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Visual diversity in the English classroom: a successful exam paper adaptation. A case study*

Ana-Isabel Martínez-Hernández
Universitat de València/IULMA (España)
ana.isabel.martinez@uv.es
https://orcid.org/ 0000-0003-0226-3288

Begoña Bellés-Fortuño
Universitat Jaume I/IULMA (España)
bbelles@uji.es
https://orcid.org/0000-0002-6432-3226

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VISUAL DIVERSITY IN THE ENGLISH CLASSROOM: A SUCCESSFUL EXAM PAPER ADAPTATION. A CASE STUDY

ABSTRACT: This article presents a case study on the successful adaptation of an English language exam paper to visually diverse learners in the classroom. The study delves into the challenges confronted by a partially blind student with substantial sight loss and no prior Braille training when attempting traditional written English language exams. The identified obstacles encompass difficulties in navigating continuous text with text-to-speech (TTS) software, the reliance on images, and the impact of time constraints. The research underscores the effectiveness of adaptations made to the exam format to address these challenges and enhance accessibility and inclusivity. The findings reveal favourable outcomes for the student's performance and well-being during the adapted exam. The study stresses the significance of longitudinal studies to monitor the progress and language proficiency development of visually diverse learners over time. Such investigations would enable comparisons with non-disabled peers, shedding light on the impact of exam accommodations on learning outcomes.

KEYWORDS: visually impaired; inclusive education; exam paper adaptation; EFL; text-to-speech (TTS).

DIVERSIDAD VISUAL EN EL AULA DE INGLÉS: ÉXITO EN LA ADAPTACIÓN DE UN EXAMEN. UN ESTUDIO DE CASO

RESUMEN: Se presenta un estudio sobre la adaptación de un examen de inglés a estudiantes con diversidad funcional. El estudio profundiza en los desafíos que enfrenta un estudiante parcialmente ciego con una pérdida sustancial de visión y sin formación previa en Braille cuando intenta realizar exámenes escritos en la clase de inglés. Entre las dificultades encontradas el navegar en texto continuo con software de conversión de texto a voz (TTS), la dependencia de imágenes y el impacto de las limitaciones de tiempo. La investigación subraya la eficacia de las adaptaciones realizadas al formato del examen para abordar estos desafíos y mejorar la accesibilidad y la inclusión. Los hallazgos revelan resultados favorables para el desempeño y el bienestar del estudiante con diversidad funcional durante el examen adaptado. El estudio enfatiza la importancia de los estudios longitudinales para monitorear el progreso del dominio del lenguaje de estudiantes visualmente limitados a lo largo del tiempo.

PALABRAS CLAVE: discapacidad visual; educación inclusiva; adaptación de la evaluación; inglés como lengua extranjera; texto a voz (TTS).

DIVERSITÉ VISUELLE DANS LA CLASSE D'ANGLAIS : ADAPTATION RÉUSSIE D'UN TEST. UNE ÉTUDE DE CAS

RÉSUMÉ: Cet article présente une étude de cas sur l'adaptation réussie d'une épreuve d'examen d'anglais à des apprenants visuellement divers en classe. L'étude se penche sur les défis auxquels est confronté un étudiant partiellement aveugle avec une perte de vision importante et sans formation préalable en braille lorsqu'il tente des examens écrits traditionnels d'anglais. Les obstacles identifiés comprennent les difficultés liées à la navigation dans un texte continu avec un logiciel de synthèse vocale (TTS), le recours aux images et l'impact des contraintes de temps. La recherche souligne l'efficacité des adaptations apportées au format de l'examen pour relever ces défis et améliorer l'accessibilité et l'inclusivité. Les résultats révèlent des résultats favorables pour la performance et le bien-être de l'étudiant lors de l'examen adapté. L'étude souligne l'importance des études longitudinales pour suivre les progrès et le développement des compétences linguistiques des apprenants visuellement divers au fil du temps.

MOTS-CLÉS: déficience visuelle; éducation inclusive; adaptation des épreuves d'examen ; anglais comme la langue étrangère; synthèse vocale (TTS).

