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READING COMPREHENSION SKILLS OF STUDENTS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES: TEACHING PRACTICES WITH TECHNOLOGICAL TOOLS

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Abstract:
Students with intellectual and developmental disabilities exhibit heterogeneity in their learning readiness and reading skills in secondary education. Special education teachers are tasked with addressing their multiple needs by leveraging both their abilities and teaching strategies at their disposal. The purpose of this study is to present applied teaching practices utilizing differentiated instruction, teaching techniques, and technological tools to support reading skills in heterogeneous groups of students attending secondary education. The design of teaching practices involves the application of the methodology of observation and intervention in the context of a targeted, individual, structured, integrated program of special education and training. Students' skills regarding learning readiness and reading abilities are recorded with specific objectives, and activities are defined with certain pedagogical materials. In the conclusions of this study, a discussion is attempted regarding the implementation of differentiated teaching methods in secondary education, which allow for the utilization of teaching techniques through assistive technology. Additionally, emphasis is placed on the use of educational games for understanding school subjects, such as literature.

Keywords: intellectual and developmental disabilities, teaching practices, secondary education, technological tools

1. Introduction

Students with intellectual and developmental disabilities exhibit considerable heterogeneity in their academic abilities (Sevcik et al., 2019). Researchers emphasize that

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one of the challenges facing this particular student group is reading comprehension (Nilsson et al., 2021). Due to these difficulties, the educational community places more emphasis on cultivating life skills, believing that these students cannot develop reading comprehension skills (Kluth & Chandler-Olcott, 2008).

However, studies indicate that students with intellectual and developmental disabilities have the ability to develop their reading skills with appropriate educational strategies (Allor et al., 2018). Differentiated instruction is one such strategy, providing teachers with pedagogical practices for assessment and intervention (Panopoulos & Drossinou-Korea, 2021; Sousa & Tomlinson, 2011). Additionally, as technology advances, teachers have access to technological tools and educational games to enhance student interest and engagement in the learning process (Mukh et al., 2023).

In this study, a teaching plan with practices implemented in secondary special education classrooms is presented. These specific teaching practices are updated based on international literature and designed according to the methodology of observation and intervention (Drossinou-Korea, 2017).

2. Literature Review

2.1 Intellectual and Developmental Disabilities

The term "intellectual and developmental disabilities" refers to a broad spectrum of developmental challenges arising from known or unknown factors, as well as their combinations, such as genetic disorders, environmental factors, injuries, illnesses, etc. These disabilities affect an individual's physical, cognitive, or psychological development, as well as multiple areas of functioning, including learning, language, mobility, self-direction, self-care, ability for independent living, and economic self-sufficiency (Bacherini, Pierluigi, & Balboni, 2024; Petrenko, 2013).

The use of this specific disability term pertains to a group of individuals diagnosed with difficulties such as intellectual disability, syndromes, autism spectrum disorder, neurological conditions like cerebral palsy and epilepsy, etc. (Klein-Tasman & Mervis, 2018; Tsagaris, Seck, Keeler, & Rowe, 2016).

The common characteristic of these developmental difficulties is deficits in cognitive functions, such as reasoning ability, problem-solving, planning, abstract thinking, judgment, academic learning, and learning from experience. Furthermore, challenges may arise in functional and adaptive behavior, which relates to how individuals operate and solve everyday problems in three skill areas: perceptual skills, social skills, and practical skills (Joseph et al., 2023).

2.2 Reading Comprehension Skills

The ability of reading comprehension in students with intellectual and developmental disabilities is the least developed skill among all academic abilities (Dessemontet et al., 2021; Nilsson et al., 2021).

Acquiring reading comprehension presupposes phonological awareness, letter-sound correspondence (phonics), fluency, vocabulary, and understanding of content (National Institute of Child Health and Human Development (NICHHD), 2000). According to Joseph et al., (2023), text comprehension is a complex and challenging process for students with intellectual and developmental disabilities, as they need support to activate their prior knowledge, understand the text structure, identify main ideas, learn word meanings, and draw conclusions.

Students with developmental difficulties exhibit weaknesses related to reading comprehension, such as attentional focus, working memory, auditory comprehension, decoding, fluency, motivation, self-esteem, generalization, and linguistic skills (speech difficulties, limited vocabulary, restricted grammar and sentence structure) (Nilsson et al., 2021). Furthermore, Segers et al. (2016) stated that home environmental factors (such as reading frequency, reading climate, and parental education) were associated with reading comprehension through phonological awareness, word decoding, and vocabulary.

