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Empowering E-Learning: Effective Strategies for Supporting Students with Learning Difficulties

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Abstract

This paper emphasizes the importance of inclusive engagement for students with learning difficulties (LD) in e-learning environments. It discusses effective teaching techniques and assessment strategies tailored to LD students underscoring the role of teachers and course designers in creating accessible, interactive educational experiences. The study highlights the use of technologies like text-to-speech software and digital storytelling to develop expression and comprehension. It also explores individualized instruction and continuous assessment as key intervention methods. Overall, the paper suggests that with proper strategies and tools, e-learning can greatly enhance educational outcomes for LD students.

Keywords: E-Learning, Learning Difficulties, Inclusive Education, Digital Tools, Distance Learning Strategies



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1. Introduction

In today's digital age, it's crucial to inclusively engage students with learning difficulties in e-learning environments. Effective strategies and tools are essential to ensure these students are not left behind. But, is that a sole responsibility of the teacher or course designers should take matters at hand?

This paper explores effective teaching techniques and assessment strategies for students with learning difficulties in distance learning environments, emphasizing the roles of teachers and course designers. First, there is a presentation of the techniques most teachers use in distance learning and the difficulties faced when teaching. Then, the benefits of new technologies in the teaching of English in distance learning to LD students are summarized and intervention techniques are suggested in a more critical analysis. The final part involves the assessment and feedback strategies implemented by teachers to address the specific needs of their students. The questions at hand revolve around how technological tools and educational software can aid LD students in the learning of English as a second language but also the potential drawbacks they might have. What new technologies can teachers exploit in e-learning environments to assist their students who already face another kind of difficulties in the learning of a language? Also, when it comes to assessment, what qualitative and quantitative tools and strategies can be used in order to assess students' progress fairly in e-learning environments?

2. PART 1

2.1. The Characteristics of an E-learning Class

E-learning is a specific type of delivering teaching which has some specific characteristics different from those in traditional classroom teaching environments. Distance learning involves improving knowledge and behaviors through mediated experiences constrained by time and distance, meaning learners and teachers do not share the same physical space (King at all., 2004). Based on the above definition of e-learning, it is clear that time and distance are two major factors which affect the quality of the teaching experience.

2.2. The Benefits of E-learning Instruction

E-learning offers numerous benefits, including cost-effectiveness, accessibility, and up-to-date resources. It enables students with affordable technology to participate in lessons and promotes retention through concise and relevant content. Another important advantage is that e-learning is interactive, collaborative and empowering. In those 'classrooms', learners are expected to work together in small chat rooms and with the teacher in an interactive way. Learners benefit from the use of media and increase ICT skills which is a vital set of skills needed in the 21st century. The teaching media used in distance learning are the computers, the internet and various educational sites. Teachers do not simply focus on the written material provided by the Ministry of Education, but they also enrich their teaching with a range of educational resources either created by them or found ready-made online.

2.3. Synchronous and Asynchronous learning

Another important aspect of e-learning is the presence of the participants. There are two different situations embodied in distance learning. The synchronous and asynchronous teachings are two categories included in distance learning. Synchronous learning involves real-time interaction between teachers and students from different locations, facilitating immediate communication. Learners and the teacher can actively engage in interaction with straightforward questions and answers. In contrast, asynchronous learning allows students to study the provided materials at their own pace without real-

time interaction. There is not an immediate interaction with the teacher and correspondence is made mostly through emails.

2.4. Teacher's Role vs Learner's Role

The role of teachers in e-learning environments is essential as they guide learners through the material, clarify concepts, and manage technical and organizational aspects. Conversely, learners must be adept with technology, collaborate effectively, and develop self-monitoring skills. The teacher is responsible for overseeing instruction; they address time constraints, media usage, material creation, and interaction organization. In synchronous learning, the teacher must be capable of solving any technical issues and arranging learners into groups for group work. As Moore (1997) found in her research, teachers identified their roles in facilitating the learning process with their students. Also, teachers noticed "a change in their role as they moved from course design to course delivery".

Accordingly, the learner's role is equally significant. Learners must be capable of using the platforms and the necessary technological equipment and willing to cooperate with classmates in any group or pair work. They are also responsible for creating their studying schedule, becoming autonomous learners and developing self-monitoring skills.

2.5. Differences between E-learning and Traditional Learning

A significant difference between e-learning and traditional classrooms lies in communication. Traditional classrooms facilitate immediate, unfragmented responses and leverage body language for richer interaction. E-learning relies primarily on digital communication, which can disrupt immediacy and emotional connection. In a traditional classroom, responses are instant and communication is not scattered. The teacher can ask questions and get immediate replies without any obstacles. Unlike e-learning, the mode of communication is mainly oral discourse and body language. Learners get a plethora of information regarding the lesson by the teacher's body language and signs. The same is true for the teacher, who is aware of their students' physical and emotional state during the lesson. Nevertheless, in e-learning the notion of immediacy is diminished. The mode of communication is the computer varying between oral and written discourse (chat rooms). The teacher and the students appear not to have access to body language and other signs of posture, since the only thing they see is a face on their screen. Communication, then, can be disrupted and control over emotional state is loose or even non-existent.