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1. Introduction

The ultimate aim of inclusion is to enable all students to engage in every stage of education with equal cognitive demands (Seale *et al.*, 2015). Achieving this requires ensuring equity in providing equal, high-quality opportunities (Opertti *et al.*, 2009). Equity and equal opportunities promote further inclusion, though complex political and social actions are needed for active participation (Fullan, 2007). Inclusion recognises the inherent barriers within current systems. In education, these barriers are due to the organisation of the system, teaching methodologies, learning environments, and assessment methods, rather than the disabilities themselves. This perspective views disability as a social construct, an abstraction arising from societal interaction rather than a medical issue (UNESCO, 2013, 2017). European educational programs—spanning primary, secondary, and tertiary levels—now advocate for inclusive systems. This shift from segregated to inclusive environments is driven by social justice and the promotion of equity and equal opportunities. Despite this, the lack of faculty training in higher education, insufficient understanding of disabilities and diversity, and inadequate support can hinder the learning process for students with disabilities (Álvarez-Pérez & López-Aguilar, 2015; Biewer *et al.*, 2015; Colón *et al.*, 2018; Dolan & Hall, 2001; Fernández Batanero, 2012; Hansen & Mislevy, 2008; Molina *et al.*, 2016; Morgado *et al.*, 2016; UNESCO, 2017).

Access to education is recognised as a fundamental human right, as established in The Universal Declaration of Human Rights (UDHR) (UN, 1948). Although the UDHR is not legally binding, it has influenced social and people's rights, which were later incorporated into the Spanish Constitution (art. 27.1 CE, 1978) and European policies. It cannot be denied that providing students with access to education is considered a "moral imperative" (Hansen & Mislevy, 2008: 1), and thus it is crucial to strive for inclusive and accessible approaches in all educational contexts. In recent decades, education systems have provided support staff and teaching assistants for students with disabilities or special educational needs, particularly at the primary and secondary levels. However, it was not until The Salamanca Statement and Framework for Action on Special Needs Education in 1994 that provisions explicitly called for the inclusion of all students in mainstream schools (UNESCO, 1994).

The term 'accessibility' in education refers to the inclusion of students with disabilities, leading to accommodations and modifications in the curriculum and teaching practices. In that regard, 'accommodation' involves providing additional support to students with special needs, ensuring fairness while upholding academic standards (Harrison *et al.*, 2013). However, 'modification' entails making changes to what is taught or expected from the student.

Moving towards the European context, Member States are working together to combat social exclusion and promote inclusive education, equality, equity, and non-discrimination (OJ C 417 15.12.2015: 33; EC/EACEA/Eurydice, 2016; OJ C 195: 7.6.2018: 2). The Convention on the Rights of Persons with Disabilities (UN General Assembly, 2007) also emphasises the right of persons with disabilities to access education on an equal basis with others, requiring reasonable accommodation (UN General Assembly, 2007, p. 14). Similarly, the European Pillars of Social Rights (EC, 2017) recognises the right to inclusive education and lifelong learning (EC, 2017). Furthermore, The Salamanca Statement (UNESCO, 1994) is the cornerstone of inclusive education. It endorsed equal access to education and non-discrimination, fostering greater diversity in all educational stages (Ainscow *et al.*, 2019), not least in higher education, while at the same time promoting a right to education (Council of Europe, 2016; European Court of Human Rights & Council of Europe, 2013; United Nations, 1948). As a result, diversity in the higher education classroom has seen an exponential growth, which has prompted a redefinition of the role of universities to effectively address the varied profiles of all students (Martínez-Carrasco, 2021). Despite these efforts, much remains to be done to fully integrate students with special needs into education systems (Vickerman & Blundell, 2010). Consequently, this redefinition places the responsibility for ensuring accessibility to curriculum, assessment, and content squarely on the lecturers.

Disabilities in primary and secondary education have been extensively studied by researchers and national and international bodies. Although the experiences of learners and teachers with functional diversity in higher education are documented (Bell *et al.*, 2017; Fuller *et al.*, 2004; Hurst, 2010; Moriña & Carballo, 2017; Mullins & Preyde, 2013), research on disabilities in higher education institutions remains limited. This is partly due to the low representation of this group in the higher education sector. Since the 1990s, there has been a demand for higher education to be inclusive, in line with other educational institutions (Moriña & Perera, 2020). Despite this vision, universities remain inequitable, with some authors suggesting that segregative and discriminatory practices still exist, creating barriers to participation and learning for students with disabilities (Bausela Herreras, 2002; Morgado, Cortés-Vega *et al.*, 2016; Moriña *et al.*, 2020; Moriña & Morgado, 2018; Oliver & Barnes, 2010).

