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Developing an Adapted English Proficiency Test for Adult Job Seekers with Intellectual and Developmental Disabilities (IDD): Literature Review

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Abstract
There is a critical need for an adapted English proficiency test designed specifically for individuals with intellectual and developmental disabilities (IDD). Current language assessments often fail to address the specific learning difficulties of this population. As a result, assessments underestimate the actual abilities of these test takers. To address this gap, a literature review was conducted on foreign language acquisition for individuals with IDD, and a methodological intervention was developed. This intervention uses multisensory structured language (MSL) instruction tools, task-based learning, and technology. The adapted proficiency test aligns with the Common European Framework of Reference for Languages (CEFR) and aims to assess language skills of individuals with IDD with a focus on reliability and validity. Through accommodation and adaptation, the test will ensure that the language capabilities of this population are accurately reflected. The aim of this study is to develop a reliable assessment tool for this demographic and to encourage their continued social integration and employability. This study has significant implications for educational practice and policy and offers a model for inclusive language assessments that can be adopted in various educational contexts. It also lays out the foundation for future research and allows for the expansion of assessments to higher CEFR levels, which will continue to support the long-term language needs of this population.

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[1]Introduction

The absence of an official adapted English proficiency test designed specifically for individuals with intellectual and developmental disabilities (IDD) presents a significant gap in both academic and social inclusion. Assessing second language acquisition in individuals with IDD can be particularly challenging due to the lack of appropriately adapted assessment procedures and materials. These limitations often result in inaccurate evaluations of language abilities, which can hinder the employment prospects of individuals with IDD. In today's globalized world, English proficiency is increasingly viewed as a valuable skill, particularly in the labor market where some level of English is often a prerequisite for employment. An English proficiency certification is a beneficial addition to a curriculum vitae for people with IDD who are seeking work. Encountering job opportunities for this demographic already poses difficulties, therefore any additional support is key. This is evident in the European Union (EU), where 51% of working-aged individuals with disabilities were employed in 2022, compared to 75% of those without disabilities (Eurostat, 2022). The disparity is even more pronounced in Spain, with employment rates of 27.8% for people with disabilities and 68.1% for those without (INE, 2023). Even more specifically in Catalonia, where this project takes place, the gap is wider with the rates at 28% and 71.9%, respectively (IDESCAT, 2023).

The European Committee has laid out "the Strategy for the Rights of Persons with Disabilities 2021–2030" to narrow the employment gap between people with IDD and people without disabilities (European Commission, 2024). This strategy advocates for enhanced support and opportunities for individuals with disabilities across the EU. In this context, the ability to demonstrate English language proficiency through a standardized certification aligned with the Common European Framework of Reference for Languages (CEFR) could provide a crucial advantage for job seekers with IDD. The CEFR standards are particularly relevant as they offer a recognized framework for assessing language skills across different levels of proficiency, ensuring that the adapted test will be both academic and widely accepted.

This paper aims to conduct a comprehensive review of existing literature on the instruction of foreign language to learners with intellectual and developmental disabilities. The findings from this review will inform the development of an accessible English proficiency test tailored to the specific needs of adult job seekers with IDD. Before designing the test, it is essential to implement a language learning intervention that is student-centered, that adapts to the varied learning styles, preferences, and educational needs of this population. The activities developed and validated through this intervention will be the foundation of the proficiency test, ensuring that it is both effective and aligned with accommodating the unique challenges faced by test takers with IDD. Ultimately, this

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research seeks to create a tool that not only meets the CEFR standards but also supports the broader goal of enhancing employability and social inclusion of individuals with IDD.

Foreign Language learning difficulties

Learners with IDD face unique and significant challenges when learning a foreign language. Traditional language acquisition methods and assessment tools are generally not designed with these learners' specific needs in mind. This can lead to inaccurate evaluations of their true abilities and potential. Understanding these difficulties is crucial for developing an effective and inclusive test that can accurately reflect the language capabilities of this population.

Cognitive and Linguistic Challenges

The primary challenges faced by students with IDD in foreign language learning environments are related to cognitive and linguistic deficits. IDD can cause limitations in cognitive functioning that affect memory, attention, and processing speed, all of which are critical for language learning. For instance, students with IDD may struggle with phonological processing, which is essential for recognizing and producing the sounds of a new language. This difficulty can lead to challenges in acquiring vocabulary, developing reading skills, and understanding spoken language.