These particular students are often taught literacy skills aimed at acquiring functional life abilities, without being given the opportunity to comprehend texts. This poses a barrier to their social inclusion. The problem may possibly stem from the perception that students with intellectual and developmental disabilities are unable to learn other, more complex aspects of literacy (Kluth & Chandler-Olcott, 2008). In reality, some teachers do not know how to implement instructional programs aimed at cultivating reading in students with intellectual and developmental disabilities, as they have not received the necessary training in this area and have not been provided with relevant professional development through appropriate educational programs (Dessemontet et al., 2021).

Although research on literacy instruction at a higher level is limited, there are some studies that have shown that these students can comprehend texts (Allor et al., 2018; Joseph et al., 2023). There is strong evidence that students with intellectual and developmental disabilities can learn and make progress in the general education curriculum. It is not coincidental that there has been an increase in studies focusing on the learning of academic skills in students with this diagnosis. This significant increase indicates an educational trend to better support these students and the need for teachers to highlight improved academic outcomes. Additionally, there is a growing number of studies that do not focus on simple instructional goals, such as acquiring sight words or vocabulary, but rather explore more complex academic skills, such as reading comprehension and writing (Cannella-Malone et al., 2021).

According to Panopoulos & Drossinou-Korea (2019), teachers by considering the needs and abilities of students with developmental disabilities and modifying instructional materials, can support the reading skills of students with intellectual disabilities. Some students with such disabilities may interact with texts in unusual ways, such as being interested in the texture of a book or being captivated by its appearance. Others may be interested in reading books on a specific topic. All these behaviors should

be perceived as signs by teachers to create activities for the development of reading comprehension (Duffy, 2016). Additionally, some students may not use speech to communicate or may not have clear and precise speech. In this case, they may participate in the learning process by listening to and understanding the text from the teacher or another classmate (Mims, Hudson, & Browder, 2012).

According to Duffy (2016), the main purpose of reading is text comprehension, which involves examining the actions of characters, connecting these actions to the reader's experiences, weighing these actions against their own, and making predictions about what might happen next. Differentiating and adapting the text is a pedagogical approach for students with intellectual and developmental disabilities to engage with its content (Panopoulos & Drossinou-Korea, 2021). Additionally, teachers can pause the reading to explain their own thoughts regarding the protagonists' actions (teaching students how to think) or to draw students' attention. They can also discuss an interesting word and encourage students to use it throughout the day, as well as teach them to ask questions using interrogative words (e.g., who? what? where?) or to narrate the story in a structured manner (e.g., first, next, last) (Duffy, 2016). Furthermore, students might need more detailed analysis of concepts and terms with the help of visual conceptual aids or graphic organizers (Knight et al., 2013). In studies concerning text comprehension, researchers have shown positive results from utilizing teaching strategies such as, question generation, graphic organizers, and making predictions, while the use of technology to acquire reading skills is also popular (Cannella-Malone et al., 2021).

Afacan (2020), through a literature review, concluded on effective reading comprehension interventions for students with intellectual and developmental disabilities. Some of these include text adaptations (e.g., short texts, repetitive sentences/words, key ideas), completing graphic organizers, the system of least prompts/reinforcements, reciprocal teaching (prediction, questioning, clarification, and summarization), visual support, discussion, and the use of videos. Similar strategies are highlighted in the research of Lindström and Lemons (2021), such as worksheets for text comprehension with activities focusing on character analysis and narrative structure of events. However, these researchers emphasize that much greater progress is needed to adequately support these students in building foundational skills to become independent readers. Findings from the literature review by Joseph et al. (2023) indicate that, generally, students with intellectual and developmental difficulties can comprehend text through targeted strategies such as predicting, summarizing, paraphrasing, rereading, self-questioning, and identifying main ideas, teacher support and feedback, content repetition, and using pictures to demonstrate understanding are especially helpful for students with limited verbal expression. They also noted that text modifications and reading texts in segments while simultaneously completing a graphic organizer (rather than reading the entire text and filling out the organizer at the end) is a beneficial process. Finally, reading comprehension skills can be supported through one-on-one instruction or in small group settings.

2.3 Differentiated Instruction

In recent years, an increasing number of students with diverse needs, including those with special educational needs, are given the opportunity to follow the general education curriculum, albeit with the prerequisite of differentiated instruction. The use of differentiated methods is based on the premise that students are different and learn in different ways (Shareefa, 2021). This method emerged in the educational landscape when traditional teaching methods failed to meet the needs of all students in a classroom. One of the most significant drawbacks of traditional teaching is that instructional practice primarily focused on students who were at the average academic level of their class. This meant that the needs of students, especially those with special educational needs, were not met.

Students with special educational needs can develop skills to achieve instructional goals. Studies have reported positive effects of differentiated instruction on students' performance in reading fluency and comprehension (Baumgartner, Lipowski, & Rush, 2003; Potot et al., 2023). For this to occur, it is necessary to adapt the learning environment, content, process, and outcomes, taking into account the heterogeneous nature of the classroom rather than teaching all students uniformly (Sousa &Tomlinson, 2011).