According to Allen and Seaman (2017), traditional learning environments provide structured schedules and physical spaces conducive to focused study and peer collaboration. The physical presence of instructors and peers can enhance engagement and motivation, as well as facilitate the development of social skills and networks that are beneficial in academic and professional contexts (Hattie, 2009).

Another salient difference between the two modes of teaching and learning is the use of teaching practices which are transformed according to the mode of lesson delivery. In the case of traditional classroom setting, the teacher can make use of the whiteboard, the textbook, a projector, a computer and probably an audio player. The concept of paperless and pen-less classrooms are developed as an alternative to the old teaching learning method. The teacher can make use of multimedia to present the taught material in a more meaningful way, using the different media elements. As Judhav (2020) points out, the use of different sensory modalities makes students more motivated to be concentrated and memorize the information better. Another innovative teaching technique used in e-learning is the organization of the information presented in mind maps which is a simple technique for drawing the information in diagrams instead of writing in sentences.

Presence is also a major factor that characterizes the two ways of teaching performance. In the instance of traditional classroom, the teacher and the students are both located in the same room under

the same roof. Unlike traditional teaching, e-learning presupposes that students and the teacher are located elsewhere, in different places. This mode of learning is particularly advantageous for non-traditional students, such as working professionals or those with care giving responsibilities. However, the lack of face-to-face interaction in distance learning can pose challenges in maintaining student engagement and motivation, potentially leading to higher dropout rates (Hart, 2012).

2.6. Characteristics and Challenges of Students with Learning Difficulties

2.6.1. Causes of LD

Learning difficulties (LD) affecting many students stem from genetic, neurological, and environmental factors. Genetic predispositions significantly contribute to LDs like dyslexia and ADHD, which often run in families. According to a study by Scerri and Schulte-Korne (2010), genetic variants can influence brain development and cognitive functions, predisposing individuals to learning challenges. Learning disabilities may also involve difficulties with organizational skills, social perception, social interaction perspective taking. Neurological factors, including atypical brain structure and function, also contribute significantly to learning difficulties. Shaywitz and Shaywitz (2008) highlight that individuals with dyslexia exhibit differences in brain areas related to language processing, which can impede reading and writing abilities.

Environmental influences, particularly during critical periods of brain development, are also pivotal in the manifestation of learning difficulties. Prenatal factors such as maternal health, exposure to toxins, and nutrition can have lasting impacts on a child's cognitive development (Hepper et al., 2005). Postnatally, early childhood experiences, including the quality of stimulation and educational opportunities, significantly affect learning outcomes. Bradley and Corwyn (2002) emphasize that children from socioeconomically disadvantaged backgrounds often face barriers such as limited access to educational resources and less stimulating home environments, which can hinder cognitive and academic development.

Moreover, learning difficulties can be aggravated by psychological and emotional elements building up to a diverse challenge for individuals. Feelings of anxiety, depression and low self-esteem are usually among students with learning difficulties, often created by recurrent academic failures and unconstructive feedback from classmates and teachers (Nelson & Harwood, 2011). Concentration, memory and motivation are highly influenced by these emotional issues resulting in a vicious cycle of underachievement. Effective intervention strategies, therefore, need to tackle both the cognitive and emotional perspectives of learning difficulties, offering comprehensive support to assist students overcome these difficulties and achieve their academic potential.

Learning disabilities vary in severity and may interfere with the acquisition and use of one or more of the following:

- Oral language (e.g. listening, speaking, understanding)
- Reading (e.g. decoding, phonetic knowledge, word recognition, comprehension)
- Written Language (e.g. spelling and written expression)
- Mathematics (e.g. computation, problem solving)

Learning disabilities persist throughout a person's life, manifesting differently as the individual ages due to the interplay between environmental demands and their strengths and needs. These disabilities are often indicated by surprising academic underperformance or by achievement that is sustained only through extraordinary effort and support. According to Ahmed Saad ElSayed Salem (2014), "The specific needs of individuals with learning disabilities change and evolve throughout their lifetime. This does not mean the disability no longer exists, but by varying the activities they undertake and the strategies they develop to address their particular learning disabilities; students may experience different challenges at different times".

2.6.2. Writing and Reading

Among the more severe difficulties students with learning difficulties face in writing is the way they structure their thoughts, abide by grammatical rules and persevere coherence. In reading, they encounter difficulties with decoding, fluency, and comprehension, while in writing by organizing their ideas in a coherent, cohesive and grammatically accurate manner. As Berninger and May (2011) point out, these challenges aggravate due to difficulties with fine motor skills and the cognitive processes implicated in planning and revising texts. Clear and effective written communication is hindered by spelling errors and narrow linguistics sources.

Some of the most frequent problems students with learning difficulties typically face are decoding, fluency and comprehension. The inability to accurately decode words, such as in dyslexia, impairs the recognition of words and their understanding of the text, which decreases their reading speed and overall comprehension (Shaywitz & Shaywitz, 2008). It takes much longer for these students to detect the main idea and details of a text as more time is needed to read. Therefore, critically engaging and analyzing the reading sources becomes a great barrier to their academic success.