The Linguistic Coding Differences Hypothesis (LCDH), proposed by Sparks and Ganschow (1991), provides a framework for understanding these challenges. The LCDH suggests that difficulties in foreign language learning stem from deficiencies in linguistic codes (phonological, syntactic, and semantic) in the learner's first language (L1). Individuals who struggle with these linguistic codes in their native language are bound to face similar challenges when learning a second language (L2). Sparks' research (2023) further confirms that individual differences in L1 skills remain stable over time and have a significant impact on L2 aptitude and achievement. For students with IDD, these linguistic deficiencies in L1can intensify with L2 learning, which can lead to persistent difficulties in acquiring basic L2 language skills.

Additionally, individuals with IDD often exhibit deficiencies in executive functioning, which affects their ability to plan, organize, and monitor their learning processes. This can result in difficulties with tasks that require sustained attention and working memory, such as following complex instructions or retaining newly learned vocabulary. These cognitive challenges make it difficult for students with IDD to keep pace with traditional language learning practices, which are generally designed for neurotypical learners.

Social and Emotional Factors

Social and emotional factors also play a significant role in foreign language learning for students with IDD. Many of these students experience high levels of anxiety and low self-confidence, particularly in academic settings. This anxiety can be exacerbated in foreign

language classes, where students may feel overwhelmed by the unfamiliar sounds, structures, and vocabulary of the new language. Mohammadian and Dolatabadi (2016) highlight the importance of incorporating affective factors into teaching practices for students with IDD. Their research demonstrates that teaching with affection, such as using social reinforcers like praise and encouragement, can significantly reduce anxiety and improve motivation, and lead to better learning outcomes.

Furthermore, social contexts in which language learning occurs are crucial for students with IDD. These students often require more structured and supportive learning environments, where they feel safe and valued. Harmer (2015) emphasizes the need for creating a "safe place" in the classroom, where anxiety is minimized, and learning is facilitated through clear routines and consistent feedback. Students with IDD are more likely to take risks in using a new language in safe structured and supportive environments, which encourages greater language acquisition over time.

Instructional Challenges

Traditional methods of teaching foreign languages are often not suited to the needs of students with IDD. These methods can rely on fast-paced instruction, complex grammatical explanations, and abstract language exercises which can be difficult for students with cognitive impairments to grasp. For example, explicit grammar instruction, which is a common approach in language classrooms, may overwhelm students with IDD, who often struggle with abstract thinking and real-time application of grammar rules.

To address these challenges, Wight (2015) advocates for a more tailored approach to language instruction for students with IDD. She argues that language learning should not be dismissed entirely for students with IDD, as it offers cognitive, pragmatic, and cultural benefits. Instead, instructional practices should be adapted to meet the specific needs of these learners. For example, a focus on explicit phonics instruction and sight word recognition has been shown to be particularly beneficial for students with IDD when working on reading skills (Reed, 2013). These methods separate language learning into manageable chunks, allowing students to build their skills gradually and with greater confidence.

Task-based instruction is another effective approach for teaching foreign languages to students with IDD. This method involves tasks that engage students in practical, real life situations that necessitate the use of the target language. For example, role-play activities, where students practice ordering food in a restaurant or asking for directions, can help develop communication skills in a natural way. Task-based instruction not only makes language learning more relevant to the students' lives but also provides opportunities for repeated practice, which is essential for language retention.

The Role of Technology in Language Learning

Technology offers promising pathways for overcoming many of the challenges that students with IDD face when learning foreign languages. Computer-assisted language

learning (CALL) and Mobile-assisted language learning (MALL) tools can be particularly beneficial for this population. These technologies allow learning materials to be customized to the individual needs of each student. For example, language learning apps like Duolingo and Rosetta Stone provide immediate feedback and reinforcement by offering built in adaptation that adjust to the user's pace and proficiency level to create individualized learning paths.

Studies have shown that technology can significantly enhance language learning for students with IDD, notably in the domain of vocabulary acquisition (Rivera et al., 2014). The use of varied media elements, such as images, audio, and interactive games, can make language learning more engaging and accessible for students who struggle with traditional text-based methods. Additionally, educational games and apps can increase motivation and confidence, encouraging students to participate more in language learning activities (Hardiyanti & Azizah, 2019).

However, careful consideration is required to use technology effectively in language instruction for students with IDD. Blázquez Arribas et al. (2020) found that many language teachers working with learners with IDD lack the necessary training to effectively use online learning platforms. This highlights the need to provide professional development opportunities for teachers to equip them with the skills to integrate technology into their classrooms in ways that benefit students with IDD.