Differentiated instruction is a significant area of educational research. Over the past two decades, studies on the subject have focused on teachers' attitudes towards its implementation and examined its use with the aid of technology to meet the individual needs of students (Sun & Xiao, 2021).

Nowadays, several developments in education have heightened the need for differentiated instruction. Specifically, modern classrooms are increasingly heterogeneous, and there is a growing recognition that students have different learning needs. The notion that a one-size-fits-all approach is inadequate is gaining ground (Smale-Jacobse et al., 2019). Although the concept of differentiated instruction is quite well-known, teachers struggle to understand how to apply it effectively in their classrooms (Strogilos et al., 2017).

According to Smale-Jacobse et al. (2019), there are few studies on the effectiveness of differentiated instruction in secondary education. However, they provide some guidelines for the positive expectations that can be had regarding its effectiveness. According to Shareefa (2021), the benefits of applying this method include progress in academic performance and positive psychosocial changes in students. Furthermore, it was found that its use helped create a positive attitude among both teachers and parents. On the other hand, challenges faced by teachers in implementing differentiated instruction are identified, related to lack of capability, lack of time due to high workload, and methods of assessing student learning.

Smets and Struyven (2020) argue that secondary education teachers need to provide learning opportunities to address the diversity of the classroom, which is shaped by students' learning readiness, interests, and learning preferences. Teachers' perceptions of classroom diversity determine their ability to provide differentiated instruction.

Therefore, to effectively address the heterogeneity of their students, teachers should not only be familiar with a variety of teaching techniques but also implement assessment strategies to evaluate the current and evolving heterogeneity of their classrooms.

2.4 Educational Games

Experts explore differentiated teaching practices that are effective and beneficial for students with disabilities (Moeller, Dattilo, & Rusch, 2015). In recent years, several educational techniques have been proposed, including game-based learning (Görgen et al., 2020).

As technology advances rapidly and people's desire for gaming increases, the contribution of games to the classroom is being explored. Educational games aim to facilitate knowledge acquisition and skill development through an enjoyable experience (Zeng, Parks, & Shang, 2020). Mukh et al. (2023) state that game-based learning is used to encourage students to participate in the educational process in a fun way. It is suitable for students with cognitive and developmental disabilities as it fosters social, communicative, and linguistic skills.

The primary characteristic of educational gaming lies in its ability to incentivize students, thereby transforming the learning process into a more engaging endeavor (Zeng, Parks, & Shang, 2020). Furthermore, rewards, peer interaction, feedback, challenge, errors, and trials inherent in gaming encourage active student participation, enhance their interest, and improve their self-efficacy (Petri & von Wangenheim, 2016).
There exists a wide spectrum of games, including digital and non-digital variants. Digital games are conducted through the use of smartphones, computers, tablets, etc., whereas non-digital games require alternative resources such as boards, cards, pencils, papers, etc. Moreover, educational games may encompass action, adventure, strategy, simulation, puzzle, quiz, and role-playing games, categorized into individual or group activities (Petri & von Wangenheim, 2016).

Hardiyanti and Azizah (2019) and Colpani and Homem (2015) advocate that educational gaming enhances the learning outcomes of students with cognitive disabilities compared to traditional methods. They further highlight the essential characteristics that educational games should possess, such as: a. content directly related to the educational material provided, b. tailored to the abilities of specific students (e.g., simple computer actions: with a click on the mouse button or touch screen), c. inclusion of text, sound, images, animated characters, or a combination thereof, d. provision of examples for executing each activity, e. font adaptability, f. utilization of bright colors for easier content comprehension, g. provision of rewards, h. feedback with messages encouraging success, i. provision of activities of varying difficulty levels, and j. provision of clear instructions during gameplay.

Research supports that through educational gaming, students can cultivate their reading skills (Bayatpour & Maghami, 2022). Lämsä et al. (2018) examined 20 studies, indicating that educational gaming enhances children's engagement in reading activities. Due to the appealing nature of games, the participation and reading interests of

secondary education students may increase. Considering that reading comprehension activities in school books may be limited, educational gaming serves as additional resource material for teachers (Bondaug, 2021). In a study by Tobar-Muñoz, Baldiris, and Fabregat (2017), reading comprehension activities with games provide motivational engagement as students enjoy the process while simultaneously enriching their knowledge. Aybekovna's article (2023) investigates reading instruction through educational games. It notes that using games for reading instruction in students may be a fun and engaging approach, but it may promote competition and, consequently, create an anxiety-inducing environment. It also highlights various factors that can influence the use of games in reading instruction for students, such as learning style, classroom environment, and the availability of technology, space, and resources. Additionally, it emphasizes that the application of games in reading instruction requires the definition of instructional goals, the selection of appropriate games and materials, a clear explanation of rules and instructions, and the definition of groups or pairs.