This study aims to accommodate an English language examination paper for a partially sighted student in higher education, addressing the challenges of providing visually diverse students with access to examinations (Douglas *et al.*, 2009). The use of modern technological tools, such as text-to-speech (TTS) software, can foster universal design, granting partially sighted students full access to content, ins-

truction, and assessment (Dolan *et al.*, 2005, 2010; Dolan & Hall, 2001). However, despite progress, higher education still faces obstacles in providing inclusive education due to a lack of information and training for educators in this area (Dolan & Hall, 2001).

The study is conducted at a university with a Special Needs Unit supporting individuals with special needs within the university community. In this case, the unit mediates between the university and the Spanish national blind association (i.e., ONCE[1]), ensuring accessibility for visually impaired individuals. The research explores the use of TTS software, specifically *Jaws* (Freedom Scientific, n.d.), by a partially sighted student to access educational content. The research, which departs from the results obtained in a previous study (Martínez-Hernández & Bellés-Fortuño, 2021), seeks to eliminate accessibility barriers for VD students without compromising the validity of the assessment (Hansen & Mislevy, 2008). In that sense, this study aims to answer the following research questions:

RQ1: What are the challenges and obstacles faced by partially blind students when taking traditional English language exams?

RQ2: How can English language exams be modified to accommodate partially blind students who are illiterate in Braille? Ensuring they have equal access to the content and assessment.

2. Method

This paper builds upon a preceding study by Martínez-Hernández and Bellés-Fortuño (2021), wherein the researchers endeavoured to adapt a B2-language test to a student with a severe degree of sight loss. The present case study was undertaken in a second-year English language course within a linguistics-related degree at a Spanish university. The course syllabus and the learning outcomes have been formulated under the premise that all students have acquired a B2 level, which is typically attained upon successful completion of its homologous subject in the previous year. This is important considering that the linguistic content taught in the module at hand aligns with the C1-level descriptors of the Common European Framework for Language Reference (CEFR) (Council of Europe, 2020). Notwithstanding, it is important to note that neither a B2 certificate nor a passing grade in the aforementioned first-year language module is a requirement for enrolment in this particular module, yet highly recommended.

The undergraduate degree in which this study was conducted requires a high command of English in different subjects with dedicated language courses provided in the initial two years. Given the central role of English in facilitating successful completion of other modules,

[1] Spanish acronym for *Organización Nacional de Ciegos Españoles*.

it becomes crucial to equip all students with the requisite high-level linguistic comprehension and production skills.

2.1. Procedure

The methodology followed for this study builds upon the procedure employed and the results obtained in a prior investigation. In the preceding research by Martínez-Hernández and Bellés-Fortuño (2021), a series of steps were implemented to collect qualitative data aimed at ensuring accessibility for the partially sighted student. This involved conducting several interviews with a tutor at ONCE, staff at the Disability and Diversity Unit at the university, and the student. The accommodations identified during these interviews were subsequently applied. The conclusions and recommendations for adaptations derived from those initial meetings served as a valuable foundation for fully adapting the assessment to meet the needs of the learner with special needs.

Nevertheless, not all suggestions were accurate or accurately implemented, which resulted in a trial-and-error approach in the methodology. Despite the occasional inadequacies, especially regarding the Listening and Reading and Use of English papers, several other changes proposed by the interviewees to enhance accessibility in the examination paper for the visually diverse (VD henceforth) student were deemed reliable and valid. One of the successful accommodations involved the adoption of text-to-speech (TTS) software in order to make the examination paper accessible to the learner. This accommodation was maintained due to its ability to provide a barrier-free assessment paper along with the layout, as reported by the student. This entailed eliminating dotted lines and having all multiple-choice options embedded in the text rather than in a separate section.

Subsequent to the initial study, the researchers gathered qualitative data from the student's experience in order to refine future adaptations. Some authors defend that students' voices and experiences are heard, particularly in questions concerning accessible assessment methods (Healey *et al.,* 2006; Madriaga, 2007 as cited in Vickerman & Blundell, 2010). Hence, their[2] feedback was of the utmost importance for the present study and instrumental in the comprehensive design of forthcoming examination papers.