The Importance of Adapted Language Assessments

Given the cognitive, social, and instructional challenges outlined above, traditional language assessments are often inadequate for evaluating the language proficiency of students with IDD. These assessments typically do not account for the specific difficulties these students face, such as slower processing speeds, difficulties with abstract reasoning, and heightened test anxiety. As a result, students with IDD may underperform on standard language tests, not due to a lack of necessary language skills, but because the tests themselves are not designed to meet their needs.

To address this issue, there is growing recognition of the need for adapted language assessments tailored to the abilities and learning styles of students with IDD. Such assessments should incorporate a range of accommodations, including extended time, simplified instructions, and the use of visual and auditory aids. Moreover, the content and format of the tests must be consistent with classroom teaching methods, ensuring that students are tested on skills that they have had the opportunity to develop and practice.
The challenges faced by students with IDD in foreign language learning are multifaceted, that involve cognitive, social, and instructional factors. Designing assessment tools that are responsive to these challenges is essential to creating an effective and inclusive English proficiency test for this population. By integrating tailored teaching practices, leveraging technology, and adapting assessments to meet the specific needs of students

with IDD, educators can help these learners achieve their full potential in foreign language acquisition.

The Methodological Intervention

To implement appropriate pedagogical practices for learners with IDD, it is important to look at each learner on an individual basis. Chapelle (2009) indicates the importance of tailoring instruction for individual students' Second Language Acquisition (SLA) needs. Chapelle pointed to Garrett (2009) and her insight on the use of CALL to teach language to students in an individualized way. Chapelle determined that CALL designers must be able to theorize the role of various types of input for learning because they have the option to select, sequence, and modify inputs to meet their learners' individual needs. This contrasted with previous views from generative linguistics where input is just assumed (Garrett, 2009 as cited in Chapelle, 2009). With CALL/MALL and other technological language teaching methods, practitioners can fine-tune inputs on an individualized basis.

In recent years, technology has gradually become more prevalent in education, including language teaching. According to Ghanizadeh et al. (2015), technology is essential in language education for many reasons. The authors reported that, apart from enhancing input quality and authentic communication, technology also provides relevant and proper feedback to language learners. Additionally, they found that technology can boost several language skills, such as listening, speaking, reading, writing, grammar, and vocabulary. As for students with IDD, technology and media also have positive effects on foreign language learning, particularly vocabulary acquisition (e.g., Alemi & Bahramipour, 2019; Rivera et al., 2014; Burt et al., 2020). Lastly, it is worth mentioning that educational computer/mobile games also boost confidence, excitement, courage, and motivation in students with IDD (Hardiyanti & Azizah, 2019).

Computers and mobile technology are now frequently used in educational settings to increase the quality of students' learning results. For this reason, Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL) are fields of study that investigate how computer and mobile applications can be used to enhance language learning and teaching. Accordingly, some studies suggest that online language learning tools such as Rosetta Stone (Vesselinov, 2009), Duolingo (Vesselinov & Grego, 2012), or Babbel (Vesselinov & Grego, 2016) improve linguistic proficiency, promote autonomy, and show good adaptability to students' needs. However, the results of a qualitative study conducted in Spain on the experiences of English language teachers working with adult learners with disabilities revealed that 91% of professionals require additional training on using online learning platforms with students who have special needs (Blázquez Arribas et al., 2020). Consequently, the current project will assess the effects of a methodological intervention based on videos, audio, interactive games, etc. as well as group activities in the classroom. After this methodological intervention, the

analysis of the data gathered will help us create a suitable English proficiency test for students with IDD in accordance with the CEFR, since such a test currently does not exist for this demographic.

Sparks and Javorsky (2000) reported that students with IDD do not have more difficulties in learning a foreign language than their peers solely because of their learning disabilities, and for this purpose, further research has focused on potential modifications that should be available in the curriculum and instructional practices. According to Wight (2015) this is the suggested curriculum alterations for all students (according to previous research):

TABLE 2

Suggested Curriculum Alterations for All Students

- Differentiated learning activities
- Small class sizes
- Additional time
- Explicit learning strategies, e.g., organizers, mnemonic devices
- Reduced amount of content, e.g., five to nine vocabulary items at a time (Khoii & Sharififar, 2013)
- Frequent review and repetition
- Explicit linguistic teaching, e.g., pronunciation and syntax
- Alternative assessments, e.g., portfolios

Wight (2015), p.49.

Ganschow and Sparks (1995) believe there are two approaches to teach a foreign language to students with IDD. The first approach focuses on phonology: they believe that students that have trouble learning a foreign language have phonological deficits in their first language. These deficits in L1 lead the learner to not adequately understand the L2 language, and in turn, they are not able to produce it correctly. They believe phonological skills should be taught in L1 first and then again in the L2. They say this is a proven and effective remedy. Their second approach to language instruction for learners with IDD, is to adapt the course to just the principles of instruction; reducing the syllabus to the essential elements, slowing the pace of instruction, using visual, tactile or kinesthetic support, etc. (Sparks & Ganschow, 1995).