2.5 Technological Tools

The British Assistive Technology Association states that assistive technology, or supportive technology, encompasses any object, equipment, material, software, product, or service that maintains, increases, or improves the functional abilities of individuals of any age, particularly those with disabilities, enabling them to communicate more easily, learn, enjoy, and live better and independently (Watkins, 2014).

Assistive technology allows students with cognitive and developmental disabilities to access education and participate actively and independently in the educational process, interacting with their peers and gaining self-control (Drossinou, 1999; Devi & Sarkar, 2019).

Assistive technology can be of low or simple technology with equipment usually of low cost and easy to create or acquire (e.g., pencil, wheelchairs, etc.) or high and complex technology involving electronic and digital equipment (e.g., computers, accompanying software, etc.) (Fernández-Batanero et al., 2022).

According to Erdem (2017), the use of assistive technologies in the field of special education has positive effects on oral speech through the use of communication boards or picture communication books, eye-tracking devices, or speech-generating devices, image exchange communication systems, and applications that convert text to speech. Coleman et al. (2015) found that using PowerPoint presentations for vocabulary teaching had a positive impact on vocabulary improvement. Moreover, assistive technologies facilitate students' reading process through the use of adapted books, differentiated texts, the use of images in texts and audio texts, the utilization of magnifying lenses, electronic reading devices, text reading applications, modified electronic texts, Optical Character Recognition scanners, and text reading devices (Erdem, 2017; Devi & Sarkar, 2019).

The use of computers, tablets, standard or alternative keyboards enables students to learn new skills, acquire information, demonstrate what they learn in school, and participate in class (Svensson et al., 2021; Stephenson, 2015). Devi and Sarkar (2019) argue

that students with cognitive and developmental disabilities may need multiple opportunities to understand concepts, develop skills, and retain information. Assistive technology, such as computers, mobile phones, interactive whiteboards, games, images, videos, and virtual museums, serves as a tool to make educational environments multisensory, providing challenging and dynamic stimuli that contribute to the cultivation of academic skills.

3. Purpose

The purpose of this study is to present applied teaching proposals to support reading skills in heterogeneous secondary education classrooms. More specifically, the following are examined:

1) What teaching techniques for reading comprehension are proposed during the implementation of the differentiated method?
2) Which technological tools are recommended for the needs of students with cognitive and developmental disabilities?

4. Methodology of Teaching Scenario

4.1 Student Population of the Applied Teaching Scenario

The teaching practices presented in this paper have been implemented in special education and general education middle school classes. The uniqueness of these classes lies in the fact that teachers need to follow the general education curriculum. These classes are staffed with 8 or 9 students with intellectual and developmental disabilities, who experience difficulties and deficits due to the special educational needs with which they have been diagnosed (intellectual disabilities, autism spectrum disorder, syndromes and cerebral palsy with severe neurological, orthopedic impairments and epilepsy.

4.2 Tools for Evaluating Educational Plan

According to the methodology of observation, educational scenarios are structured and implemented utilizing systematic empirical observation. During this process, the familial (e.g., meetings between parents and teachers), school (e.g., previous pedagogical evaluations), and individual histories of the students (e.g., assessments from Centers for Interdisciplinary Evaluation, Counseling, and Support) are documented. Additionally, informal pedagogical assessment (initial, formative, and summative) is utilized, employing specific Basic Skills Checklists (BSC) that pertain to learning readiness and the Greek Special Education Curriculum Framework (SECF), which includes objectives and skills in areas such as reading, writing, and oral language.

In the intervention methodology, tools for evaluation include differentiated pedagogical materials and instructional interaction forms, with diary entries recorded through self-observation and peer observation.

4.3 Educational Plan with Teaching Practices for Students with Intellectual and Developmental Disabilities (Figure 1)

The educational plan with teaching practices was structured based on the methodologies of observation and intervention. It pertains to the subject of literature (cognitive domain) for the first grade of a special needs middle school. The allocated teaching time is 40 minutes.

The educational plan includes the lesson's purpose, in alignment with the General Education Curriculum ("Familiarization and engagement of students with literary texts"). The teaching objective ("To understand literary texts by reading, listening, or watching the content and responding to questions of varying difficulty levels") is articulated in the lesson plan, differentiated from the standard curriculum and broken down into teaching steps according to task analysis methodology, as the students are diagnosed with intellectual and developmental disabilities. Additionally, the lesson plan includes the expected behavior (e.g., anticipated outcomes, collaboration, autonomy, etc.).