The exam paper to test C1 level in this module includes the assessment of all four skills, divided into four papers accordingly. Firstly, the Speaking paper consisted of two parts: a monologue and a dialogue. For the former, students are given a set of three pictures, from which they should pick two, and two questions to help them compare the

[2] The use of the third person plural in its different forms is used to refer to the student in question in order to keep anonymity.

photographs and speculate about the situations illustrated. For the latter, they are given a question to discuss in pairs. In this part, they are expected to give their opinion on a specific topic using a variety of structures with supporting and convincing arguments. In light of the results obtained in the previous study, oral production did not pose a challenge to the visually diverse learner, and the adaptation was successful. Therefore, the same method was employed in this exam: the prompts were read aloud, and the images were described for the learner to be able to answer the questions. Hence, this study will not delve into the Speaking paper in detail.

Secondly, the Reading and Use of English paper consists of eight distinct sections, each serving a specific purpose. Parts 1 to 4 are designed to assess students' proficiency in lexical and grammatical aspects of the language, while Parts 5 to 8 are dedicated to evaluating their reading comprehension skills and related techniques. Part 1 entails a short multiple-choice gapped text comprising four options per gap, with one correct answer that appropriately fits the sentence. In Part 2, the students encounter another gapped text; however, they are not provided with options. Instead, they are required to identify the suitable word by carefully considering the sentence's syntactical context and meaning. Likewise, Part 3 also lacks options, and students are given a word from which they must form a derivative fitting into the gap while maintaining the meaning of the short text. Part 4 evaluates learners' ability to demonstrate their command over equivalent grammatical structures, synonymous vocabulary, and collocations by employing paraphrasing and rewriting techniques. Subsequently, Part 5 introduces a longer text to the students, accompanied by multiple-choice comprehension questions that necessitate the identification of specific information within the text. Part 6 aims to evaluate students' capacity to contrast information across multiple texts. To achieve this, they are presented with four short topic-related texts along with four corresponding statements summarising connections between them, which students must correctly match. Part 7 involves four short texts, each expressing distinct opinions or attitudes from four different individuals, followed by ten questions. Here, students must identify the text containing the requested information. Finally, Part 8 centres on the coherence and cohesion of a text. In this section, learners are presented with a text missing six paragraphs and are evaluated based on their ability to discern anaphoric and cataphoric connections, that knit the text together in a harmonious and cohesive linguistic unit.

Thirdly, the Listening paper within the original, unmodified examination comprised four distinct tasks, each of which was introduced and explained by a voice-over, providing guidance to learners as they progressed through the activities. In the initial administration of the listening test, all tasks were presented twice to the students

for enhanced comprehension. Part 1 encompassed three excerpts of conversations, each accompanied by two multiple-choice questions. Conversely, Part 2 demanded students to transcribe the word they heard to complete written prompts summarising the main ideas from the monologue played. Part 3, akin to Part 1, constituted a multiple-choice activity. However, unlike Part 1, it entailed an uninterrupted interview, wherein six questions were posed without the interlocutor intervening to signal the transition to the subsequent question. Nonetheless, the interviewer's queries occasionally served as cues for a shift in focus and, consequently, a new question. In Part 4 of the Listening paper, two tasks were concurrently presented. Students were tasked with listening to five speakers and matching one of the eight statements provided in each task to the corresponding speaker. Lastly, the Writing paper necessitated students to construct an argumentative essay, thus evaluating their ability to express coherent and persuasive arguments.

In the preceding sections, we have delineated the format of the initial examination designed for non-disabled learners. The subsequent subsection will elucidate and expound upon the accommodations and adaptations introduced to render the English exam paper accessible to visually diverse learners. In this regard, the successful accommodations previously implemented in a prior study have been carefully considered (AUTOR), alongside supplementary modifications to enhance inclusivity.

2.2. Accommodations in written test

2.2.1. Reclaimed accommodations

Based on the findings of our prior investigation (see Martínez-Hernández & Bellés-Fortuño, 2021) and considering the obstacle that a printed exam paper poses for partially blind students, it was determined that providing a digitalised version of the examination (Douglas *et al.*, 2009) was essential. This approach enabled access to the test through TTSsoftware. Consequently, under supervised conditions, the learner would utilise a laptop to complete the exam, ensuring "access to their preferred format" (Douglas *et al.*, 2009: 4) to ensure the authenticity and fairness of the assessment. Additionally, we maintained the overall layout and design of the test, building on the first adaptation while incorporating further adjustments and enhancements. In line with the successful accommodation from our previous study, the answer sheet was eliminated, providing added convenience for the learner in this instance. Moreover, we continued to improve the layout and design by replacing dotted lines with a number in brackets for cloze questions. In the case of multiple-choice responses, they were

directly presented within the gap to facilitate comprehension and completion.