Moreover, lower levels of reading motivation and self-reliance are signs most students with learning difficulties exhibit which make their difficulties seem insuperable. Following Morgan et al. (2008), constant unsuccessful attempts in reading tasks may result in higher frustration and negative self-image, further decreasing their eagerness to be involved in reading activities. This lack of engagement influences their reading skills and has a broader impact on their overall academic achievement, since reading is an integral part of learning across all subjects.

2.6.3. General difficulties faced in all 4 skills

Students with learning disabilities often struggle with the four essential language skills: listening, speaking, reading, and writing. Research indicates that auditory processing deficits and phonological awareness problems significantly impair listening comprehension (Sparks & Ganschow, 2001). In terms of listening, these students often find it challenging to process and understand spoken language, particularly when it includes complex syntax, fast speech, or unfamiliar terms. Sparks and Ganschow (2001) indicate that common issues such as auditory processing deficits and phonological awareness problems substantially impair these students' ability to differentiate and understand sounds in a foreign language. This impairment affects their capacity to follow conversations, instructions, and classroom discussions, thus limiting their overall comprehension and interaction in the language.

In speaking, students with LD may face difficulties in pronunciation, fluency and expressive language. Phonological processing and memory deficiencies can lead to mispronunciations, hesitations and limited vocabulary usage. As noted by Kormos and Smith (2012), these issues can lead to reduced confidence and increased anxiety in oral communication, further exacerbating their speaking difficulties. Moreover, in reading and writing, decoding foreign words poses a great challenge to these students. Also, understanding grammatical structures and producing coherent written texts seems to be a strenuous and rigorous process for students with LD.

2.6.4. Comprehension of the rubrics and instructions

Following the above – mentioned difficulties, learners find it extremely demanding to follow written instructions and rubrics. Due to the lack of decoding strategies and skills, they often struggle to understand what is expected of them in a specific activity or task. These difficulties stem from various cognitive challenges, including issues with processing speed, working memory, and language comprehension. As noted by Smith and Tyler (2010), students with learning disabilities may find it arduous to decipher complex or lengthy instructions, leading to confusion and incomplete or incorrect task execution. Additionally, students may feel overwhelmed by the abstract language and detailed criteria commonly

found in rubrics, making it hard for them to grasp the specific requirements for assignments. This can lead to underachievement and heightened anxiety as they may not fully comprehend how to meet the academic benchmarks set forth. Therefore, teachers need to provide clear, concise and well-structured instructions and rubrics, possibly accompanied by visual aids or step-by-step guidance to ensure that students achieve academic success.

2.6.5. Lack of immediate support by the teachers

Teachers cannot often provide immediate and effective support to students with LD, which can significantly impede these students' academic progress. This deficiency is often due to insufficient training and professional development in special education strategies. As noted by Scruggs and Mastropieri (2017), many teachers are not adequately equipped to identify and meet the specific needs of students with LD in general education classrooms. This lack of preparedness, can lead to delays in implementing appropriate instructional modifications and accommodations, depriving students of the necessary support to effectively engage with the curriculum.

Furthermore, systemic issues within educational institutions often impede the provision of immediate support. In many schools, there are delays in the referral process for special education services, which means that students with learning disabilities may go for extended periods without the necessary assistance. As noted by Kavale and Forness (2000), the bureaucratic hurdles and lengthy evaluation procedures involved in obtaining individualized education plans (IEPs) can significantly delay the implementation of support measures. Additionally, the collaboration between general education teachers and special education professionals is often inadequate, leading to a lack of coherence and coordinated efforts in addressing the needs of students with LD. This fragmentation can result in missed opportunities for timely interventions, further disadvantaging students who require immediate and ongoing support to succeed academically.

2.6.6. How teachers support students with LD

Teachers provide tailored support to students with mild to moderate disabilities, addressing their unique instructional needs across various categories, including learning disabilities, intellectual disabilities, and emotional or behavioral disorders. These needs often encompass academic, functional, life skills, and behavioral instruction. Students with learning disabilities typically require intensive instruction in both learning processes and content (Miller, 2002). Instruction should be customized to each student's cognitive, social, and emotional needs rather than their specific disability category.

2.7. Instructional Content

Students with learning disabilities are usually taught within the general education curriculum, with added support in areas like reading, writing, mathematics, and study skills. For secondary students, it's also important to consider transition planning, which may involve functional and social skills curricula.

Reading: Effective reading instruction includes both decoding (translating text to speech) and comprehension (understanding the text). The National Reading Panel (2000) identified five key components: phonological awareness, phonics, fluency, vocabulary, and comprehension. Students may need extra support in these areas. Phonological awareness, crucial for understanding how sounds form words, can be developed through targeted instruction. Phonics programs like Direct Instruction (DI) or the Wilson Reading System are designed to support students with learning disabilities by emphasizing sound-symbol correspondence and structured practice. Fluency, or reading quickly and accurately, is also essential for comprehension. Strategies like repeated readings can help improve fluency. Vocabulary development can be enhanced through interactive and memory-based interventions. Effective reading comprehen-

sion strategies include cognitive and metacognitive approaches like story mapping and peer-assisted learning strategies.

Written Language: Supporting students with learning disabilities in writing involves focusing on writing as a process rather than a final product. The writing process includes stages like prewriting, drafting, revising, and editing. Instruction should guide students through these stages, with a focus on planning, writing, and revising, and provide feedback based on these processes. Teaching strategies such as COPS (Capitalization, Overall Appearance, Punctuation, Spelling) can help students with editing. Research shows that explicit instruction in writing strategies improves the quality of essays for students with learning disabilities.