Harmer (2015) highlights the importance of focusing on each student's strengths, while the classroom should be a "safe place", with a calm learning environment, that lowers anxiety. The use of straightforward routines is highly recommended, and the teacher should do constant revisions and repetitions, as well as introducing multisensory materials to enrich the experience of L2 learning. Reed (2013) concluded that both explicit phonics instruction and sight word instruction were techniques that enhanced

the acquisition of an L2 in IDD students. Mohammadian and Dolatabadi (2016) proposed including an affective factor in the method of instruction as a technique to lower anxiety and improve the levels of self-confidence.

The Decision to Provide an Adapted Test

Since it is clear that the classroom activities need to be adapted to the students' needs, we believe that a new proficiency test for learners with IDD must be designed. Emerging research also recommends reimagining and adapting language proficiency tests for test takers with IDD (American Educational Research Association (AERA), 2014; Thompson et al., 2017; Davies et al., 2017; Shenoy et al., 2022). For this reason, the final aim of this project is to develop an adapted English proficiency test that adheres to the CEFR standards. This test will be designed for job seekers with IDD who wish to obtain an English language certification. The nature of these individuals' cognitive difficulties may impede their performance on a language proficiency exam in its current form. The CEFR guidelines distinguish language activities for exams based on the four communication skills: listening, speaking, reading and writing. Test takers with IDD may have difficulties participating in the assessment of any one of these skills due to the nature of their disability (Christensen, et al., 2013 as cited in Guzman-Orth, et al., 2016). This is where the need for adaptation, modification and accommodation becomes important for an English proficiency test aimed at this population.

Background and significance

The importance of paid work for the social integration of groups at risk of exclusion is presently coming to the foreground of discourse. As a result, in recent years, public strategies have been developed at European, state and regional levels (specifically in Catalonia), with an aim to improve employability and labor activity rates. One such group at risk of exclusion in the workforce is adults with IDD.

In 2002 the Secretary of Social Inclusion and Promotion of Personal Autonomy (Secretaria d'Inclusió Social i Promoció de l'Autonomia Personal), began a pilot experience with different entities in the mental health sector in Catalonia. The aim was to facilitate the incorporation of people with social problems into the workforce. This experience served as an endorsement to verify the need to regulate the integration of socio-labor schedules (Generalitat de Catalunya, 2024).

Now in Catalonia among the services aimed at people with social problems arising from IDD, the current portfolio of social services includes a pre-employment service as a specialized social service. Adults with disabilities can receive training in a daytime care center that enables them to start a job placement route with the aim of achieving their social and labor integration. The purpose of this plan is to offer the necessary means for people with disabilities to preserve and enhance their work capacities and provide them with the necessary encouragement and training to potentially make the transition to

work (Generalitat de Catalunya, 2024). An English proficiency certification could provide an additional tool to make the transition from work training to the workforce more attainable for adults with IDD.

According to Schalock, Luckasson and Tassé (2019) the field of intellectual and developmental disabilities (IDD) presently is undergoing a major transformation. This transformation is accompanied by greater precision both in the operational definitions of the constructs related to IDD and in the terminology being used to describe these respective constructs. The diagnostic statistical manual of mental disorders fifth edition (DSM-5) by the American Psychiatric Association (APA, 2013) defines that "intellectual disability (intellectual developmental disorder) is a disorder with onset during the developmental period that includes both intellectual and adaptive behavior deficits in conceptual, social, and practical domains" (p. 33). Assessment in the field of IDD involves the systematic collection of information for decision making and communication related to three assessment functions: diagnosis, classification, and individualized support planning. Within each of these functions, professionals carry out assessments for various specific purposes. For example, a diagnosis may determine a person's eligibility for services or legal protections (Luckasson, & Schalock, 2013; Schalock, 2013; Schalock et al., 2019;).

