emphasize that enhancing prospective teachers' competencies in digital literacy and curriculum literacy plays a key role in acquiring the skills required by the 21st century. Research conducted both nationally and internationally shows that digital skills and curriculum literacy significantly impact student achievement and future career opportunities (Partnership for 21st Century Skills, 2019; OECD, 2019; NEA, 2020). Therefore, developing these skills in prospective teachers will improve the quality of education systems and increase students' future success.

The importance of this research lies in revealing the awareness of prospective teachers about curriculum literacy and their educational needs in this regard. This study will provide important data for evaluating and updating current education programs. Understanding prospective teachers' views on curriculum literacy will contribute to taking significant steps towards improving educational policies and teacher training programs. Additionally, this research will help identify strategies necessary for developing prospective teachers' digital literacy and curriculum literacy skills. These strategies will contribute to prospective teachers becoming individuals with the digital

competencies required by the 21st century, thus increasing the quality of education. This study, conducted with participants from different countries, provides an international perspective by revealing how cultural and educational system differences affect approaches to curriculum literacy. This study also provides a significant foundation for future research in the field of teacher education. The findings obtained will offer recommendations for developing policies and programs necessary to increase prospective teachers' awareness of curriculum literacy and meet their educational needs in this area. This will ensure that prospective teachers graduate better equipped and that the quality of education systems is enhanced.

This research aims to examine prospective teachers' views on curriculum literacy in light of 21st century skills from an international perspective. In-depth interviews with prospective teachers from different countries will be conducted to collect data, and the awareness of prospective teachers about curriculum literacy and their educational needs will be evaluated based on this data. The findings obtained aim to offer recommendations for the development of teacher training programs.

Problem Statement

The main problem of this research is to examine the views and awareness of prospective teachers about curriculum literacy in the context of 21st century skills.

Sub-problems

1. What is the level of awareness of prospective teachers about curriculum literacy?

2. How do prospective teachers evaluate the relationship between 21st century skills and curriculum literacy?
3. What are the educational needs for developing prospective teachers' curriculum literacy skills?
4. Are there cultural and educational system-based differences in the views of prospective teachers from different countries on curriculum literacy?
5. What strategies do prospective teachers propose for developing curriculum literacy skills?

METHOD

Research Design

This research was conducted using qualitative research methods. Qualitative research allows for an in-depth examination of a specific subject and provides a more detailed understanding of participants' experiences, views, and emotions (Creswell, 2013). Phenomenological design was used in this research. Phenomenology aims to understand participants' experiences and perceptions about a particular phenomenon (Moustakas, 1994). In this research, the views and awareness of prospective teachers about curriculum literacy were examined.

Sample Group

The sample of the research consists of prospective teachers from various countries. Participants were selected using a purposeful sampling method. Purposeful sampling allows for the selection of

participants with specific criteria and enables the collection of data most suitable for the research purpose (Patton, 2002). The criteria for selecting participants in this research are:

- Being prospective teachers studying in faculties of education
- Coming from different cultural and educational systems
- Being familiar with digital literacy and curriculum literacy topics.

The sample group consists of 30 prospective teachers from the United States, Canada, Australia, South Korea, Japan, and Turkey. Interviews were conducted with five prospective teachers from each country.

Table 1. Descriptive Values of the Sample

Country	**Number of Participants**	**Gender**	**Age Range**	**Education Level**
USA	5	3 Female, 2 Male	22-25	Senior, Undergraduate
Canada	5	2 Female, 3 Male	23-26	Senior, Undergraduate
Australia	5	4 Female, 1 Male	21-24	Junior and Senior, Undergraduate
South Korea	5	3 Female, 2 Male	22-25	Senior, Undergraduate
Japan	5	3 Female, 2 Male	23-26	Junior and Senior, Undergraduate
Turkey	5	2 Female, 3 Male	22-24	Senior, Undergraduate
Total	**30**	**17 Female, 13 Male**	**21-26**	**Junior and Senior, Undergraduate**

Data Collection Method

Semi-structured in-depth interviews were used as the data collection tool in the research. Semi-structured interviews allow the researcher to conduct in-depth interviews with participants within the framework of specific questions but also provide flexibility for participants to freely express their own experiences and views (Merriam, 2009). Interviews were conducted face-to-face with each participant or through online platforms.

The interview form was prepared in line with the aims of the research and included questions under the following main headings:

- Awareness levels of prospective teachers about curriculum literacy
- Views on the relationship between 21st century skills and curriculum literacy
- Educational needs for developing curriculum literacy skills
- Differences in views among prospective teachers from different cultural and educational systems
- Strategies proposed for developing curriculum literacy skills.

Reliability and Validity of the Data Collection Tool

Reliability and validity hold an important place in qualitative research, ensuring that the data collection tool is reliable and valid, increasing the accuracy and reliability of the data obtained.

Reliability:

- **Review by the Researcher:** The interview questions were reviewed by two expert faculty members in the field, and the clarity and scope adequacy of the questions were evaluated.

- **Pilot Interviews:** Pilot interviews were conducted with five prospective teachers with similar characteristics before starting the research. During this process, the clarity, appropriateness, and response time of the questions were evaluated. Necessary adjustments were made based on feedback obtained from pilot studies.
- **Intercoder Reliability:** The data obtained from the interviews were coded by two independent researchers, and the compatibility between the codings was evaluated. Intercoder reliability was calculated using Cohen's Kappa coefficient, and a high level of agreement was achieved.

Validity:

- **Face Validity:** The interview questions were prepared in line with the aims of the research, and face validity was ensured by obtaining expert opinions.
- **Content Validity:** The questions were designed to comprehensively examine the awareness and educational needs of prospective teachers about curriculum literacy. Content validity was confirmed by evaluations of field experts.
- **Participant Confirmation:** Summaries of the interviews were presented to the participants at the end of the interview, and the accuracy of the data was confirmed by obtaining their approval.
- **Rich Description:** The data obtained from the interviews were reported using detailed and rich descriptions, thus increasing the generalizability and transferability of the findings.

Data Analysis

The collected data were analyzed using content analysis method. Content analysis is the systematic examination and interpretation of qualitative data (Krippendorff, 2018). This process allowed for an in-depth understanding of the views and awareness of prospective teachers about curriculum literacy. The stages of content analysis are as follows:

- **Coding of Data:** The data obtained from the interviews were coded using open coding method. During this process, the data obtained from each interview were examined in detail, and key concepts were identified.
- **Identifying Themes:** Following the coding process, similar codes were grouped to create themes. The themes outlined the main lines of the views of prospective teachers on curriculum literacy.
- **Reviewing Themes:** The identified themes were organized according to the sub-problems of the research, and each theme was examined in detail.
- **Interpreting Data:** The findings obtained through thematic analysis were interpreted, and the views of prospective teachers on curriculum literacy were comprehensively presented.

This analysis method allowed for an in-depth understanding of the awareness and educational needs of prospective teachers regarding curriculum literacy and increased the reliability of the research. The findings obtained provide significant insights for the development of teacher training programs.

FINDINGS

This section presents the analysis results of prospective teachers' views on curriculum literacy in light of 21st century skills. The findings are organized according to the sub-problems of the research.

1. What is the level of awareness of prospective teachers about curriculum literacy?

The level of awareness of prospective teachers about curriculum literacy was discussed during the interviews, and the following themes emerged.

Basic Knowledge and Awareness:

Most prospective teachers have a basic understanding of the concept of curriculum literacy. Participants expressed that curriculum literacy is not limited to computer programming but also involves the effective use of digital tools and technologies. A participant from Canada stated, "Curriculum literacy is not just about coding but also about being able to use technology effectively." A participant from South Korea mentioned, "Curriculum literacy is a fundamental skill necessary for surviving in the digital world." A participant from the United States highlighted the practical aspect of curriculum literacy by saying, "Theoretical knowledge learned in school is not sufficient in practice; we need more hands-on training."