Overall, effective teaching for students with learning disabilities involves tailored instruction that addresses their unique needs and includes strategies for improving various skills.

2.8. Strategies for Teaching Students with Learning Disabilities and English Language Learners

Many strategies used for teaching students with learning disabilities are equally effective for those who are also English language learners (ELLs). Research by Gersten, Baker, Marks, and Smith (1999) highlights several instructional practices that benefit ELLs, including:

- **Using Visuals:** Employing visual aids to support understanding of concepts and vocabulary.
- **Cooperative Learning and Peer Tutoring:** Encouraging collaborative learning and peer support.
- **Native Language Support:** Allowing students to organize their thoughts in their native language.
- **Opportunities for Language Use:** Providing ample time for oral and written language practice in various contexts.
- **Rich Vocabulary:** Focusing on diverse and evocative vocabulary to teach literary concepts.

Additional practices include simplifying lectures, making them engaging and multisensory; adapting textbooks and assignments; evaluating their appropriateness; and incorporating supplementary materials. Effective teachers of culturally and linguistically diverse students are characterized by high expectations, a sense of community, belief in diversity, confidence in teaching diverse students, and valuing the languages in their classroom. They also provide clear directions, appropriate pacing, involve students in decision-making, monitor progress, and offer constructive feedback.

2.9. Instructional Environment and Technology

When planning instruction, it's crucial to consider the instructional environment and the role of technology. A well-organized and structured environment can significantly impact students with learning disabilities. Proper grouping and the use of instructional technology can also be vital for some students' success. Applications and interactive tools can assist students to think of the lesson more as an enjoyable way to learn new skills, rather than the dull, traditional idea of learning in classrooms. With the help of interactive games, videos and audiovisual material, the use of interactive whiteboard, and the online chatrooms in educational platforms, students with learning difficulties can gain confidence and believe in their potential and skills leaving behind the moments of failure and feelings of underachievement.

2.10. Writing and Expression

Proficient writing involves vocabulary, language mechanics, background knowledge, and organizational skills. Support strategies should include both compensatory and intervention methods, addressing

aspects like spelling, motor control, planning, drafting, editing, and note-taking to help students manage writing requirements while developing their skills. Digital software can be utilized to help learners organize their ideas, checking for spelling mistakes, editing and revising their drafts so as they feel more confident about their writing skills. Also, it is easier than ever before to exchange drafts with their classmates and promote peer-editing, which is beneficial for both students with and without learning difficulties.

2.10.1. Benefits gained by LD students with the use of new technology

2.10.1.1. Benefits in comprehension of the material, oral and written expression

The integration of technology into educational settings offers substantial benefits for students with learning disabilities (LD), particularly in enhancing their comprehension of the material. Technology tools such as text-to-speech software, interactive e-books, and digital reading platforms provide multifaceted support for these students. Text-to-speech programs, for instance, allow students to access written content audibly, which can be crucial for those who struggle with reading fluency and comprehension. TTS software helps students with reading difficulties by converting written text into spoken words, facilitating better comprehension and retention (Rello et al., 2015). Similarly, speech-to-text software and digital word processors reinforced with spell-check and grammar correction functionalities empowering students to communicate their ideas more competently. By converting text into spoken words, or otherwise, these tools enable students to better grasp complex concepts and narratives, thereby facilitating a deeper understanding of the material.

Moreover, speech-to-text applications turn language into written text, which is particularly beneficial for students who find writing demanding due to difficulties with motor control or spelling. Students refine their writing skills and improve the overall quality of their written work using software providing instant feedback on spelling and grammar with digital word processors. Interactive e-books (an electronic version of the paper version with features such as videos, automatic correction of the exercises), with their multimedia elements and built-in support features, offer a dynamic reading experience that can cater to diverse learning styles and the needs, making comprehension more accessible and engaging for LD students.

Consequently, students are capable to focus on organizing and articulating their thoughts free from the cognitive load associated with transcription. The use of technology also supports LD students in developing essential skills for academic success through adaptive learning tools and educational software. Adaptive learning platforms tailor instruction to the individual needs of students, offering personalized feedback and targeted practice that addresses specific areas of difficulty. This customization helps students build confidence and mastery at their own pace, thereby enhancing their overall learning experience. Educational software designed for skill development in areas such as reading comprehension, writing mechanics, and critical thinking can provide engaging, interactive exercises that reinforce learning objectives. By leveraging these technological resources, students with learning disabilities can achieve greater academic progress and improved performance in both oral and written expression.

2.10.2. Intervention techniques in the teaching of students with LD in distance learning

Intervention techniques in the teaching of English to students with learning difficulties in distance learning necessitate a multifaceted approach that integrates technological tools, individualized instruction, and continuous assessment such as changes in font size and spacing between words, underlining important information, text to speech software, e-books, pictures cards and flipped learning (Leis et al., 2021) to assist students. In a flipped classroom, students are first introduced to the new content outside of the classroom, typically through videos, readings or other digital materials. Then, class time is used for engaging activities like discussions, problem-solving, or collaborative projects that help deepen understanding and applying the knowledge. The key elements of flipped learning include pre-class

work and in-class work. Taking part in online lessons offers a chance for teachers to adapt their material following the above techniques to meet the specific educational needs of students with LD. It is time efficient and quite simple for the teachers to change the font size and spacing, to use e-books, videos and pictures or to highlight the important aspects of the lesson to make the material more accessible and student-friendly.