These elements are defined based on the observation methodology, through which the students' learning profiles, readiness, and interests are assessed. Furthermore, using the same Basic Skills Checklists (BSC) for learning readiness and the Greek Special Education Curriculum Framework (SECF), the prerequisite skills for student participation in the learning process were identified.

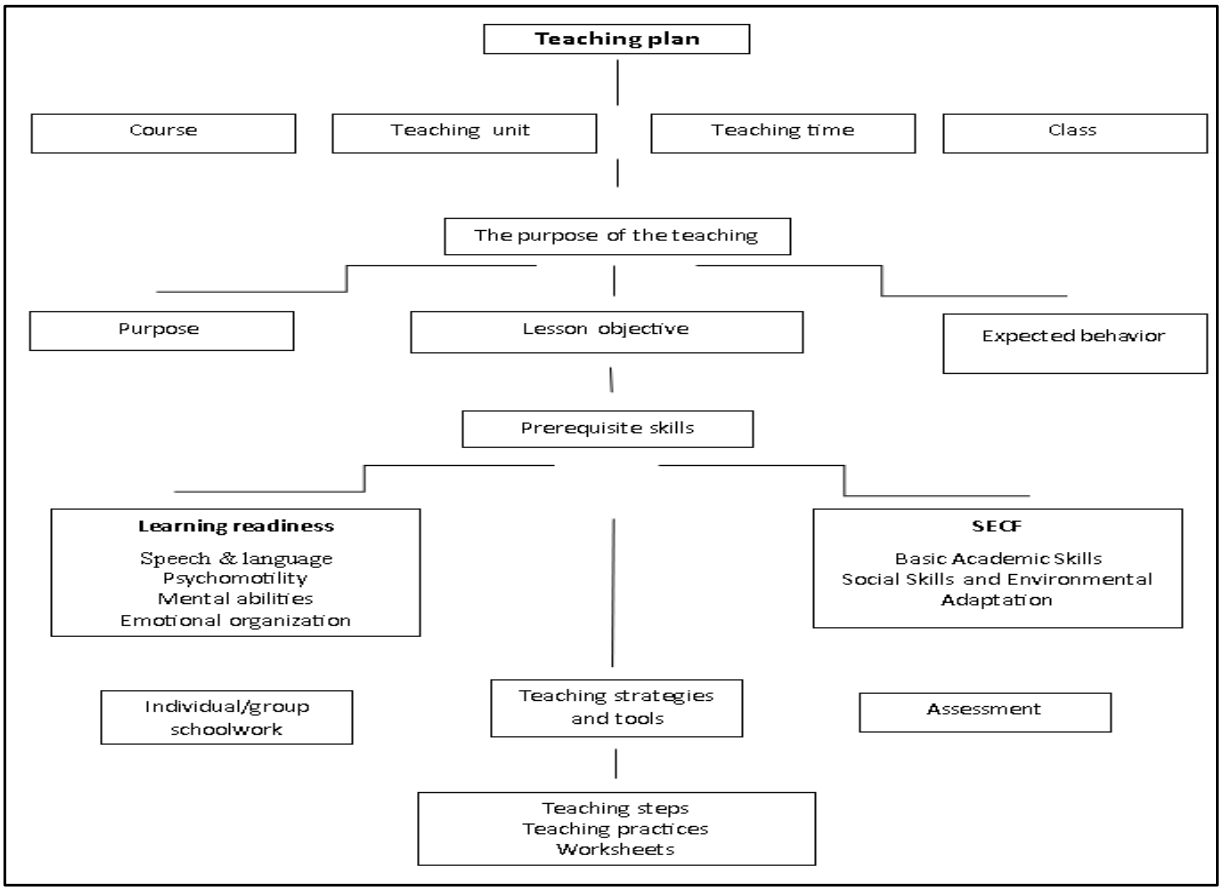

Figure 1: Teaching Plan for Reading Skills

Finally, based on the intervention methodology, the lesson plan specifies the group composition (individual or group work), the teaching strategies and tools, worksheets, assessment tools, and the teaching steps with practical applications.

4.4 Teaching Practices in Reading Comprehension

a. Teaching Practice: Priming for the Content to be Taught (figure 2)

In the interactive board, images related to the content of the literary text were displayed. This visual material served as a stimulus for issues addressed by the text (the relationship between elderly people and younger ones). Through the technique of "brainstorming," students discussed the visual material with or without their prior knowledge, focusing on the main points (using the technique of big ideas).

Figure 2: Displaying images depicting the relationship between elderly individuals and their grandchildren

b. Teaching Practice: Text Presentation

Students with cognitive and developmental disabilities, who were unable to read, listened to and watched a homemade video (using the Movie Maker application) with narrated visuals (utilizing images and designs from the site: https://www.storyboardthat.com) via the interactive board (Figure 3). Students in the class who had satisfactory reading levels read the literary text (131 words, font-size: 14), which was adapted to their abilities. The title of the text is "The Grandfather and the Grandson" by Leo Tolstoy (Figure 4).