Role in the Educational Process:

Prospective teachers emphasized that curriculum literacy plays an important role in modern education and that these skills are critical for students' future success. A participant from Turkey stated, "Curriculum literacy equips students with analytical thinking and problem-solving

skills." A participant from Japan emphasized the necessity of a deep understanding of curriculum literacy by saying, "It's important not just to use technology but also to understand how it works."

Inadequacy of Current Education Programs:

Some participants believe that current education programs do not sufficiently cover curriculum literacy skills. A participant from South Korea said, "Our education system should provide more resources and opportunities to develop curriculum literacy." A participant from the United States highlighted the lack of practical training by stating, "Theoretical knowledge learned in school is not sufficient in practice."

2. How do prospective teachers evaluate the relationship between 21st century skills and curriculum literacy?

The views of prospective teachers on the relationship between 21st century skills and curriculum literacy were examined, and the following themes were identified.

Holistic Approach:

Participants stated that curriculum literacy is closely related to 21st century skills and that these skills should be integrated. A participant from Australia said, "When 21st century skills are complemented with curriculum literacy, it provides a stronger educational experience." A participant from Canada stated, "When critical thinking and curriculum literacy are addressed together, students can become more creative and solution-oriented."

Critical Thinking and Problem Solving:

Prospective teachers emphasized that curriculum literacy is an important tool for developing critical thinking and problem-solving

skills. A participant from Japan stated, "Curriculum literacy equips students with the ability to solve problems in a more analytical and systematic way." A participant from Turkey said, "Students can make faster and more effective decisions thanks to curriculum literacy."

3. What are the educational needs for developing prospective teachers' curriculum literacy skills?

The analysis of the educational needs for developing prospective teachers' curriculum literacy skills revealed the following themes.

More Hands-on Training:

Participants stated that they need more hands-on training and opportunities to practice in order to develop their curriculum literacy skills. A participant from the United States said, "In addition to theoretical knowledge, more hands-on training such as lab and workshop activities should be included." A participant from Australia suggested, "Events like coding camps and hackathons can increase practical opportunities."

Updated Educational Materials and Technologies:

Prospective teachers emphasized the importance of keeping educational materials and technologies up-to-date. A participant from Canada said, "Our educational materials should keep up with rapid technological advancements." A participant from South Korea said, "As our opportunities to learn new technologies and software increase, so does our curriculum literacy."

Competency of Educators:

Prospective teachers stated that the competencies of educators in curriculum literacy should be increased. A participant from Japan said,

"Our teachers also need to receive continuous training on this topic." A participant from Turkey said, "Educators should be more equipped to teach technology and programming."

4. Are there cultural and educational system-based differences in the views of prospective teachers from different countries on curriculum literacy?

The examination of cultural and educational system-based differences in the views of prospective teachers from different countries on curriculum literacy revealed the following themes.

Impact of Educational Systems:

Participants stated that the importance given to curriculum literacy varies according to their countries' education systems. A participant from South Korea said, "Our education system places great importance on technology and offers various projects in this regard." A participant from Turkey said, "There needs to be more emphasis on curriculum literacy in our education system."

Cultural Approaches:

Participants mentioned that cultural approaches to curriculum literacy also differ. A participant from Japan said, "Technological skills and discipline are very important in our culture." A participant from Canada said, "Creativity and innovation are prioritized in our culture."

5. What strategies do prospective teachers propose for developing curriculum literacy skills?

The analysis of the strategies proposed by prospective teachers for developing curriculum literacy skills revealed the following themes.

Collaborative Learning:

Participants stated that collaborative learning environments are effective in developing curriculum literacy. A participant from the United States said, "Group projects and teamwork make learning more enjoyable and effective."

A participant from Australia said, "Working with other students allows us to learn different perspectives."

Continuous Education and Development:

Prospective teachers proposed increasing opportunities for continuous education and self-development. A participant from Canada said, "Courses, seminars, and online trainings can help us improve ourselves." A participant from South Korea said, "Continuous education programs help us keep our knowledge and skills up-to-date."

Technology Integration:

Participants emphasized the need to increase the integration of technology in education. A participant from Japan said, "Technology should be used more in lessons, and students should be provided with practical experiences."

A participant from Turkey said, "By actively using educational technologies in lessons, we can offer students a more engaging and interactive learning environment."

The data obtained from the interviews were analyzed, and the following codes and themes were created:

Table 2. Frequency Values of Codes

Codes	**Frequency (n)**
Basic Knowledge and Awareness	24
Role in the Educational Process	20
Inadequacy of Current Programs	15
Holistic Approach	18
Critical Thinking and Problem Solving	22
Hands-on Training	25
Updated Materials and Technologies	17
Competency of Educators	12
Impact of Educational Systems	14
Cultural Approaches	10
Collaborative Learning	16
Continuous Education and Development	13
Technology Integration	19

Table 3. Frequency Values of Themes

Themes	**Frequency (n)**
Awareness of Curriculum Literacy	59
Relationship Between 21st Century Skills and Curriculum Literacy	40
Educational Needs	54
Cultural and Educational System Differences	24
Development Strategies	48

In conclusion, the findings show that prospective teachers' awareness of curriculum literacy is generally high, but current

education programs are insufficient. Prospective teachers emphasize that curriculum literacy is integrated with 21st century skills and enhances critical thinking and problem-solving abilities. Educational needs include more hands-on training, updated materials, and increasing the competency of educators. Participants from different countries stated that cultural and educational system differences affect their approaches to curriculum literacy. Finally, collaborative learning, continuous education, and technology integration are among the strategies proposed by prospective teachers for developing curriculum literacy.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This research examined prospective teachers' views on curriculum literacy in light of 21st century skills. The findings reveal that prospective teachers are generally familiar with the concept of curriculum literacy, but current education programs do not sufficiently support these skills. These findings are consistent with national and international literature, aligning with previous research highlighting the inadequacy of digital literacy and curriculum literacy education (OECD, 2021; Johnson et al., 2016). The holistic approach of prospective teachers to integrating curriculum literacy with 21st century skills emphasizes the importance of these skills in education. The role of curriculum literacy in enhancing critical thinking and problem-solving abilities is one of the significant findings of the research. This finding supports the views in the literature that curriculum literacy enhances students' analytical thinking skills (Partnership for 21st

Century Skills, 2019; European Schoolnet, 2015). A study by European Schoolnet (2015) also revealed that digital literacy enhances students' problem-solving and critical thinking skills. Similarly, a study conducted in Turkey emphasized the positive impact of digital literacy skills on student achievement (Gök & Erdoğan, 2019).

Educational needs include more hands-on training, updated materials, and increasing the competency of educators. The need for practical opportunities highlighted by participants shows that curriculum literacy should not be limited to theoretical knowledge. Additionally, the importance of continuous training for educators underscores their role in developing digital literacy and curriculum literacy skills in students (MEB, 2018; NEA, 2020). A similar study conducted in South Korea obtained comparable results, indicating that prospective teachers need more hands-on training and professional development programs to enhance their curriculum literacy skills (Kim & Lee, 2021).

The findings of this research provide significant insights for updating teacher training programs and developing strategies for enhancing digital literacy and curriculum literacy skills. Educational needs include more hands-on training, updated materials, and increasing the competency of educators. These findings provide important clues on how to improve teacher training programs to enhance prospective teachers' digital skills. Especially increasing hands-on training opportunities is critical for prospective teachers to apply their theoretical knowledge in practice. In this context, coding camps, laboratory activities, and hackathons can help prospective

teachers develop their curriculum literacy skills (Australian Department of Education and Training, 2019). The Digital Literacy School Grants Program implemented in Australia offers various hands-on training opportunities to help teachers learn how to use digital technologies in education (Australian Department of Education and Training, 2019).