Technological tools, such as interactive learning platforms, and digital storytelling applications, play a critical role in creating an accessible and engaging learning environment (Papadopoulos & Savic, 2020). These tools help bridge the gap caused by physical distance, allowing students to access resources and practice language skills at their own pace. For instance, platforms like Google Classroom and Zoom facilitate real-time interaction and provide avenues for collaborative activities, which are essential for language acquisition. By leveraging these technological advancements, educators can provide a more inclusive learning experience that addresses the diverse needs of students with learning difficulties.

Individualized instruction is another crucial element in the intervention techniques for teaching English in a distance learning context. Differentiated instruction strategies, such as tailored lesson plans and personalized feedback, ensure that each student's unique learning needs are met. Educators must employ a variety of instructional methods, including visual aids, multimedia resources, and scaffolded tasks, to cater to different learning styles and cognitive abilities. Additionally, incorporating elements of Universal Design for Learning (UDL) can enhance accessibility and engagement. UDL principles advocate for the provision of multiple means of representation, expression, and engagement, which are particularly beneficial for students with learning difficulties. This personalized approach not only helps in mitigating the challenges posed by distance learning but also fosters a more supportive and effective educational environment.

Continuous assessment and feedback are integral to the successful implementation of intervention techniques in distance learning. Formative assessments, such as quizzes, interactive assignments, and regular check-ins, enable educators to monitor progress and identify areas where students may need additional support. These assessments should be designed to be flexible and adaptive, allowing for timely interventions and adjustments to instructional strategies. Feedback mechanisms, including automated responses from learning management systems and personalized comments from teachers, provide students with the guidance and motivation needed to improve their language skills. By maintaining an ongoing cycle of assessment and feedback, educators can ensure that students with learning difficulties receive the necessary support to succeed in their English language learning journey, even in a remote learning environment.

2.10.2.1. *Effective activities with the assistance of computers to the teaching of English*

In the context of online classrooms, employing technology-assisted activities tailored to the needs of students with learning difficulties can significantly enhance the teaching of English. Research has found that computer technologies help teachers create a context to “capture and maintain learner attention in ways unlikely to occur offline” (Meskill, 2005, p. 55). One effective approach is the use of interactive multimedia tools, which can provide visual and auditory stimuli that cater to various learning styles. According to Ciampa (2014), multimedia resources such as educational videos, animations, and interactive games can improve engagement and comprehension among students with learning difficulties by presenting information in a more accessible and engaging manner. For instance, platforms like BrainPOP and Khan Academy offer a wealth of interactive English language learning activities that can help simplify complex linguistic concepts and make learning more enjoyable. However, prioritizing visual elements over textual or verbal content can lead to cognitive overload, where the simultaneous presentation of visual, auditory and textual information overwhelms the learner's cognitive capacity. This overload can impair the processing and retention of new language material, particularly for beginners who are still grappling with the basics of the foreign language and even more for learners with LD (Mayer and Moreno, 2003). Another drawback of interactive tools is the fact that the effective use of interactive

multimedia requires not only language skills but a certain level of technical proficiency. Learners who are not proficient or even familiar with technology may struggle to engage fully with these tools, leading to frustration and disengagement, which can negatively impact their language acquisition process (Stockwell, 2010).

Another appropriate activity involves the use of digital storytelling applications. Digital storytelling allows students to create and share their own stories using multimedia elements such as text, images, audio, and video. This method not only enhances language skills but also boosts creativity and confidence. As explored by Robin (2008), digital storytelling can be particularly beneficial for students with learning difficulties as it provides a flexible and supportive environment for practicing language skills. Tools like Storybird and Adobe Spark enable students to construct narratives that reflect their personal experiences and interests, thus promoting a deeper connection with the learning material and encouraging active participation. Teachers should always bear in mind that digital storytelling tools can have some negative aspects which should be considered carefully before opting for these tools. On the downside, digital storytelling often prioritizes visual elements over textual or verbal content. While this can make stories more engaging, it can also lead to an overemphasis on aesthetics at the expense of the narrative depth. Complex stories that rely heavily on nuance subtlety may be oversimplified to fit the format, which can diminish their impact.

The integration of assistive technologies, such as speech-to-text (STT) software, can also play a pivotal role in supporting students with learning difficulties in online English classrooms. STT technology aids students who struggle with writing by allowing them to dictate their thoughts, which are then transcribed into text. Programs like Read&Write and Dragon NaturallySpeaking have been shown to significantly improve reading and writing skills among students with learning disabilities, providing them with greater autonomy and reducing the cognitive load associated with these tasks. Similarly, TTS (text-to-speech) software has proven to be an invaluable tool in the learning of foreign language, particularly for students with learning difficulties. This technology converts written text into spoken language, allowing learners to hear the pronunciation of words and sentences. It can significantly aid students with dyslexia, auditory processing disorders or other learning difficulties by providing auditory reinforcement that supports their reading and comprehension skills (Wood, 2015). Students with learning difficulties often face increased cognitive load when processing written text in a foreign language. TTS software can reduce this burden by allowing students to focus on understanding and internalizing the language rather than struggling with decoding the text. By reducing the cognitive demands of reading, TTS enables learners to allocate more cognitive resources to language comprehension and production (Rost, 2011).