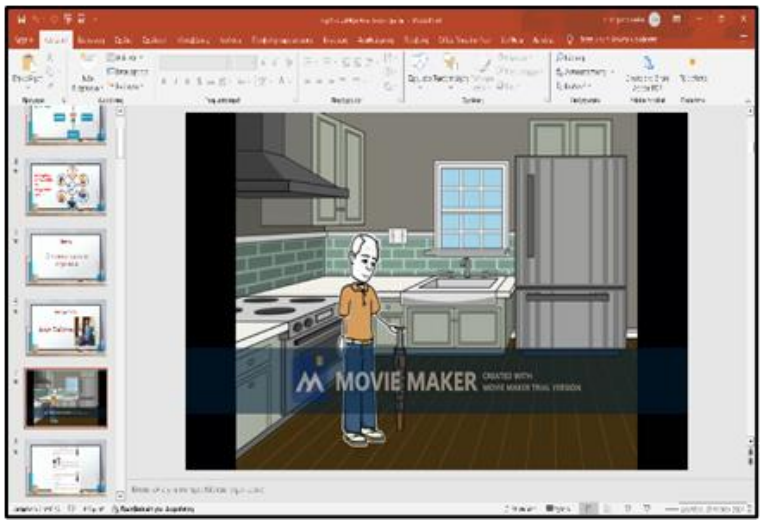

Figure 3: Presentation of text through improvised video

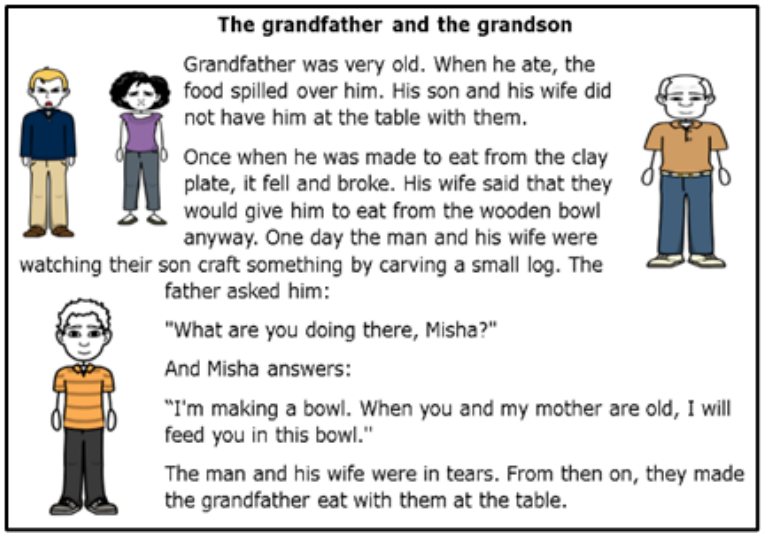

Figure 4: Differentiated literary text entitled: "The grandfather and the grandson"

c. Teaching Practice: First Teaching Step (Understanding literary text by reading, listening, or watching its content and answering related quiz questions)

Students with cognitive and developmental disabilities were divided into pairs and participated in an improvised PowerPoint game. Specifically, they were asked to answer quiz questions (who, where, when, why, how) (Figure 5). Each time a team answered correctly, a reward image appeared, while in case of a wrong answer, they could try again (Figure 6). Depending on their motor difficulties, students could participate either by using the interactive board of the classroom or a tablet.

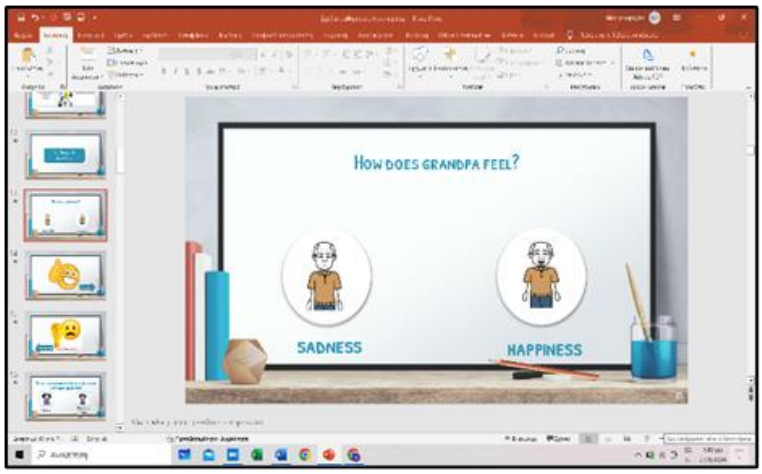

Figure 5: How does the grandfather feel? Sadness or joy?