The finding that educators' competencies should be increased to develop prospective teachers' curriculum literacy skills is an important factor for the success of teacher training programs. Continuous training for educators in digital skills will enable them to guide students better. This will contribute to the development of prospective teachers as individuals equipped with digital literacy and curriculum literacy skills (NEA, 2020; MEB, 2018). For example, in the United States, continuous education programs and professional development opportunities are provided to enhance teachers' digital skills. NEA's studies show that increasing teachers' digital skills positively contributes to students' academic achievements and future careers (NEA, 2020). Similarly, the Ministry of National Education in Turkey organizes various training programs to enhance teachers' digital literacy skills (MEB, 2018).

This research, offering an international perspective, comparatively examined the views of prospective teachers from different countries on curriculum literacy. These comparisons helped identify the strengths and weaknesses of different education systems and revealed the impact of national contexts on curriculum literacy education. For instance, a study conducted in Canada revealed that digital literacy skills enhance students' creative thinking and innovation

abilities (Canada Education and Early Childhood Development, 2020). In countries like Japan and South Korea, digital literacy and curriculum literacy skills are integrated with cultural values and discipline. These countries implement strong policies and programs for the development of digital skills, which enhances students' proficiency in technology use (MEXT, 2020; Kim & Lee, 2021). These findings, supported by data from different countries, offer an international perspective for increasing prospective teachers' awareness of curriculum literacy and meeting their educational needs. This perspective provides a significant foundation for future research in the field of teacher education.

The results of this research show that prospective teachers' awareness of curriculum literacy is generally high, but current education programs are insufficient. Prospective teachers emphasize that curriculum literacy is integrated with 21st century skills and enhances critical thinking and problem-solving abilities. Educational needs include more hands-on training, updated materials, and increasing the competency of educators. Participants from different countries stated that cultural and educational system differences affect their approaches to curriculum literacy.

Recommendations:

1. **Updating Education Programs:** Current education programs should be updated to include digital literacy and curriculum literacy skills. More hands-on training opportunities should be provided to increase practical experience.
2. **Updating Educational Materials and Technologies:** Educational materials and technologies should be continuously

updated to keep up with rapid technological advancements. This will enable students to receive education with the most up-to-date information and tools.

3. **Increasing Educator Competencies:** The competencies of educators in digital literacy and curriculum literacy should be increased. Continuous training programs and professional development opportunities should be provided for this purpose.
4. **Considering Cultural and National Contexts:** Cultural and national contexts should be considered in curriculum literacy education. Education policies should be shaped according to the unique needs of each country.
5. **Promoting Collaborative Learning Environments:** Collaborative learning environments should be used as an effective method for developing curriculum literacy. Group projects, teamwork, and collaborative activities should be encouraged.
6. **Increasing Technology Integration:** Technology integration in education should be increased, and students should be provided with practical experiences. Educational technologies should be actively used in lessons.

These recommendations will contribute to the development of prospective teachers' curriculum literacy skills and the training of individuals with the digital competencies required by the 21st century. This will enhance the quality of teacher training programs and support students' future success.

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CHAPTER 2

STRATEGIES IN THE PROCESS OF CONSTRUCTING MEANING

Res. Assist. Dr. Aydın BULUT

INTRODUCTION

Reading is one of the most fundamental tools for meeting the learning needs of human beings. The act of reading is a complex process that plays a significant role in an individual's cognitive, affective, and social development. Furthermore, reading serves as a conduit for the transfer and dissemination of knowledge and emotions. There are numerous definitions of reading in the literature, reflecting the multifaceted nature of this phenomenon and the various ways in which it can be conceptualised. In the academic literature, the term "reading" is defined as follows: "A process of establishing meaning based on effective communication between the author and the reader, using prior knowledge, in line with an appropriate method and purpose, in a regular environment" (Akyol, 2006, p. 1); "An active process in which the individual creates new meanings by associating and integrating his "The process of integrating prior knowledge with the information presented in the text" (Güneş, 2007, p. 118).

"The activity of extracting meaning from written symbols through the interaction of cognitive behaviours and psycho-motor skills" (Demirel, 2002, p. 75). In light of the various definitions of reading, it can be asserted that the act of reading is a multifaceted and complex

undertaking. The definitions emphasise a number of concepts, including prior knowledge, comprehension, analysis, synthesis, interpretation, perception, relationship building, interaction, seeing, attention and meaning-making. In light of these concepts, it can be asserted that the mental processes of reading are of paramount importance. The ultimate objective of reading is to derive meaning from the text in question. Consequently, reading comprehension is a pivotal element in the educational process, forming the foundation of the education and training system. Reading is not merely a subject pertaining to the Turkish lesson; it is a fundamental concept that underpins the entire curriculum.

The ultimate objective of reading is to enhance reading comprehension and the ability to comprehend written texts. Reading comprehension can be defined as the process of deriving meaning from a written text. For this reason, it is one of the fundamental language skills that students should be encouraged to acquire at the earliest possible stage of their education, ideally at the primary level (Rose et al. 2000, p. 55). The ability to comprehend written text is dependent on the reader's ability to recognise and interpret the symbols and language used, their linguistic knowledge, cognitive abilities and skills related to the world around them. In addition, the reader's willingness, interest in reading, judgements, purpose of reading and the environment in which reading takes place also have an impact on the level of reading comprehension (Akyol, 2005, p. 3). Reading comprehension can be defined as an active process in which both the information in the text and the reader's interpretations, as well as the messages that the author

intends to convey, are logically structured (Radoyevic, 2006, p. 14). The process of reading comprehension, which represents the primary objective of the reading process, is described as a complex process that necessitates active, conscious, and cognitive effort on the part of the reader. Reading comprehension is an interactive and dynamic process that is contingent upon the reader's prior knowledge, reading purposes, the type and nature of the text (Kent, 2002, p. 22). This process is achieved through conscious cognitive activity, which establishes a connection between the cognitive processes involved, the textual content itself and the reader's prior knowledge, expectations and reading purposes. Accordingly, the objective of reading comprehension is to construct and structure the reader's thought development (Block, 2004, p. 2). Reading comprehension can be defined as the process of interacting with the text, whereby the reader constructs meaning through the integration of their prior knowledge and experiences with the content and relationships of the text (Pardo, 2004, p. 272).

Reading comprehension can be defined as the mental symbolisation of the information and interpretations conveyed in a text (Van Den Broek & Kremer, 2000). In other words, it is the process of elucidating the meaning inherent in written words, sentences and texts (Aarnoutse & Van Leeuwe, 2000). Reading comprehension can be defined as the act of thinking and constructing meaning before, during and after reading, utilising the students' prior knowledge of the text presented (Meissner & Yun, 2008; Sweet & Snow, 2003). The development of reading comprehension is a significant component of numerous academic curricula. Given its pivotal role in the advancement

of cognitive processes, reading comprehension is a crucial aspect of academic development.

Reading comprehension is a complex process that occurs through the interaction of numerous cognitive processes (Kendeou & Trevors, 2012; Oakhill & Cain, 2000; Swanson, Howard, & Saez, 2006; van den Broek & Espin, 2012; van den Broek, Rapp, & Kendeou, 2005). In the context of reading comprehension, a number of variables can be identified, both in relation to the text itself and to the reader. To illustrate, the type, structure and topicality of the text represent text-related variables. Additionally, students' prior knowledge, analytical abilities, motivation, and self-perceptions are student-related variables (Hiebert & Raphael, 1996). The construct of reading comprehension encompasses a number of elements, including vocabulary knowledge, prior knowledge, and motivation (Alexander, 2003; Pressley, 2000). The most effective method of teaching comprehension is through a direct explanation of the various strategies available, including questions such as 'when', 'how' and 'why' (Duffy, 2003; Duke & Pearson, 2002). Following a direct explanation, the teacher should then model the relevant strategies (Collins, Brown & Holum, 1991; Duke & Pearson, 2002).