Nevertheless, some disadvantages of the above mentioned tools should not be ignored. For instance, one significant drawback of using the above-mentioned tools in foreign language learning is the potential for students with learning difficulties to become overly reliant on those technologies. This reliance can inhibit the development of essential language skills, such as spelling, writing, and reading comprehension, as students may depend on the tools to process language instead of actively engaging with the material. Over time, this could hinder the student's ability to internalize language rules and reduce their overall language proficiency (Zhang & Zou, 2020). Another disadvantage may be the limited contextual understanding. TTS and STT tools may struggle with accurately interpreting the nuances context-specific meanings of words or phrases in a foreign language. For students with learning difficulties, this limitation can lead to misunderstandings or incorrect usage of the language, as the tools may not provide adequate feedback on the subtleties of tone, context or cultural connotations. Consequently, students may develop a superficial understanding of the language, which could impair their ability to communicate effectively in real world situations (Hemming, 2012).

Finally, collaborative tools such as online discussion boards and virtual breakout rooms can enhance communication and peer-learning among students with learning difficulties. These tools enable students to engage in discussions, share ideas, and receive feedback in a structured yet flexible environment. Re-

search by Palloff and Pratt (2007) indicates that collaborative activities in online settings can foster a sense of community and support, which is crucial for students with learning difficulties who may feel isolated or overwhelmed. Platforms like Padlet and Microsoft Teams allow for real-time collaboration and interaction, thereby promoting a more inclusive and supportive learning atmosphere where students can learn from each other and build essential social and language skills.

2.10.2.2. How can students benefit from the technique of storyline in English?

By composing stories on the website, users can effortlessly integrate the provided graphics, animations, sound effects, and music to accurately depict specific settings, moods, and scenes that align with their narratives and imaginations. The freedom to manipulate these simulation tools offers users an open-ended and constructivist learning environment. Additionally, the hypermedia format of the materials allows learners to adaptively navigate their learning paths and use English storytelling in a constructivist manner. This Storytelling Website creates a dynamic and engaging English learning environment where learners can compose stories on any subject without limitations and practice using model stories created by teachers, akin to playing games. These model stories can serve as curriculum materials in classroom instruction. Furthermore, since all learning tools and completed stories are stored and accessible online, both learners and teachers can easily access the entire learning environment without concerns about software installation or data updates.

Equally important to storytelling are the follow-up activities, such as story recall, which enable children to revisit the tale and deepen their understanding. Story recall helps children develop concepts related to words, print, and books, and it also serves as an assessment tool for current language levels (Morrow, 2001). Specifically, recalling story events allows children to reorganize the sequence of events, utilize the story's vocabulary, and expand their comprehension of the world (McGee & Richgels, 2000). This practice is crucial for developing language proficiency. Research consistently shows a positive relationship between active engagement during practice and improved proficiency in the practiced skills (Ericsson, Krampe, & Tesch-Romer, 1993). Additionally, story recall serves as both a practical activity and a research tool, providing a broad dataset for understanding language development.

Teachers can prepare the storytelling process more efficiently since the Storytelling Website offers background pictures, objects, characters, sound effects and music for integration into storytelling. Additionally, the multimedia capabilities of the Storytelling Website enable teachers to seamlessly incorporate cultural knowledge of the English language through storytelling. By exploiting the Internet's unique traits, teachers can easily gather authentic materials from English-speaking cultures, such as songs, pictures, and festival activities to enrich their storytelling. After the session, students can explore cultural events through video clips, cultural artifacts, or personal remarks provided by various related websites. Furthermore, the website offers creative classroom activities to follow up on storytelling. For example, teachers or students can select a series of pictures for story creation, or teachers can modify the original story by changing characters or settings and then have students rewrite their versions. Children's story comprehension improves when they actively participate in reconstructing a story. Story recall engages children in interpreting and integrating knowledge into their schema. The website also allows teacher's stories to be replayed for review purposes, and individual students' story recalls can be stored in personal digital portfolios, enabling teachers to monitor learning progress or conduct peer comparisons.

2.10.2.3. The value of image and video in teaching students with LD in distance learning

Educational videos seem to have an eminent importance of teaching students, especially to those facing any kind of learning difficulties. Their value lies in enhancing students' comprehension and discussion, providing greater adjustment of diverse learning styles and increasing student motivation and enthusiasm. Mayer (2001) explains that viewing, while it may appear to be passive, can involve the

higher cognitive activity necessary for active learning: “well-designed multimedia instructional messages can promote active cognitive processing in students, even when learners seem to be behaviorally inactive” (p. 19). Encouraging students to actively engage with video content requires establishing an appropriate environment for such learning. While this might appear self-evident, a six-year study on mass media usage in two Massachusetts school districts found that film and video are frequently employed for suboptimal purposes. These include occupying time, maintaining student silence, providing a break from learning, or rewarding good behavior (Hobbs, 2006).