The Department of Social Rights (Departament de Drets Socials) in Catalonia provides services to people with IDD. Guidance and assessment services for people with disabilities function to offer advice and specialized support. These services also issue optional technical opinions on the degree of disability and prepare reports relating to the assessment of the different situations required for the access to social, economic and service benefits intended for people with disabilities. These services aim to guarantee equality, improve autonomy, quality of life and promote social integration. Disability care centers (Els Centres d'Atenció a les persones amb Discapacitat; CAD) provide information and guidance services to people with disabilities, their families, and the community of professionals who require it. In Catalonia, SIOAS is a program for the inclusion of people with disabilities or mental health disorders. This program provides guidance and support to improve employability, job placement and social and occupational adaptation in ordinary market companies and is implemented through RESOLUTION EMT / 2649/2023, of July 14, of the Government of Catalonia (Generalitat de Catalunya, 2024). Assessment and guidance teams are multi-professional teams made up of directors, psychologists, social workers, and administrative staff. These teams are found in CAD centers. These centers can provide coordination actions with other basic and specialized social, health, judicial, educational, and work services. The professionals in these centers can carry out labor assessments to issue certificates of adequacy and/or appropriate support. The function of the professional assessment and guidance team (l'equip d'orientació i valoració: EVO Laboral) is to assess the work capacity of a person with disabilities and to issue a certificate of aptitude for employment. This certificate can be

issued for the person to either work with an ordinary company, or work in a specialized work center, or to work in a vocational service (Generalitat de Catalunya, 2024).

Accessible English language certification through an adapted proficiency test will be an innovate step to support the adjustment from vocational training to the job market for adults with IDD. The Strategy for the Rights of Persons with Disabilities 2021–2030 lays out a list of equal opportunities that must be ensured for all people with disabilities in Europe. Among these opportunities this strategy strives to allow people with disabilities equal access to participate in society and economy, to be able to move freely in the EU regardless of support needs, and to no longer experience discrimination at all levels, while expressly stating non-discrimination in employment (European Commision, 2024). Accessibility to English certification can support the assurance of these equal opportunities. English proficiency can help this demographic participate more in society and economy. Command of English language as a lingua franca increases this population's ability to move freely in the EU. Knowledge of English will help this group of work ready adults have more opportunities with employment, especially with the European Commission requesting a pledge by the member states for less discrimination in the workplace.

Teaching Methodology

The conclusions from Schneider and Evers's (2009) article emphasize the effectiveness of explicit, multisensory structured language (MSL) instruction for at-risk language learners, which is also applicable to students with intellectual disabilities (ID). The use of cross-linguistic instruction, leveraging students' first language (L1) knowledge, can aid in learning a second language (L2) by providing a familiar framework. The research highlights the long-term benefits of structured language instruction, suggesting that consistent application leads to significant improvements in language proficiency.

Assessment of language skills for some students with disabilities can be challenging due to attention, behavioral, and communication issues related to testing situations (Jones et al., 2019). Moreover, test takers with IDD may have language, or sensory challenges that can also affect response and therefore the technical adequacy of assessment (Ketterlin-Geller, 2008; Jones et al., 2019). Assessing target language skills of test takers with IDD can be complicated because they may lack “access skills.” Access skills are those skills that students need to show what they know about the target skills (Niebling, & Elliott, 2005; Jones et al., 2019). It may be difficult to differentiate what a test taker can do, from what they will or will not do. If not provided with proper test accommodations, modifications or adaptations, test takers with IDD may simply choose not to answer certain test questions. They also may avoid questions that demonstrate target skills that are directly affected by the nature of their disabilities. Given these challenges, developing accurate and appropriate assessments to gage proficiency of language skills for this population is key (Baker et al., 2010; Jones et al., 2019; Wallace et al., 2010).

Leons et al. (2009) found that students with learning disabilities face significant challenges in foreign language classrooms due to difficulties in phonological processing, working memory, and executive functioning. To support these students with these challenges, these researchers identified effective teaching practices, such as the use of multimodal instruction, structured activities for success, and the integration of assistive technology. The importance of one-on-one instruction and creating a supportive classroom environment was also emphasized in the study. These findings stress a need for tailored instructional strategies to enhance the language learning experience for these learners. These individualized instructional strategies should be considered during the development of adapted proficiency assessments.

Level Test for IDD Students

Certain aspects of standardized tests make their administration impractical or unfair for some test takers, particularly individuals with disabilities. According to the AERA (2014) determined by the American Educational Research Association (AERA) and the American Psychological Association (APA) “a fair test does not advantage or disadvantage some individuals because of characteristics irrelevant to the intended construct” (p. 50). To address this problem, tests can be modified or adapted, or the conditions of test administration are adjusted, to accommodate the specific needs of each student. These practices are designed to level the playing field so that the test format or test administration conditions do not disproportionately prevent certain students from demonstrating their true knowledge, skills, and abilities (Sireci et al., 2005). Accommodation can lower the barriers of their disabilities to allow test takers to demonstrate skills without changing the base concepts or constructs that are being measured (Shaftel et al., 2005). Test accommodations enable test takers to participate in assessments in a way that assesses abilities rather than disabilities (Thurlow & Lehr, 2003). To determine if accommodation can be considered valid, researchers have decided upon a differential boost framework. If students with disabilities benefit differentially more than students without disabilities from an accommodation then it is considered valid (Elliott & McKevitt, 2000; Fuchs & Fuchs, 1999; Laitusis, 2010; Pitoniak & Royer, 2001; Sireci et al., 2005).