Güneş (2004, p. 59) posits that reading comprehension entails not only identifying the meaning of a text but also engaging in a series of higher-order cognitive processes, including reasoning, conclusion-drawing, and evaluation. Additionally, it encompasses a range of mental activities, such as examination, selection, decision-making, translation, interpretation, analysis, synthesis, and evaluation. The process of

reading comprehension is comprised of distinct stages. The initial stage is that of identifying the meaning. This stage serves as the foundation for comprehension and evaluation. At this juncture, students ascertain the denotation and connotation of words within the text. The second stage is that of comprehension, whereby the meaning of the text is fully understood. At this juncture, students elucidate the meaning through the interpretation of diverse shapes, sketches, and images. In the second stage, students engage in a range of activities, including interpreting, translating, summarising and inferring the meaning they have derived. The third stage is that of meaning evaluation. In this final stage, students arrive at a conclusion by employing their analytical, synthetic, and evaluative skills. The following behaviours are recommended for the reader to adopt during the comprehension of the text:

- Activating prior knowledge
- Analysing the length, structure and important parts of the text
- Don't make predictions
- Identifying important ideas
- Associating with own experiences
- Creating mental images
- Checking their understanding
- Create summaries
- Evaluating the text (Tompkins, 2006, p. 223).

As posited by Giasson (1990), oral comprehension can be classified into four distinct levels. These comprise the basic, interpretive, enquiry and creative comprehension levels. The basic level of comprehension

entails the ability to grasp the fundamental units of language, namely sounds, words, and the relationships between them. The interpretive comprehension level entails the ability to comprehend the message conveyed in the auditory input, to draw inferences and to interpret the information comprehended. Interrogative comprehension entails a detailed analysis of the information conveyed in speech, including comparisons and evaluations of its accuracy, validity, and consistency. In contrast, creative comprehension entails integrating the information presented in the speech with prior knowledge after interpreting it, structuring it in the mind, transferring it to daily life, expanding it with new information and using it.

Reading comprehension strategies are activities that afford students the opportunity to assume control of their own learning. In other words, they encourage students to engage in critical reflection on their own cognitive processes (Susar, 2006, p. 26). An effective reading process is contingent upon the utilisation of reading comprehension strategies in an efficacious manner (Allen, 2003; Van Keer & Verhaeghe, 2005). The utilisation of cognitive strategies in reading comprehension facilitates students' selection, comprehension and interpretation of the text (Vellutino, 2003). Effective readers integrate their prior knowledge with the information presented in the text, employing strategies such as prediction and inference to monitor their comprehension (Pressley, 2000; National Institute of Child Health and Human Development [NICHD], 2000; Smolkin & Donovan, 2002). The utilisation of reading comprehension strategies facilitates the

process of deriving meaning from a text, thereby enabling students to more readily identify and comprehend the intended messages.

It is not uncommon for students to experience difficulties with comprehension (Gough et al., 1996; Pressley, 2006a, 2006b). It is therefore recommended that reading comprehension instruction should explicitly include cognitive strategy instruction (Block & Pressley, 2002; Calfee & Patrick, 1995; Guthrie, Wigfield, Barbosa, et al., 2004; Gaskins, 2003; Pressley, 2006; Sweet & Snow, 2003). It is recommended that teachers provide guidance to students on the utilisation of the aforementioned strategies through the implementation of designated activities (Block & Pressley, 2002; Calfee & Patrick, 1995). It is recommended that comprehension strategies be taught by teachers through modelling from the earliest years of primary school. The proficiency of teachers in the utilisation and instruction of reading and comprehension strategies is a significant determinant of their students' capacity to become strategic readers (Akyol & Ulusoy, 2010).

In particular, the teaching of reading comprehension strategies to students from an early age in a clear, step-by-step and practical manner has the potential to be highly productive in enabling students to make sense of the texts they read.

Furthermore, a long-term approach to teaching reading comprehension strategies, coupled with the incorporation of diverse textual materials, will facilitate more enduring learning. Akyol (2007, p. 33) enumerates the advantages of employing strategies, methods and techniques in reading as follows:

- It helps to understand the content of the text.
- It helps students to concentrate their attention in the reading process.
- It enables students to participate actively in the reading process.
- It establishes a connection between the material content and personal life.
- Provides the opportunity to criticise and evaluate the text.
- It makes the information more permanent.

An effective reading comprehension process is one that incorporates the utilisation of specific strategies prior to, during and following the act of reading. Such strategies can positively contribute to the overall comprehension of the text. However, the teaching of these strategies should be based on the characteristics of the students in question and should be carried out on a text-by-text basis, progressing from the simplest to the most complex. Furthermore, it is essential to implement comprehensive practices that are grounded in strategy-based reading and to facilitate the provision of requisite feedback. A review of domestic and foreign sources on reading comprehension strategies reveals that these are typically examined in three stages: The aforementioned strategies can be classified into three categories: pre-reading, during reading and post-reading strategies (Akyol 2006; Akyol, Ateş, & Yıldırım, 2008; Coşkun, 2010; Daly III, Chafouleas, Skinner, 2005; Güneş, 2007).

The following strategies are recommended prior to reading: skimming, outlining, creating purpose, integrating prior knowledge into

the reading environment, working with keywords, and predicting. During reading, the following strategies are recommended: fluent reading, checking comprehension, using auxiliary strategies, identifying important points, examining, using analogies, strategic note-taking, creating mental images, using context clues. After reading, the following strategies are recommended: summarising, analysing and synthesising, evaluating, identifying main and secondary ideas, creating concept maps and tables, asking and answering questions, reflective thinking and discussion.

In addition to the aforementioned general strategies, the literature indicates that different strategies and techniques are employed for different purposes during the reading process (Daly II, E.J. Chafouleas, S. Skinner, C.H. 2005; Duffy, 2009; Gunning, 2006; Tama, McClain, 1998).

- KWL (What do I know? What do I want to learn? What I have learnt)
- CDQ Strategy (Collaborative-Discussion-Questioning)
- Reciprocal Teaching Strategy
- Summarising Strategy
- Multiple Transition Strategy
- FRSOE Strategy (Forecasting-Review-Summarising-Organising-Evaluation)
- DRTA Strategy (Directed Reading Thinking Activity)
- SQ3RStrategy (Survey-Question-Read-Recite-Review)

KWL Strategy

The KWL strategy prompts the learner to consider their current knowledge and identify areas for further learning. What are my desired areas of knowledge acquisition? The strategy of posing the question "What have I learnt?" has been identified in the literature as a means of enhancing reading comprehension. The strategy is graphical in nature and is based on three key elements: the subject matter that students already know about, their desired learning outcomes and the organisation of their learning outcomes following the completion of reading. In this process, the teacher serves as a model for the students, demonstrating the application of the strategy (Ogle, 1986, p. 564). The KWL strategy facilitates the establishment of a relationship between the students' existing knowledge and the new information they have acquired prior to and during the reading process. The KWL strategy may be employed in a classroom or group setting to facilitate the recollection of previously acquired knowledge, the examination of concepts and vocabulary introduced in the text, and the activation of prior understanding (Camp, 2000, p. 402). Prior to commencing the activities utilising the KWL strategy, a table comprising three columns is constructed. At the outset of this strategy, students engage in a brainstorming session to ascertain their existing knowledge and understanding of the subject matter. This information is recorded in the K column. In the subsequent phase, learners are prompted to formulate queries pertaining to the subject matter they aspire to gain deeper insight into. The questions that are generated are then recorded in the W column. The students then proceed to search for answers to the

questions they have prepared, either during or after reading. In the third stage, students record their learning in the L column (Epçaçan, 2009, p. 217).