A significant benefit of video materials is that they provide genuine and authentic input, as they are created for native speakers, such as films, various TV programs, and songs. Videos can be utilized in diverse instructional and teaching contexts: in the classroom, for presenting content, initiating discussions, illustrating specific topics, self-study, and evaluation. When teachers incorporate video materials into their English classrooms, students can directly access a wealth of cultural background information and emotional context related to the learning materials. This approach allows students to exercise their autonomy in language learning. By watching video materials, students immerse themselves in the vivid atmosphere created by the videos and understand the language’s practical use of the characters. Compared to traditional English teaching, such courses effectively implement student-centered teaching strategies. According to Tomalin’s (1986) research, language teachers like the video because it motivates learners, brings the real world into the classroom, contextualizes the language naturally and enables learners to experience authentic language. Students like it because video presentations are interesting, challenging, and stimulating to watch” (p.12).

On the other hand, though, a systematic use of videos and images can cause distraction from language content as they sometimes distract students with learning disabilities from focusing on the language itself. Visual elements, particularly when overly stimulating or unrelated to the language content, can divert attention away from critical language components such as grammar, vocabulary, and sentence structure. This distraction may lead to reduced language acquisition, as students might focus more on the visual stimuli than on processing the language material being presented (Mayer, 2001). Also, for students with learning difficulties, the integration of video and images can contribute to cognitive overload. The simultaneous processing of visual information alongside linguistic input can overwhelm the learner’s cognitive resources, making it difficult to effectively absorb and retain language lessons. This overload is particularly problematic for students who already struggle with processing and memory, potentially hindering their ability to make meaningful progress in language learning (Sweller, 1988).

[2.10.3. Assessment of students with LD in online learning](#)

[2.10.3.1. Typical and atypical assessment](#)

In distance learning environments, assessing students with learning difficulties presents unique challenges and opportunities. Typical assessments often involve standardized tests and assignments designed to measure a student’s understanding and performance against a uniform set of criteria. However, these traditional methods may not adequately reflect the abilities of students with learning difficulties, who might face additional barriers such as limited access to resources, lack of in-person support, and difficulties with self-regulation and motivation (Smith, 2020). Consequently, it is essential to adapt assessment strategies to better accommodate the diverse needs of these learners in an online context.

Typical assessments in distance learning for students with learning difficulties often mirror those used in conventional classroom settings, including multiple-choice tests, essays, and project-based assignments. These assessments are designed to evaluate knowledge and skills uniformly across the student population. However, research indicates that such assessments may not be entirely suitable for students with learning difficulties due to the standardization of content and format, which can fail to account for individual learning profiles and the need for accommodations (Johnson & Brown, 2019). The rigidity of

these assessments can exacerbate the challenges faced by these students, leading to an underestimation of their true capabilities and progress.

In contrast, atypical assessments aim to provide a more inclusive and flexible approach to evaluating students with learning difficulties in distance learning environments. These assessments often include formative assessments, such as continuous feedback, peer reviews, and self-assessments, which allow for a more personalized evaluation of student progress (Harrison, 2021). Additionally, alternative assessments such as portfolios, performance-based tasks, and adaptive testing can offer a more comprehensive understanding of a student's abilities by allowing them to demonstrate their knowledge and skills in various ways. These methods are particularly beneficial in identifying specific strengths and areas for improvement, thereby supporting a more tailored educational approach.

2.10.3.2. Challenges for teachers

Assessing students with learning difficulties in online environments can be challenging for teachers, primarily due to the limitations of digital platforms in accommodating diverse learning needs. One of the primary difficulties is ensuring fair access to appropriate resources and support. Many students with learning disabilities require specialized tools and assistive technologies, which may not be readily available or fully compatible with online learning systems (Smith, 2020). Additionally, the lack of face to face interaction can interfere with the teacher's ability to observe and respond to the subtle cues of student comprehension and engagement, making it harder to provide timely and tailored feedback (Johnson & Brown, 2019). This absence of physical presence can also exacerbate feelings of isolation and anxiety among students, further complicating their learning experience and assessment outcomes.

Another challenge is the difficulty in designing assessments that accurately measure the abilities of students with learning disabilities without being biased by the constraints of the online format. Traditional assessment methods, such as timed exams and standardized tests, may not account for the varied ways in which these students process and demonstrate knowledge (Harrison, 2021). Creating and implementing effective alternative assessment strategies, such as project-based tasks or open-book exams, is a frequent task for teachers, which require additional time and effort. Furthermore, ensuring academic integrity and fairness in these assessments can be problematic, as online environments can facilitate dishonest practices if not carefully monitored (Garcia & Pearson, 2022). Consequently, teachers must balance the need for rigorous assessment with the necessity of providing an inclusive and supportive learning environment, a task that requires considerable skill and adaptability.

2.10.3.3. Assessment practices and self-assessment in distance learning

Formative assessments are integral to effective distance learning, offering ongoing feedback that helps students understand their progress and areas for improvement. These assessments include quizzes, discussion forums, and interactive assignments that engage students in continuous learning rather than merely evaluating their final outputs (Harrison, 2021). By integrating formative assessments into online courses, educators can create a more dynamic and responsive learning environment. This approach not only supports students in their learning journey, but also allows instructors to adjust their teaching strategies based on real-time data and feedback, ensuring that all students remain on track.