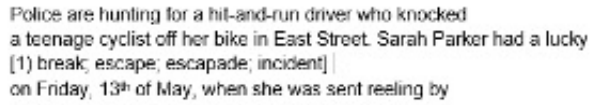

Figure 1. Reading and Use of English Part 1. Taken and adapted from (Examination papers from the University of Cambridge local examinations syndicate., n.d.)

Concerning the matter of timing, the Diversity and Disability Unit, in line with existing recommendations and in close consultation with the tutor from the National Organisation of the Blind in Spain (ONCE), advised that the student should be afforded an additional 50% of the allocated time to effectively complete the examination paper. This deliberation aligns with prevailing research advocating for extended time allowances as reasonable accommodation for students with visual impairments (NatSIP, 2017; Opie, 2018). By providing this extra time, the objective was to ensure that the student had ample opportunity to comprehensively demonstrate their knowledge and skills during the assessment process. Thus, the timing was accommodated as shown in Table 1 below.

Written test paper	**Regular timing**	**Accommodated timing**
Reading & Use of English	1h 30 min	2h 15min
Listening	45 min	1h 10min
Writing	1h	1h 30min

Table 1: Examination timing

In light of the outcomes derived from a previous study, wherein analogous recommendations were implemented, and an unforeseen timing accommodation was necessitated in response to the participant's experienced "angst and frustration" (Martínez-Hernández & Bellés-Fortuño, 2021: 83), the decision was carefully evaluated. It was recognised that providing an extended time allocation beyond the experts' suggestions would potentially result in inequity and unfair treatment towards the other students in the cohort.

Previous results obtained in a similar study showed that time constraints generated "angst and frustration" to the students in which the same recommendations were applied (Martínez-Hernández & Bellés-Fortuño, 2021: 83); therefore it was considered that giving more time than the one suggested by the experts would imply inequity, and unfairness to the rest of the students. At the same time, such an

approach would inadvertently lead to unwarranted positive discrimination.

2.2.2. Refined and new adaptations

The accommodations and adaptations implemented in a previous study required further refinement to enhance their effectiveness. Therefore, the study presented here presents the subsequent improvements encompassed the incorporation of sentence heading styles, sentence fragmentation in certain sections, providing a different examination setting, and modifications to the listening paper.

2.2.2.1. Style: headings and font

Easy navigation and font choice are two of the maxims of accessibility, especially for learners with low vision (Russell-Minda *et al.*, 2007). To cater to that requirement, the sans-serif font Arial was employed, as studies have indicated its superior legibility compared to Times New Roman (Russell-Minda *et al.*, 2007). Furthermore, the incorporation of headings with the styles tool in the word processor was implemented to facilitate seamless navigation throughout the document (Figure 2).

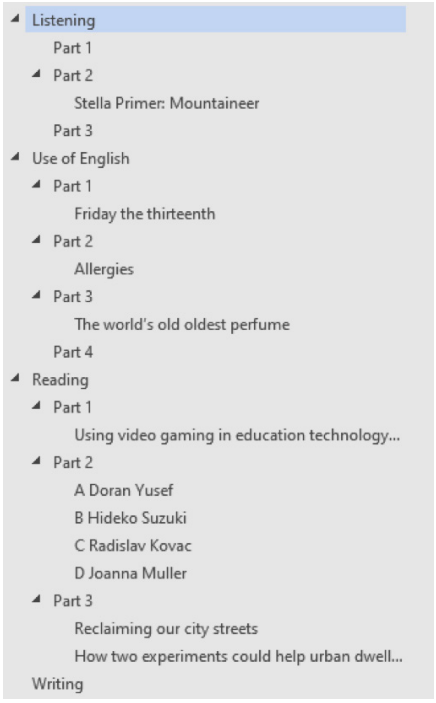

Figure 2: Exam navigation panel

2.2.2.2. Breaking the text

With regard to the Reading and Use of English, paper modifications were made to the layout of texts. Typically, in a word processor, writers would start a new paragraph by simply pressing the "enter" key, mirroring the conventions of handwriting. However, upon conducting an interview and seeking input from the student after the first study, a novel approach was proposed, involving breaking sentences midway for enhanced navigation, as depicted in Figure 1 above. Placing significant importance on accommodating the student's preferences was informed by the findings of Vickerman and Blundell (2010), who emphasised the value of considering individual needs and preferences in fostering an inclusive learning environment.