The KWL strategy is an accessible approach for students at the outset of their primary school education, given its straightforward structure comprising a limited number of stages. The KWL strategy comprises three stages: What do I know? What do I want to learn? How did I learn? What did I learn? (KWHL) and What do I know? (KWLS). What are my learning objectives? What have I learned? Furthermore, these strategies can be employed to identify areas of further learning. In particular, the 'How did I learn?' stage of the KWHL strategy is of significant importance in enabling students to gain insight into their own learning processes.

CDQ Strategy

The ITS strategy, as developed by Gauthier (2003), is a strategy that combines collaborative discussion and questioning. The CDQ strategy is founded upon the principles of cooperative learning. The most significant aspect of cooperative learning is that students engage in collaborative learning activities within a small group setting, with the objective of assisting each other in their academic pursuits (Açıkgöz, 1992, p. 3). CDQ represents a strategy in which all three aforementioned methods are applied in conjunction with one another. The objective of this reading comprehension strategy is to enhance the efficacy of the other two methods, while simultaneously mitigating the

challenges associated with one method (Demirel & Epçaçan, 2012, p. 80).

Gauthier (2003) posited that the implementation of the CDQ reading comprehension strategy occurs in five discrete steps, which he elucidated as follows: In the initial phase, the instructor assembles heterogeneous groups of up to six students, taking into account the class's specific needs and objectives. In the second stage, the educator prepares questions about the text that students can use to make predictions, pose inquiries, and engage in constructive criticism. In the third stage, the teacher reconvenes the class and initiates a general discussion about the text that has been read by the students. The teacher should, insofar as is feasible, withdraw from the discussion and allow the students to assume responsibility for its conduct. Once the discussion has concluded, the prepared questions are presented to the students. All questions are collated on a single page, and copies are distributed to the students. The questions are then read aloud by all groups and distributed equally among them. The students are responsible for determining the allocation of questions to the appropriate groups. Once a decision has been reached, the question papers are separated and distributed to the respective groups. In the fourth stage, the instructor requests that all groups commence working on the questions. A copy of the text passage in question is provided to each group for reference. One member of each group is designated as the author of the responses. It is recommended that students take notes since the questions are answered collectively. It is recommended that students express their thoughts, engage in discussion and participate in

the analysis of the ideas presented in response to the questions. The questions are addressed through group discussions. It is recommended that student groups identify points of significance and formulate new questions. In the concluding phase, once all questions have been addressed in writing by the respective groups, the students are requested to reassemble and elucidate their responses to one another. A discussion of each question is held, with students encouraged to respond from a variety of perspectives. At this juncture, each group is invited to indicate whether they would like to propose additional questions. Should this be the case, the matter is then discussed. At this juncture, the instructor assumes an active role in the discourse, exemplifying optimal discussion and thinking practices. The activities are deemed successful when all questions have been answered and all aspects of the discussion have been adequately addressed.

Reciprocal Teaching Strategy

Reciprocal teaching is a strategy developed by Palinscar in 1984 with the objective of enhancing reading comprehension. The objective of the reciprocal teaching strategy is to facilitate collaboration and coherence between students and teachers with the aim of enhancing reading comprehension (Le Fevre, Moore, & Wilkinson, 2003). As proposed by Palinscar and Brown (1984), the reciprocal teaching strategy represents a structured teaching process that facilitates the advancement of students' reading comprehension abilities and cultivates comprehension monitoring skills. The reciprocal teaching strategy comprises four fundamental components. These comprise

predicting, explaining, asking questions and summarising. The prediction stage entails students formulating inferences and predictions about the text they will read. It is ensured that their existing knowledge is integrated into the learning environment through the title and visual elements of the text. In the questioning stage, questions pertaining to the text are formulated. The question patterns "what", "where", "why" and "who" are typically employed. In the explanation stage, the objective is to identify the points that the student is unable to comprehend and to provide an explanation for these points. At this juncture, it is incumbent upon the instructor to furnish students with discoveries through the medium of clues. The final stage is the summarising stage, wherein the student is required to express in written form the salient points they have retained from the text (Oczkus, 2013). Reciprocal teaching represents a strategy that can be effectively employed in classroom settings, particularly for students who may be academically disadvantaged or have mild intellectual disabilities. In this strategy, which is based on student-teacher interaction, the teacher serves as a model and takes steps in accordance with the affective characteristics of the student, thereby increasing the likelihood of success for the strategy.

Summarising Strategy

"The process of "leaving aside the details in a narrative and explaining its main lines in a neat and tidy way orally or in writing" is referred to as "summarising" (Doğan et al., 2006, p. 309). The process of summarising entails identifying the central concept or idea within a

text, eliminating superfluous details, and condensing the text through the utilisation of appropriate strategies, employing one's own vocabulary and sentence structures while maintaining the integrity of the text's structure and coherence of thought (Bulut, 2013, p. 15). The act of summarising allows the student to identify the key ideas within a text and to present them in a concise manner (Akyol, 2014, p. 49).

The act of summarising enables students to comprehend the information presented and to retain it in their long-term memory. It enables students to read with comprehension, to identify the key concepts in the text, and to articulate their understanding in their own words (Senemoğlu, 2001, p. 569). Furthermore, summarising is the most crucial indicator of comprehension. It can be reasonably argued that a student who is able to express the subject, main idea and important ideas of a text they have read has a significant understanding of that text. It is therefore recommended that students be taught summarising skills from an early age in schools. Akyol (2014, p. 50) identifies the following conditions as being conducive to effective summarising:

- The original meaning should be retained.
- Some of the information should be deleted and some of it should be retained. This is a process of selection and abbreviation.
- Some information should be developed and expanded.
- The structure of the text should be learnt. Narrative texts are summarised more easily than informative texts. Long texts are more difficult to summarise and more tiring.

FRSOE Strategy (Forecasting-Review-Summarising-Organising-Evaluation)

One of the reading comprehension strategies, the RRR strategy, which comprises the stages of predicting, examining, summarising, organising and evaluating, was developed by Englert & Mariage (1991) to assist students who experience difficulties in learning to enhance their reading comprehension skills (Mariage, 1995, p. 216). The TOSR reading comprehension strategy comprises four stages: prediction and organisation of thoughts through the use of concept maps; summary of the text's main ideas based on its structural elements; and evaluation of comprehension through questioning and discussion.

The TCA reading comprehension strategy is presented as an exemplar of an efficacious approach to comprehending thematic texts, including explanatory, descriptive and narrative texts. TOSR is typically conveyed through "modelling" and "guiding" pedagogical approaches (Epçaçan, 2012, p. 219). The CBLT strategy provides guidance to students at all stages of the reading process, from before reading to after reading, and offers a structured framework for comprehension (Mariage, 1995, p. 216).

Students formulate predictions regarding the subject matter and central idea of the text, drawing upon the title and visual elements, and employing their existing knowledge. They then organise and classify these predictions about the text, forming various questions in the process. In the analysis stage, the student reads the text and attempts to ascertain the responses to the questions they have formulated previously by identifying the text's principal and secondary themes.

Subsequently, the student provides a summary of the text, delineating the principal ideas, events, setting, and temporal framework. Subsequently, students organise the knowledge they have acquired about the text through the use of concept maps, tables and figures.

The students are then evaluated using a variety of assessment tools, including questions, summaries, clarification of ambiguous points, and analysis of different interpretations (Mariage, 1995, p. 219).

Multiple Transition Strategy

The multiple-pass strategy consists of three different passes that encompass observation, examination, and problem-solving skills. In the first pass, the student reviews the main and subheadings, visuals, and introductory paragraphs of the text to identify the main idea.

The second pass involves a more detailed examination. Here, the student reads the entire text from start to finish, forms questions using clues to gain deeper understanding, and searches for answers within the text. In the third pass, all the questions related to the text are solved by the student, thus completing the analysis stage of the text (Dally, Chafouleas, & Skinner, 2005, p. 132).

DRTA Strategy (Directed Reading Thinking Activity)

The DRTA (Directed Reading Thinking Activity) strategy was developed by Russell Stauffer in 1969 to enhance reading comprehension.