Self-assessment has gained prominence as a vital component of distance learning, empowering students to take an active role in their education. This practice involves students evaluating their own work and learning processes, often guided by rubrics or reflective prompts provided by instructors. Self-assessment encourages learners to develop critical thinking and self-regulation skills, which are essential for success in an autonomous learning environment (Boud & Falchikov, 2007). Moreover, self-assessment fosters a deeper understanding of course content as students identify their strengths and weaknesses and set personal learning goals. This reflective practice can lead to improved academic performance and greater self-efficacy.

2.10.3.4. *The use of modern means of assessment such as quizzes and questionnaires*

There are undeniably many benefits gained by the use of modern means of assessment in distance learning including a personalized learning experience, immediate feedback, increased engagement and motivation, accessibility and flexibility, enhanced communication and collaboration, consistency and standardization, and reduced administrative burden. With the use of questionnaires teachers can accumulate individualized information regarding each student's specific needs, preferences and learning styles empowering teachers to create personalized lesson plans (Papadopoulos & Jansen, 2024; Ose & Papadopoulos, 2024). Following Black and William (1998), academic performance and student engagement are boosted by tailored instruction. Digital quizzes and learning management systems give instant feedback in real time aiding students realize their mistakes and learn from them (Shute, 2008). The significance of immediate feedback is highlighted by the fact that it reinforces learning and boosts confidence (Hattie and Timperley, 2007).

Besides feedback, a great advantage of modern means of assessment is strengthened motivation and engagement. Gamified learning platforms, like Kahoot and Quizziz, formulate a more enjoyable and captivating learning experience, especially for students with learning difficulties who struggle with consolidation (Gee, 2003). Research by Prensky (2001) has found that game-based learning significantly reinforces student motivation and retention of information. Apart from high motivation, digital assessment tools can be easily adapted to address the particular needs of students with learning difficulties as there is a range of modes such as visual, audio and interactive content (Rose & Meyer, 2002). Teachers can exploit the abundant tools offered online to create customized and to the point assessment material giving students the chance to perform as effectively as they can.

Communication and collaboration among students, teachers and parents is of utmost importance if they are to succeed academically. Interactive tools and applications allow teachers to communicate with students ensuring that everyone is informed and involved in the learning process (Greenhow, Robelia and Hughes, 2009). If students feel certain that their queries will be adequately addressed shortly, they feel more secure and confident about themselves. This instant communication offers the possibility that their specific needs will be met accordingly.

Questionnaires and digital assessment tools offer a standardized method of evaluating student performance, ensuring fairness and consistency in grading (McMillan, 2007; Papadopoulos, 2020). Taking into account the strengths and weaknesses of students, teachers can take advantage of the varied modes digital tools offer in the creation of assessment material. Tests can be in the form of a video with multiple tasks (i.e. listening comprehension, writing, reading comprehension) or even a game which tests grammatical, syntactical or other linguistic items. The scores are automatically calculated, as the benchmarks have been added before, and there is fairness in the results.

Lastly, modern assessment needs must remove the administrative burden from the teachers, such as grading and record-keeping, enabling teachers to concentrate more on the instruction and personal student support (Bennett, 1998). Teachers now have the tools for easy grading saving time for the creation of educational material suitable for the students with learning difficulties or planning the lessons using activities that are engaging, fun and tailored to the specific needs of the learners. Time management is one of the most burdened aspects of teaching, however, with the help of technology teachers can allocate and distribute their time easily and for creative activities not for dull grading and record-keeping.

Conclusion

Learning difficulties are an area in English education that spreads across its whole spectrum and allowing more and more intervention techniques to meet the specific needs of students. Distance learning is also a recent widespread mode of learning which needs to be fully explored and exploited to assist teachers and accommodate students with learning difficulties. More research is welcome to introduce ways of tailored

teaching, focusing on the importance of students' capabilities to reach their full potential. Technology is a tool that does miracles with students with specific learning needs. It is important to further explore the effectiveness of adaptive learning technologies and investigate how these technologies can be optimized for teaching English to students with LD in a distance learning environment. This research could explore how these technologies can identify and address specific challenges such as dyslexia, ADHD, or auditory processing disorders, and how they can be integrated into English language curricula effectively.

In addition, further research could investigate the development and impact of multisensory online learning materials specifically designed for students with LD. Research should focus on how combining visual, auditory, and kinesthetic elements in digital formats can enhance engagement and learning outcomes in English language acquisition, and how these materials can be most effectively designed and implemented. Another field of research could examine strategies to increase engagement and motivation among students with LD in online English language courses. This research could look at the impact of gamification, personalized feedback, and interactive content on student motivation and their correlation with learning outcomes, particularly in a distance learning setting.

Last but not least, the role of AI, in supporting students with LD, could be further explored regarding the creation of personalized learning experiences, real-time feedback and support, scaffolding and adaptive learning, enhanced accessibility, engagement through interactive learning and data-driven insights for educators. The role of AI in education is new and its possibilities and capabilities are endless.

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