To maintain the syntactic flow of sentences while accommodating the needs of visually diverse learners, the exam designer, guided by the researchers' counsel, employed a fragmentation approach based on conceptual units such as phrases. For instance, in Figure 1, it is worth noting that "a teenage cyclist", which is a noun phrase, is all in the same line. Phrases were only split when the gap to be filled was part of it. The options to complete the gap were then presented on a new line below the fragmented phrase. This can also be seen in Figure 1, where the idiom "lucky break" is incomplete; thus, the options to complete it are in a new line, namely *break*, *escape*, *escapade* and *incident*.

This partitioning technique was consistently applied across all texts, regardless of their length, with the primary aim of alleviating the need for horizontal navigation of the text with the cursor. Shorter text fragments were preferred to facilitate easier retention and location of information by the learner, as per their experience. The chosen TTS software would read the entire information in a non-stop manner until reaching the end of a paragraph. Therefore, not only was it more convenient for the learner using the speech-to-text software to have sentences fragmented to control the amount of input the program read, but also to locate more efficiently the lines where the options were in the event the learner wanted to review the answers before handing the paper in.

2.2.2.3. Different setting

To create a more conducive environment for the student, a distinct room was designated for their test, and a module lecturer supervised the process. This decision was based on the findings from Martínez-Hernández and Bellés-Fortuño (2021)'s study, where the student expressed feelings of being overwhelmed and anxious due to the pace set by their peers during the standard-format exam. Allocating a separate setting raised concerns about potential non-inclusive practices and the possibility of (positive) discrimination. However, in this particular scenario, prioritising the student's access to the assessment

took precedence over pursuing full inclusion. It was a prime concern to ensure both accessibility and the completion of the examination within the allotted time frame. By providing an alternative classroom, not only were accessibility and time management addressed but also allowed for the necessary adaptation of the listening paper, which will be elaborated upon in the following subsection.

2.2.2.4. Listening paper

One significant modification to the test could be found in the listening paper. As explained above, the regular listening exam contained four parts, whereas the adapted version comprised three, one of which was modified. Part 1 remained unchanged, and the text in Part 2 was slightly adjusted to follow the aforementioned text-partition method. Nevertheless, Part 3 underwent a significant transformation: the initial multiple-choice design was reconfigured into a True or False activity. To that end, the course lecturers transformed questions into statements, using the correct and incorrect multiple-choice options to write true or false statements accordingly. The decision to switch to a true or false format was strategic, considering that multiple-choice questions demand higher word retention and memorisation levels from learners. With each of the six questions requiring the recall of four possible responses, the cognitive burden can be considerable. In contrast, true or false tasks would alleviate memorisation challenges, as learners would only need to remember six sentences, simplifying the processing demands. Moreover, Part 4, a matching exercise, was obviated from the examination entirely, taking into consideration that enough activities had been included to assess the listening practice, and also considering alleviating time to the student. This decision was predicated on the recognition that navigating the document and simultaneously completing two tasks would likely prove frustrating and overwhelming for the learner. By removing this aspect, the assessment process aimed to reduce unnecessary cognitive load and ensure a more manageable and equitable experience for the student.

Another aspect that underwent slight modification in the listening paper pertained to the number of times the recordings were played. In the standard listening exam, two playbacks were offered for each task. However, for the adapted version, an additional opportunity was granted, thus affording the student a total of three opportunities to access the auditory content. This adjustment was made with the recognition that screen readers cannot process information as swiftly as the human eye, necessitating additional time for the text-to-speech tool to audibly convey the written information. Consequently, the student with partial sight requested pauses during the audio playback to ensure sufficient time for the screen reader to read out the written

information. After that, they would notify the lecturer that they have read the questions, who would subsequently resume the audio.

2.2.2.5. Dismissed tasks

During the qualitative data collection phase, the learner was queried about their prior experience with a language test exhibiting similar characteristics. The learner confirmed that tasks necessitating constant navigation proved the most challenging, as they required the retention of substantial information and its specific position within the document. Consequently, as an adaptation to address the learner's needs and ensure unimpeded access, Part 4 of the Listening paper was excluded from the examination as explained in the previous section. Furthermore, modifications were made to another section of the exam, namely the Reading and Use of English paper, which typically involved four Use of English tasks and four Reading tasks for non-disabled peers. However, the student with partial sight was provided with three reading tasks instead, and Part 8 was omitted altogether. Although the student suggested having all six paragraphs listed for each gap to enable the selection of the correct one, the lecturers, in collaboration with experts and researchers who drew on previous experiences, decided to remove this part entirely. The decisions were informed by a comprehensive evaluation of the student's feedback and insights, as well as expert guidance, to ensure that the assessment process was fair, accessible, and conducive to the student's academic success.