The Standards established by AERA and APA (2014) define test accommodations as "changes made in the content, format, and/or administration procedure of a test in order to accommodate test takers who are unable to take the test under standard test conditions" (p. 224). A distinction is generally made between accommodation and modification, as accommodation does not alter the construct being measured, whereas a modification is a change that alters the construct (Sireci et al., 2005). Critical attention will be placed on the modification of materials in the test to ensure that the constructs being tested remain. Adaptation and accommodation will be tools used more in developing the test for this demographic.

Assistive technology (AT) is an emerging way to support accessibility for people with disabilities through technology. AT methods can facilitate active control of the assessment of skills for test takers with IDD (Stasolla, 2022). A European standard of accessibility for Information and Communications Technology (ICT) products and services in the European Union has been developed and is called EN 301 549. The regulations found in EN 301 549, were developed in collaboration by several European standardization committees in 2014 as a response to the European Commission Mandate 376. The objective of EN 301 549 is to ensure that ICT applications and services are accessible directly or through compatible assistive technologies, for all people to access information and use services provided electronically (European Telecommunications Standards Institute, 2024).

Digitally administered tests (whether administered via computer, tablet, mobile, etc.) are commonplace in language assessment today. Digitally administered tests have the additional potential to allow test accommodations to be built-in with programming to allow for consistency in delivery. Inconsistency can be reduced, for example, when a presentation accommodation is applied via text-to-speech on a digitally administered test as opposed to being administered by individual test administrators with read-aloud accommodations. Russell, Hoffman, and Higgins (2009) suggest that the consistency found in digitally administered test results in a greater possibility of increasing test validity (Russell et al., 2009 as cited in Abédi, 2014).

Paper tests require more test administrators with special skills: i.e., bilingual translations, test instructions read aloud and/or items presented in the test takers' native language (Abédi, 2014). Nevertheless, paper tests are still a valid means of administering a language proficiency test for this population. Paper tests should be available for test takers who have a low level of familiarity with technology and for test takers who have disabilities that may affect their performance on digitally administered tests, i.e. fine motor skills or visual impairment. In a study on test performance and technology familiarity, results found that that test takers with low familiarity to technology performed worse on computer-based tests that required rapid visual scanning and keyboard work than their tech-familiar counterpart (Iverson et al., 2009).

Characteristics of the Test Takers

The sample group includes students over the age of 18 from the geographic area of Tarragona (Catalonia, Spain) with special educational needs (SEN). The piloting is expected to take part with a group of 12 adult test takers with IDD who have an endorsement of aptitude for employment. The test takers receive pre-employment support at the disability care centers of Fundació Onada Tarragona and Fundació Onada Torredembarra (FO). Participants attend the following programs at FO: the Special Work Center (Centre Especial de Treball: CET), the Occupational Integration Service (Servei

Ocupacional d'Inserció: SOI); the Foundation's pre-employment service (Servei prelaboral: SPL); Labor Intermediation Services (Serveis d'Intermediació Laboral: SIL); and Integral Services of Guidance, Accompaniment and Support (Serveis Integrals d'Orientació, Acompanyament i Suport :SIOAS). The piloting of the test will take place early 2025. The analysis of the data from the first pilot project test will be completed late 2025.

Research Context

This research is being conducted within the framework of the Industrial Doctorates plan, an initiative by the Generalitat of Catalonia aimed at fostering collaboration between academic institutions and industry. The program facilitates the integration of doctoral research into real-world applications to help bridge the gap between academia and industry while generating innovative solutions to practical challenges.

This project is a collaboration between the Generalitat of Catalonia and a non profit organization. A PhD student from the University of Rovira i Virgili is conducting research in close collaboration with Fundació Onada, a leading organization dedicated to supporting working-aged adults with IDD. An experienced academic from the university is supervising the research by providing guidance on the theoretical and methodological aspects of the study.