Over the years, it has been updated and used to address students' comprehension gaps (Gillet & Temple, 2000; Tierney & Pearson, 1992; Tierney, Readence, & Dishner, 2000). The DRTA strategy provides

students with a reading purpose, activates their prior knowledge, allows them to develop prediction skills, and offers an environment for high-level thinking and social discussion of their thoughts (Ruddell, 2002, p. 121). Stauffer (1969) outlined the implementation stages of the DRTA strategy in four steps (Stahl, 2003, p. 10):

***Setting Reading Purposes**:* The teacher creates a discussion environment about the text. To capture students' attention and activate their prior knowledge, the title and visuals are examined through various questions. Students set their purposes for reading the text individually or in groups.

***Reading the Text**:* Before starting, the teacher divides the text into meaningful sections. Students read a section independently while the teacher monitors their reading and provides support as needed.

Developing Comprehension: The teacher facilitates a discussion based on students' previous experiences, goals, and what they have newly learned. Students are responsible for presenting evidence to support their claims in the group discussion. This process continues for each section of the text.

***Skill Training**:* This phase involves teaching skills such as writing, accessing resources, and developing competencies during reading."

SQ4R Strategy

The SQ3R (Survey, Question, Read, Recite, Review) reading strategy is one of the oldest and most widely used reading strategies (Artis, 2008; Carter, Bishop, Kravits & Block, 2005; Lipson & Wixson, 2003). This strategy was developed by Francis Robinson in the early 1940s (Robinson, 1946).

The SQ3R reading strategy enhances students' comprehension, improves their retention, and helps them manage their time effectively (Swennumson, 1992, p. 12). It is particularly beneficial for students as it encourages research, promotes active involvement in the process of making sense of the text, and positively contributes to the understanding and recall of information.

Through this strategy, students can effectively utilize their thinking skills. The strategy's emphasis on directing students to ask questions about the text, thereby encouraging active cognitive engagement, is perhaps its most significant benefit in improving reading comprehension (Gunning, 2003; Houtveen and Van de Grift, 2007)."

In the literature, researchers (Robinson, 1970; Gunning, 2006; Huber, 2004; Feldt & Hensley, 2009; Tama and McClain, 1998; Brown, 1992) have explained this strategy in five stages:"

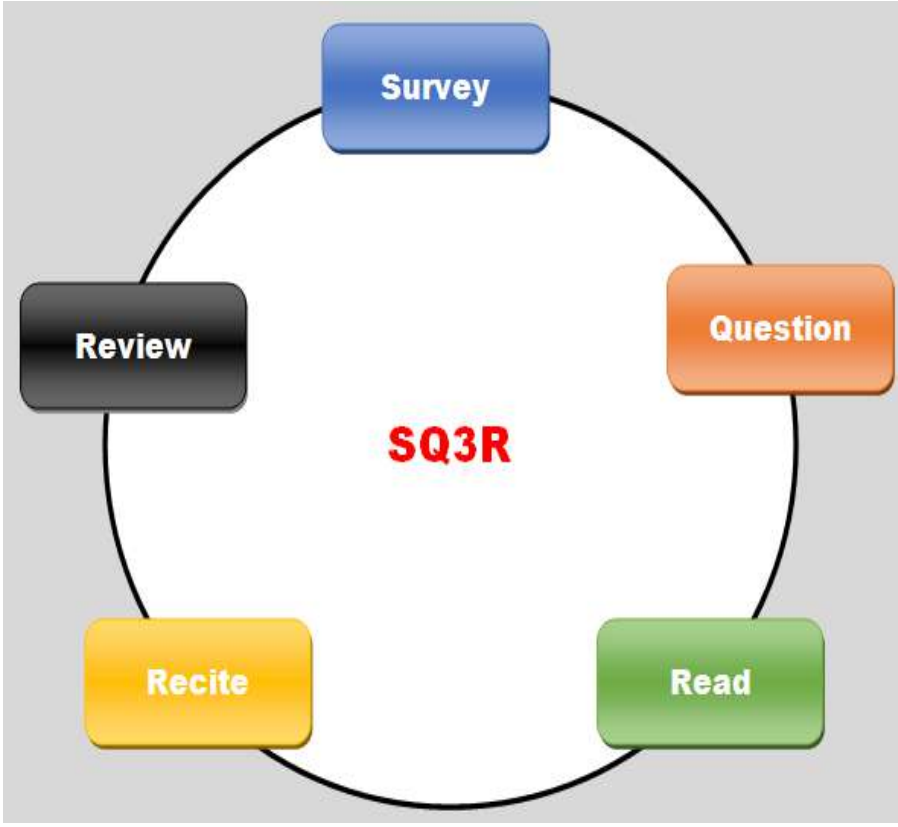

Figure1. SQ3R (Gunning, 2006; Huber, 2004; Robinson, 1970; Tama ve McClain, 1998, Brown, 1992).

Surveying: This is the stage before starting to read. During this phase, the main and subheadings, as well as the summary paragraph, are read. The images in the text are reviewed. At this stage, a general idea about the topic of the text can be formed. The introduction sections related to the text are examined. Efforts are made to grasp the meaning through visuals, tables, and graphs in the text. Summaries at the end of sections and questions related to the text are also reviewed.

Questioning: In this stage of the strategy, based on the review of the main and subheadings, students prepare questions related to the text.

This allows students to engage in the reading process by searching for answers to their own questions during the reading.

Reading: In this phase of the strategy, the text is read from start to finish with the aim of finding answers to the questions. During the reading process, important sections can be underlined, or short notes can be taken. If students feel the need to reread certain parts, they may do so. Additionally, after the initial reading, different reading styles such as paired, choral, and echo reading can be used.

Reciting: In this stage of the SQ3R strategy, students attempt to recall what was conveyed in the text. They try to briefly summarize the main points of the text. They answer the questions they prepared in the previous stage. If there are parts they cannot remember, they are allowed to refer back to the text.

Reviewing: In the final stage of the strategy, a general review is conducted. The notes taken during reading are examined, various connections are made, and the learned material is checked. Important points are reviewed, and if necessary, the text is read again.

The SQ3R strategy is a method that enables the use of multiple skills in understanding a text. A student employing this strategy in a text simultaneously utilizes skills such as researching, predicting, formulating questions, finding answers to those questions, expressing what they have learned, and making good observations. From this perspective, it becomes even more important to teach the SQ3R strategy to students from the early years. Furthermore, students who learn to effectively use the SQ3R strategy can increase their confidence in

reading comprehension and make significant contributions toward learning how to learn.

After SQ3R was developed, it inspired several similar reading strategies (such as FAIRER, PQ4R, SQ4R, SQ6R, SQ10R). SQ3R is known as the most widely used, studied, and still being researched reading strategy (Artis, 2008; Harlep & Forsyth, 2000; Jairam et al., 2013). The SQ10R strategy, in contrast to the SQ6R strategy, includes additional phases such as “Repeating, Reintegration, Rehearsing, Renoting, and Rereading.” The PQ4R strategy follows similar phases to the SQ4R strategy, but the “Survey” phase in SQ4R is referred to as “Preview.” In the FAIRER strategy, the phases differ slightly. The SQ6R strategy includes the additional phases of “Rethink” and “Reevaluate,” which are not present in SQ4R.

In the SQ4R (Survey, Question, Read, Reflect, Recite, Review) strategy, there is an additional "Reflect" phase that differs from the SQ3R strategy. In this phase, students synthesize what they have learned from the text with their prior knowledge and express themselves through various forms such as speaking, writing, poetry, or posters. They also relate the newly acquired information to new concepts. According to Epçaçan (2012, p. 216), the SQ4R strategy is specifically designed for use with expository and descriptive texts. It is particularly employed as a strategy to aid in the comprehension and retention of information. Figure 2 illustrates the stages of the SQ4R strategy.