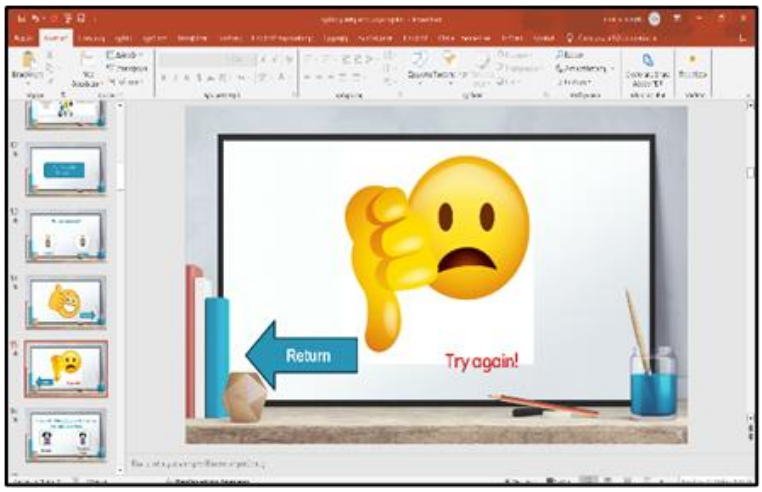

Figure 6: Wrong answer! Return and try again!

d. Teaching Practice: Second Teaching Step (understanding literary text by reading, listening, or watching its content and completing graphic organizers based on the text) Students, individually or with assistance from the educator, were asked to complete graphic organizers with the basic elements of the text (title, author, characters, time, place) and the chronological sequence of events (beginning, middle, end) (Figure 7). Depending on their fine motor skills level, students completed the graphic organizer by writing on paper, placing laminated cards, or touching the screen of a tablet.

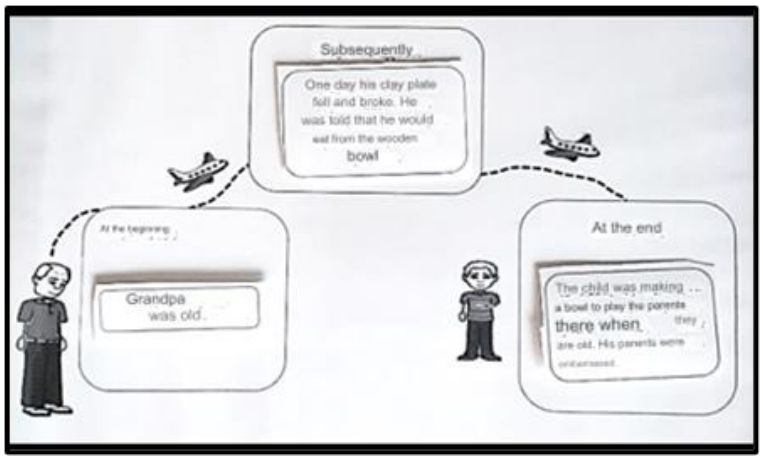

Figure 7: Graphic organizer for narrating events with the correct chronological sequence (beginning, middle, end) using laminated cards

e. Teaching Practice: Third Teaching Step (understanding literary text by reading, listening, or watching its content and drawing general conclusions through quiz questions)

Students with cognitive and developmental disabilities were divided into pairs and participated in an improvised PowerPoint game. Specifically, they were asked to answer quiz questions (who, where, when, why, how) (Figure 8). Each time a team answered correctly, a reward image appeared, while in case of a wrong answer, they could try again (Figure 9). Depending on their motor difficulties, students could participate either by using the interactive board of the classroom or a tablet.

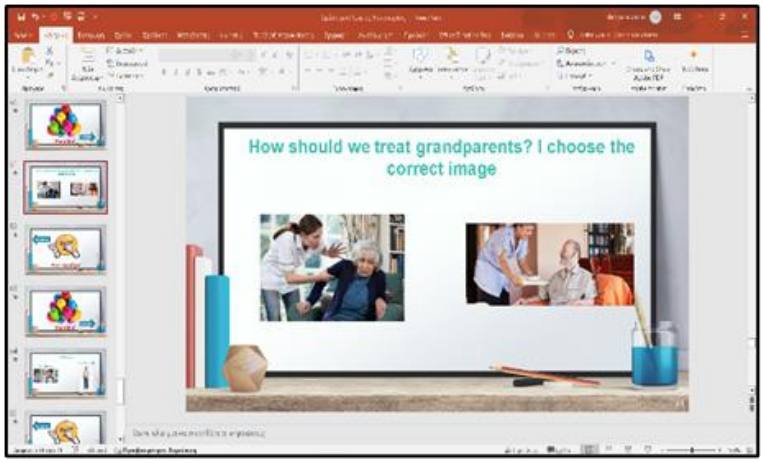

Figure 8: How should you treat elderly people? choose the correct picture

Figure 9: Correct answer reward

f. Teaching Practice: Recapitulation and Evaluation

The educator summarized the key points of the lesson, and the students completed an assessment worksheet. Depending on their abilities, they either wrote anything they liked or circled/showed the appropriate emoticon to express their feelings.