The primary objective of this project is to develop an adapted English proficiency test tailored to the needs of adult job seekers with IDD. This work aligns with Fundació Onada's mission to enhance employability and social inclusion of individuals with IDD. This collaboration will help to ensure that the test is not only a reliably accurate evaluation but also practically applicable in real-world settings. The aim of this collaboration is to contribute to the academic field of language assessment for special populations and to the broader societal goal of improving access to employment opportunities for individuals with IDD.

Research Design

Test Specifications

The test will be administered in three ways with a proctor present based on the test taker´s needs. These three ways are chosen to fit with presentation accommodations. Presentation assessment accommodations allow test takers to access information in alternate ways. For test takers with IDD beneficial alternate modes of access can be any combination of auditory, multi-sensory, tactile, and visual modes (Cortiella, 2005, Bottsford-Miller et al., 2006). Therefore, the test can either be taken:

- on a computer, with audio accessed by speaker or headset.
- on a tablet with a tactile touch screen and the use of the built-in speaker or headset for audio.

- on paper administered by a proctor who can either read or play recordings of the listening and audio parts aloud to the test taker and provide other auditory presentation accommodations.

With the computer and mobile device forms of the test any standard built-in Assistive Technology (AT) features available through android, ios, mac os, windows, etc. can be accessed by the test taker as needed. While this test is not considered an ICT product or service, it will still adhere to the AT recommendations set forth by EN 301 549 (European Telecommunications Standards Institute, 2024). AT methods ease active monitoring skill assessment for people with disabilities (Stasolla, 2022). Consequently, the test will be accessible for test takers through built-in AT features found in mobile and computer operating systems. For example, if test takers have visual impairments, contrast and color levels can be adjusted through built in AT adjustments to deliver the test in a more accessible manner. The paper test will be available to be printed in different contrast ratios and adjusted outputs depending on each individual test taker's visual needs.
Extended time is an accommodation that is commonly available to test takers with IDD. Increasing the allowable length of time to complete a test can be beneficial for test takers with IDD (Cortiella, 2005). In the area of extended time accommodation, the special case of unlimited time is included. Unlimited time often accompanies other accommodations such as Braille, oral presentation, separate testing location, text-to-speech, etc. (Sireci et al., 2005). Research has consistently shown that the extended time test accommodation significantly helps improve test scores for students with disabilities (Thompson et al., 2002). For these reasons the test we are developing will be administered with no time limit.

Text-to-speech is an accommodation that allows test takers to access information in alternative modes that do not require visually reading standard print (Cortiella, 2005). Recent studies with large sample sizes indicate that students with IDD benefit differentially from having the test spoken aloud or presented via text-to-speech (Laitusis, 2010). Test takers will be able to access test information from text, visuals, and audio in accommodated and adapted forms that use text-to-speech.

Initially the test will consist of tasks that follow CEFR assessment guidelines for English proficiency at the A1 level for the study. At a later phase the test will be augmented to assess other levels. The test's tasks will assess understanding, speaking and writing. The tasks that assess understanding will concentrate on listening and reading. Speaking tasks will assess spoken interaction and spoken production. Writing tasks will center on short demonstrations of written production in the form of words, phrases and paragraphs (Council of Europe, 2024).

For A1 understanding, listening skills will be assessed to determine if test takers can recognize familiar words and very basic phrases concerning one´s self, one's family and

immediate concrete surroundings from slowly and clearly spoken audio. For A1 understanding, reading skills will be assessed to determine that test takers can understand familiar names, words and very simple sentences, for example, on notices and posters or in catalogues, indexes or lists (Council of Europe, 2024).

For A1 speaking, spoken interaction will be assessed to determine that test takers can interact in a simple way provided the responding interlocutor can repeat or rephrase things at a slower rate of speech for clarification. In the case of audio recordings, the speed can be adjusted, and additionally simplified rephrased recordings will be available. The test takers will also be assessed to demonstrate spoken interaction by asking and answering simple questions in areas of immediate need or on familiar topics. Spoken production will be assessed to determine that test takers can use simple phrases and sentences to describe simple concepts, for example where one lives and the people one knows (Council of Europe, 2024).

For A1 writing, written production will be assessed to determine that test takers can fill in forms with personal details, for example entering one's name, nationality and address on a registration form. Assessment of written production will also determine if the test taker can write short personal excerpts, for example a simple postcard sending greetings and personal anecdotal information (Council of Europe, 2024). The types of tasks found on the test will correspond to assessment of writing skills, reading and listening understanding skills, and spoken interaction and production for speaking skills as laid out in the CEFR guidelines (Alderson et al., 2006).