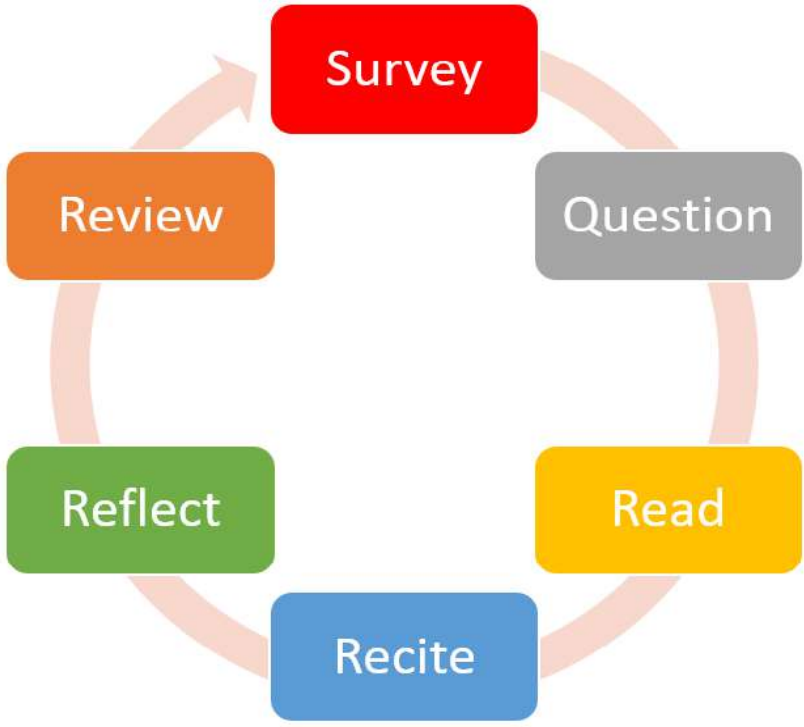

Figure 2. SQ4R Reading Comprehension Strategy (Epçeçan (2012, p. 216)

Survey: In this stage, students conduct a preliminary review of the text. Their prior knowledge is activated, and they examine the main and subheadings of the text. The students read the first and last sentences of paragraphs (ElKoumy, 2004, p. 51).

Question: At this stage, students prepare questions related to the text based on their initial review and curiosity. These questions can be prepared by the students themselves or by the instructor. Preparing these questions helps students activate their prior knowledge and develop a purpose for reading (El-Koumy, 2004, p. 51; Epçaçan, 2009, p. 216).

Reading: In this stage, the student reads the text. During the reading process, they search for answers to the questions they previously prepared. If necessary, they underline relevant sections and provide verbal or written responses (El-Koumy, 2004, p. 51; Epçaçan, 2009, p. 216).

Reflecting: Here, the student evaluates the text. They answer the previously prepared questions and summarize the content (Epçaçan, 2009, p. 216). During the reflection stage, students combine their prior knowledge with the new information they've learned and may create a product such as a poem, poster, visual, or graphic as a result.

Reciting Without Looking: In this phase, the student retells the text in general terms and checks their understanding.

They recount the events and situations in the text in the order they occurred and verify the answers to the questions (El-Koumy, 2004, p. 51).

Reviewing: In the final stage, the student reviews the text as a whole. This allows them to revisit the content, check any parts they may have forgotten or were unsure about, and consolidate their understanding (Epçaçan, 2009, p. 216).

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CHAPTER 3

IMPACT OF CREATIVE THINKING AND ACHIEVEMENT MOTIVATION ON ACADEMIC PERFORMANCE OF SENIOR SECONDARY SCHOOL STUDENTS IN JIGAWA STATE

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INTRODUCTION

Education is a cornerstone of societal progress and individual development. In Nigeria, the senior secondary school phase is vital as it prepares students for higher education and future careers. Academic performance at this stage significantly influences students' future opportunities. Therefore, understanding the factors that affect academic performance is essential for educators, policymakers, and researchers.

Creative thinking involves generating innovative and valuable ideas, making connections between seemingly unrelated concepts, and approaching problems in novel ways. It is essential across all fields, including science, technology, and mathematics. In education, creative thinking helps students comprehend and retain information, solve problems more effectively, and develop critical thinking skills. Research indicates that fostering creative thinking in students can enhance academic performance by encouraging deeper engagement and understanding.

Achievement motivation refers to an individual's drive to succeed and excel in tasks. It is a crucial factor in academic performance, as motivated students are more likely to set and achieve goals, persist through challenges, and take responsibility for their learning. Society and policymakers have increasingly recognized that psychological factors, not just paper qualifications, play a significant role in determining success.

This shift in focus is reflected in the use of psychological tests for various purposes, such as the U.S. military's post-World War II recruitment. Recently, Jack Ma, CEO of Alibaba, highlighted the need for education systems to emphasize creativity and creative thinking. Prominent motivational speakers like Brian Tracy, Ben Carson, Zig Ziglar, T.D. Jakes, and Napoleon Hill also emphasize achievement motivation. The potential however, drives them into hitting their targets faster than such others.

It serves as the motivator, thereby making them over achievers, Uyang (1955) subscribed that this category of individuals are seen to accomplish tasks much beyond those normally expected of them. Achievement motive is a social need including overcoming barriers, achieving high standards, competing with others and overtaking them (Hasanzadeh, 2009).

Theories of achievement motivation, such as Atkinson's Achievement Motivation Theory and Deci and Ryan's Self-Determination Theory, underscore the importance of intrinsic and extrinsic motivations. Intrinsic motivation involves engaging in activities for their own sake, driven by interest and enjoyment, while extrinsic motivation involves

performing tasks for external rewards or to avoid negative consequences.

Good academic performance is a key benchmark for educational institutions. Teachers are encouraged to enhance their teaching methods to ensure students understand and apply the knowledge provided. Learning institutions also strive to create a positive, flexible, and supportive learning environment to foster good academic achievement.

Academic performance encompasses grades, test scores, and overall educational attainment, influenced by cognitive abilities, socio-economic status, teaching quality, school environment, and psychological factors like motivation and self-esteem.

Jigawa State, in northwestern Nigeria, faces unique educational challenges, including limited access to quality education, socio-economic barriers, and cultural factors that impact academic performance. Understanding the specific context of Jigawa State is essential for developing effective educational interventions tailored to its students' needs.

From the above, it is clear that the global significance of achievement motivation and creative thinking cannot be overstated in shaping a well-rounded individual, especially in the context of formal education and academic performance.

Despite ongoing debates about the factors affecting students' academic performance in Jigawa State, the administration has emphasized and invested resources in qualifying exams for senior secondary schools. These exams are designed to predict the results of the final Senior

Secondary School Certificate Examinations (SSCE) accurately. The Jigawa State government ensures that only qualified students take the SSCE, treating the qualifying exams as practice tests with similar standards. Given the economic situation, it is crucial to consider all factors linked to academic performance.

Statement of the Problem

Poor academic achievement, as evidenced by the yearly SSCE results, often leads to lost opportunities for further education for many students in Jigawa State. To counter this, students and teachers are increasingly resorting to desperate and sometimes illegal means to succeed in examinations, regardless of academic or professional competence. This rise in examination malpractice has become a significant issue, making it difficult to equate individuals' competence with their academic achievements as represented by their certificates. It is evident that students who lack motivation to succeed will not put in the necessary effort.

The academic performance of senior secondary school students in Jigawa State has been a concern for educators, policymakers, and parents. Despite various interventions and educational reforms, many students continue to underperform, affecting their prospects for higher education and future employment. Understanding the factors that contribute to academic success is crucial for developing effective strategies to improve educational outcomes. Two such factors identified in educational research are creative thinking and achievement motivation. However, their specific impact on students'

academic performance in Jigawa State remains under-explored. This study aims to investigate how these factors influence academic performance, providing insights to inform educational practices and policies aimed at enhancing student achievement. The researcher's interest in this area is driven by the need to address the discrepancy between investment and results in Jigawa State's secondary education system by examining the influence of achievement motivation and creative thinking.