5. Results – Characteristics of Teaching Practices

a) Teaching Techniques for Reading Comprehension (Table 1)

The proposed educational plan includes techniques and strategies to support students with intellectual and developmental disabilities. Using the techniques of "priming" and "brainstorming" teacher can assess students' prior knowledge related to the new content being taught. This practice allows all students to engage by providing them the freedom to comment and express their opinions. Through discussion, the "big ideas" of the lesson are extracted.

The technique of "text differentiation" involves using images, simple vocabulary, and simple syntactic and grammatical structures, making the lesson content and curriculum objectives accessible. Presenting the text in various formats (printed material or video) according to the students' learning profiles creates a democratic classroom environment where all students can participate. Utilizing graphic organizers and educational games in PowerPoint (aligned with students' interests) contributes to better comprehension of the literary text, fosters reasoning skills, and enhances student engagement in the learning process.

b) Technological Tools for Reading Comprehension (Table 1)

The use of technological tools enables heterogeneous classes of students with intellectual and developmental disabilities to participate and interact during instruction. The large screen of the interactive whiteboard and the multimedia it provides (sound, images, brightness) enhance students' attention. Using images or visual conceptual aids serves as mnemonic devices for understanding the subject matter. Tools such as styluses, touch devices like tablets, and laminated cards with velcro for filling in graphic organizers

allow students, depending on their level of motor skill difficulty, to engage in the lesson. Video with visualized narration of the text can support students with decoding difficulties, reading fluency and comprehension issues, and speech difficulties. Similarly, differentiated printed text is selected for students with adequate reading skills. Homemade educational games using PowerPoint capture interest, increase competitiveness, and boost student motivation. Additionally, these games help reinforce new knowledge in a fun and playful manner.

Table 1: Teaching strategies and technological tools of reading comprehension

Course	Teaching strategies	Assistive technology	Skills
Literature	brainstorming, priming, big ideas, text differentiation, graphic organizer, e educational game, Teamwork	Interactive Whiteboard, pictures, paper, video, pencil tablets, laminated cards, paper	Language/speech comprehension Interesting motivation cooperation

6. Discussion and Conclusions

Students with intellectual and developmental disabilities exhibit a wide range of learning needs, and special education teachers are required to meet these specific demands. Differentiated instruction is recommended for their support as it allows for the application of various teaching strategies and techniques. This process necessitates the implementation of a Targeted, Individualized, Structured, Inclusive Program of Special Education and Training, which includes the methodology of observation with certain Basic Skills Checklists for learning readiness and basic school skills, as outlined by the Greek Framework for Special Education and Training, to gather information about students' learning readiness, interests, and profiles (Drosinou - Korea, 2022).

Difficulties in reading comprehension often prevent students with these diagnoses from engaging in the learning process, as they may face academic, linguistic, cognitive, and motor challenges. This paper presents an applied teaching plan, following the intervention methodology, with differentiated practices that can be implemented in special secondary education classrooms.

Specifically, this study highlights the creation of an engaging learning environment for students with intellectual and developmental disabilities. The advancement of technology and educational games can provide a quality learning experience (Zeng, Parks, & Shang, 2020). Through assistive technology tools such as computers or interactive whiteboards, the autonomy and self-esteem of students with intellectual disabilities are enhanced. These tools also offer increased opportunities for education and promote teamwork (Davies, Stock, & Wehmeyer, 2004; Apracik, Kurşun, & Göktaş, 2018). Technological tools help teachers develop teaching practices tailored to each student by modifying one or more aspects of the taught material, such as the method, quantity, assessment, assistance, environment, and material. This approach allows teachers to meet the educational needs of each student while working

simultaneously with more students with disabilities in the classroom (Devi & Sarkar, 2019).

Additionally, technology enables teachers to incorporate homemade educational games into their teaching plans to support reading comprehension skills (Aybekovna, 2023). According to Stančin, Hoić-Božić, and Skočić Mihić (2020), technological tools that can be utilized to integrate games into the learning process include computers and tablets, which support students with intellectual and developmental disabilities in developing reading skills.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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Dr. Nikolaos Panopoulos is a special education and training teacher in a secondary education school. His PhD concerned the special teaching methodology of language-reading skills for students with intellectual disabilities.

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