To ensure the reliability and validity of the adapted English proficiency test for students with IDD, several rigorous strategies will be employed. Reliability will be maintained through standardized administration procedures, including a pilot phase to refine test items and ensure consistency, as well as statistical measures to confirm the stability of results over time. Furthermore to ensure comprehensive coverage of relevant language skills during the pilot phase, we are receiving expert feedback from educators and psychologists specializing in IDD.

Construct validity is maintained by basing the test on established language acquisition theories, such as the Linguistic Coding Differences Hypothesis, and by conducting factor analysis to determine that test items measure distinct language constructs. Criterion-related validity will be assessed by comparing test scores to existing validated test scores to determine the test's ability to predict language performance in practical applications. Face validity will be achieved through feedback from test takers and educators, to ensure that the test items are appropriate and relevant.

Additionally, customized accommodations, such as extended time and assistive technology, will be added to the test to improve accessibility without affecting test

content to preserve validity. To further ensure the test remains reliable and valid, ongoing validation and revision processes will continue.

Conclusions

According to the research from the literature review we believe that the adapted English language competency test for learners with IDD should include the following elements:

- The test should incorporate elements that take into account the affective needs of individuals with IDD. Mohammadian and Dolatabadi's study (2016) demonstrated the positive impact of affection in learning outcomes for students with IDD. There will be a focus on motivation, confidence, reinforcement, and reduced anxiety in the testing environment applied through testing accommodations and adaptations.
- The test content should be based on a balance of explicit and implicit assessment methods. Explicit tasks that use sight word recognition are beneficial for students with IDD when working on the receptive skill, reading (Reed, 2013). The test should include some explicit tasks when evaluating reading. These explicit tasks could include factual recall questions where high frequency sight words can be pulled from the text. Explicit matching tasks and blank fill tasks could also be included, where key sight words can be found directly in a text. Implicit tasks could include comprehension questions and practical language use scenarios that allow students to demonstrate their language skills through context. This balanced approach can ensure that the test assesses both language skills obtained through clearly stated specific texts and language skills acquired through exposure and practical use.
- The test should include task-based activities that require test takers to engage in practical language tasks. For example, experiential sections might involve listening to a short audio dialog and answering questions or participating in a simple speaking role play or interview. This method not only assesses language proficiency but also presents tasks that learners might encounter in real practical situations, making the test more relevant.
- Technology should be used in the test design to facilitate assessment accommodation and provide a more accessible testing experience for test takers with IDD. For example, tasks can include multisensory elements such as audio, touch screens, visual aids, and interactive questions to accommodate individuals' unique processes.
- Adding gamification to the test could help engage test takers while reducing their anxiety. Interactive tasks could be used to encourage test takers to demonstrate their skills in a more engaging environment. Gamification could also increase variety and customize tasks to individual needs and abilities.

An expected outcome of the results of this research is the creation of a reliable and valid test that will accurately reflect language proficiency of test takers with IDD and ultimately improve their employability and social inclusion. The successful implementation of this test is expected to have a significant impact on educational practice and policy, providing

a model for inclusive language proficiency assessments that could be adopted and adapted to different educational contexts. This test is aligned with the CEFR standards, ensuring that it is not only accessible, but also maintains credibility and recognition in both educational and professional settings. Furthermore, this study lays the foundation for future research, including the possible extension of the test to assess higher CEFR levels, thus providing a comprehensive tool that can support the lifelong language learning needs of individuals with IDD. This project emphasizes the importance of individualized language assessments and their role in promoting equal opportunities. It also contributes to further discourse on inclusive learning while supporting the development of policies to reduce barriers to employment for individuals with disabilities.

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CRediT Authorship Contribution Statement

Mar Gutiérrez-Colón: Conceptualization, Resources, Writing Original Draft, Review and Editing, Supervision, Funding Acquisition, Project Administration

Jonathan Pidgeon: Methdology, Investigation, Writing Original Draft, Review and Editing, Data Curation

Generative AI Use Disclosure Statement

Generative AI was employed solely for linguistic refinement and correction of language errors. All conceptual, analytical, and interpretative content was produced exclusively by the authors.

Ethics Declarations

World Medical Association (WMA) Declaration of Helsinki–Ethical Principles for Medical Research Involving Human Participants

This study was conducted in accordance with the ethical principles of the World Medical Association (WMA) Declaration of Helsinki. All participants, or their legal guardians when required, provided informed consent. The research procedures were reviewed and approved by the corresponding institutional ethics committee (Reports code: CEIPSA-2023-TDO-0083), ensuring the protection, dignity, and rights of all participants.

Competing Interests

The authors declare that they have no competing interests.

Data Availability

This study did not generate any datasets; it is based exclusively on published sources.

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