Objectives of the Study

The objectives of the study are to determine:

1. Difference in academic achievement between students with high achievement motivation and students with low achievement motivation of senior secondary schools students in Jigawa State.

2. Difference in academic achievement between students with high creative thinking and students with low creative thinking of senior secondary schools students in Jigawa State.

Research Hypotheses

Based on the above objectives, the following null hypotheses were formulated:

HO1. There is no significant difference in academic achievement between students with high achievement motivation and students with low achievement motivation in senior secondary schools, Jigawa State.

HO3. There is no significant difference in academic achievement between students with high creative thinking and students with low creative thinking in senior secondary schools of Jigawa State.

Significance of the Study

This research aims to provide valuable insights into achievement motivation, creative thinking, and self-regulation, benefiting various stakeholders in education. Teacher-educators will find the study useful as it highlights the importance of equipping teacher trainees with the skills necessary to enhance students' achievement motivation, creative thinking, and self-regulated learning strategies. This knowledge will improve students' memory and comprehension of academic tasks.

Teachers and parents will gain an understanding of the importance of creating supportive home and school environments that foster achievement motivation, creative thinking, and self-regulated learning strategies.

This environment will help students develop healthy behaviors, respect norms and values, and appreciate individual differences. Teachers will learn to identify students' capabilities and adapt their teaching, assessment, and evaluation methods accordingly, ultimately motivating and advising students to build self-esteem, self-regulation, and creativity.

Students will benefit by learning to utilize their potential, become self-regulated and self-esteemed, and adopt creative approaches to their studies. This research will guide them in setting realistic goals, employing effective strategies, and maintaining high levels of motivation, leading to improved academic performance. Additionally,

policymakers, particularly curriculum designers and educational inspectors, will gain insights into framing and designing curricula to enhance cognitive performance. Educational administrators will better understand the impacts of achievement motivation, creative thinking, and self-regulation on students, contributing to the development of well-rounded, motivated, and successful students.

The study also supports existing theories, such as Bandura's theory of self-regulation, by providing empirical evidence on the significance of role models in shaping academic behavior.

Methodology

In conducting this research, the ex-post facto research design was adopted. This design investigates possible cause-and-effect relationships between variables by observing existing conditions and looking back in time for potential causal factors. It is particularly useful for studying phenomena that have already occurred and cannot be manipulated by the researcher (Cohen, Manion & Morrison, 2007). The study examined the influence of achievement motivation, creative thinking, and self-regulation (independent variables) on students' academic achievements (dependent variable), which had already occurred.

Therefore, the ex-post facto design was appropriate for identifying and describing the extent to which these factors influenced the academic performance of senior secondary school students in Jigawa State. This design allowed the researcher to compare variables and make inferences about their differences, with many scholars agreeing on its effectiveness for such data collection.

The study's population included all male and female senior secondary school students in five education zones of Jigawa State, totaling 19,629 students during the 2019/2020 academic session. The population consisted mostly of Muslims from the Hausa/Fulani and Mangawa ethnic groups in both rural and urban areas.

A sample size of 372 students was determined based on recommendations by Research Adviser (2006), ensuring proportional representation of male and female students.

The multi-stage sampling procedure was employed, starting with the systematic selection of twenty schools from a list provided by the State Ministry of Education, Science, and Technology. In the second stage, stratified non-proportionate sampling ensured gender equality among the sample subjects.

Systematic sampling was used in the third stage to select individual sample subjects from the senior secondary schools. Data collection instruments included the Achievement Motivation Inventory (AMI) and Creative Thinking Scale (CTS).

Validity testing was conducted with experts' input to ensure content and construct validity. Data collection involved obtaining consent from relevant authorities and administering the instruments with the help of research assistants. The analysis used descriptive statistics and T-tests to test hypotheses at a 0.05 significance level.

Analysis

The data for the present study comprise raw scores of the variables under this study which include; level of achievement motivation, level of Creative thinking, and level of self-regulation as well as the Influence of Achievement Motivation and Creative Thinking on Academic performance among Senior Secondary School Students of Jigawa State.

The summary of such data was organized by the used of descriptive statistics of mean and standard deviation of each set of raw data as presented below:

Testing Hypotheses

Hypothesis One*:*

There is no significant difference in academic performance between students with high achievement motivation and students with low achievement motivation in senior secondary schools, Jigawa State.

Table 1: T-test analysis on difference in academic performance between students with high achievement motivation and students with low achievement motivation

Variables	**N**	**Mean**	**SD**	**t-value**	**Df**	**P-value (2-tailed)**
High level of AM	178	61.89	16.396	3.893	372	.018
Low level of AM	194	58.00	15.146			

Table 1 shows that the p-value for the t-test for equality of means under the assumption of equal variances is less than the level of significance (0.018 < 0.05). Therefore, the test is significant, leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis. The results indicate a significant difference in academic performance between students with high and low achievement motivation in senior secondary schools in Jigawa State. Specifically, students with high achievement motivation have significantly higher academic performance than those with low achievement motivation. The findings favour students with high achievement motivation.

***Hypothesis Two**:*

There is no significant difference in academic achievement between students with high creative thinking and students with low creative thinking in senior secondary schools of Jigawa State.

Table 2: Analysis on difference in academic performance between students with high creative thinking and students with low creative thinking.

Variables	N	Mean	SD	t-value	Df	P-value (2-tailed
High level of creative thinking	173	62.53	15.158	3.061	372	.002
Low level of creative thinking	199	57.54	16.119			

Table 2 presents the t-test analysis comparing academic performance between students with high creative thinking and those with low creative thinking in Jigawa State's senior secondary schools.

The t-value was found to be 3.074 with a degree of freedom of 370 and a p-value of .000. Since the p-value of .000 is less than the significance level of 0.05, the null hypothesis, which states that there is no significant difference in academic performance between students with high and low creative thinking, is rejected.

This indicates that students with high levels of creative thinking perform better academically than their counterparts with low levels of creative thinking. The results favour students with high creative thinking.

Discussions on Findings

This study aimed to investigate the influence of achievement motivation, creative thinking, and self-regulation on the academic achievement of senior secondary school students in Jigawa State. The findings are discussed and compared with previous empirical studies, with discussions framed by the research questions and null hypotheses that guided the study.

The first key finding revealed a significant difference in academic performance between students with high and low achievement motivation in Jigawa State's senior secondary schools.

This aligns with the findings of Chetri (2014) and Matuga (2009), who also reported a strong positive correlation between academic success and achievement motivation. It was suggested that achievement motivation training could significantly improve the academic performance of underachieving students in developing countries.

Additionally, the study found a significant difference in academic performance between students with high and low levels of creative thinking. This finding corroborates the research by Saeideh and Nooreen (2018) and Aleksandra (2017), which demonstrated a significant positive relationship between creativity and academic achievement, as indicated by the Pearson Correlation coefficient used in this study.

Conclusion

The study of the impact of creative thinking and achievement motivation on academic performance in Jigawa State is a vital area of research that can contribute to improving educational outcomes and addressing the unique challenges faced by students in this region. By exploring these factors, the study aims to provide insights that can guide educational interventions and promote the academic success of senior secondary school students in Jigawa State.

Recommendation

1. Parents and instructors should actively encourage students' achievement motivation, creative thinking, and self-regulation, as these factors significantly influence academic performance.

2. Teacher and student discussions during assemblies should focus on fostering strong achievement motivation, creative thinking, and self-regulated learning. Additionally, school administrators should implement guidance and counselling programs in their schools.

3. Community-based groups and parents should provide support and encouragement to children to help boost their academic success in various subjects.

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