This section has reviewed the steps followed as well as the context in which the study was conducted and adaptations implemented. The following section will present the results obtained in the exam adaptation for this case study.

3. Results and Discussion

The oral production aspect required comparatively fewer adaptations, as the barriers could easily be overcome to obtain enough oral production from the student in question. However, a minor modification was needed in the monologue section, which typically entailed students comparing photographs and speculating about them, providing responses based on given questions. Given the visual disability of the student, they were exempted from the task of image comparison. Instead, the lecturer-examiner furnished a concise oral description of the images, enabling the learner to speculate and hypothesise about the depicted scenarios. Despite the apparent straightforwardness of this adaptation, it is essential to underscore the importance of carefully designing speaking tests to ensure they remain free from any form of discrimination. For instance, to create greater accessibility for all learners without necessitating adjustments, employing short text

prompts or oral questions that prompt monologue responses may be preferred over using images. By doing so, the student with a visual disability can participate fully in the task, without any sections being omitted, thus fostering greater equality and minimising any unintended positive discrimination. Furthermore, while written notes may be read aloud for the student with a visual disability, adopting a design that accommodates all learners without reliance on adaptations can lead to a more inclusive assessment environment. Such an approach is conducive to promoting equitable opportunities for all students to engage fully in the oral production component.

With regard to the adaptation of the written parts of the examination paper where all sentences in the texts had been fragmented into more navigable chunks, and headings were created with the styles tool embedded in the word-processor software, the results reveal that the exam was free from obstructions for the learner and completion was not hampered. Along the same lines, a correct adaptation of the text-based exam material seemed to ameliorate anxiety and stress levels according to the student's comments to the teacher, in contrast with our previous study (Martínez-Hernández & Bellés-Fortuño, 2021), in which breaking up sentences was not anticipated as a potential adaptation. The implementation of a more accessible text format effectively mitigated these negative emotions, enabling the learner to complete the tasks within the allotted adapted time.

Furthermore, in alignment with the findings reported by Martínez-Hernández and Bellés-Fortuño (2021), the implementation of TTS software demonstrated its efficacy in facilitating access to text for a visually diverse student with significant sight loss and no prior training in Braille. Similarly, relocating the multiple-choice answers to the position of the original gap in the non-adapted exam yielded successful outcomes, which resonates with the results of the present study. However, it is important to note that, in this study, this particular technique was solely applied in Part 1 of the Reading and Use of English paper.

In regard to the adaptation of the Reading and Use of English paper, the strategic relocation of multiple-choice answers to the gaps in incomplete texts, along with the fragmentation of those answers on separate lines, effectively facilitated the functionality of the text-to-speech software. This approach enabled the software to read short texts aloud while also facilitating the learner's vertical text navigation with the cursor by making the position of the options more discernible. Additionally, the suppression of Part 8 from the Reading and Use of English examination paper resulted in reduced stress and anxiety levels, in contrast to our observations from the corresponding section in the previous study. Moreover, this adaptation played a crucial role in adhering to the designated time constraints of the accommodated timing.

Regarding the completion of the Listening paper, the outcomes markedly contrast with our previous study, where learner frustration, anxiety, and stress resulted from inaccurate adaptations, ultimately impeding the completion of certain tasks and undermining students' performance (Martínez-Hernández & Bellés-Fortuño, 2021). Consequently, last-minute improvised adaptations had to be implemented. However, in the current study, no additional adaptations were required on the day of the examination, as no unforeseen barriers emerged.

As regards the Writing paper, inasmuch as a production task, no barriers were foreseen or encountered during the examination process. Nevertheless, the written outcome suggests that the student might have encountered challenges in organising the text, giving rise to two plausible explanations. One hypothesis is that (a) navigating through the text while writing was not straightforward or was time-consuming. Alternatively, another hypothesis is that (b) the learner may not have attained the C1 level throughout the year-long module.

Overall, the findings seemed to demonstrate that the accommodations made regarding the setting, timing, and format, as detailed earlier, were well-suited for the learner, as they facilitated access to the assessment, as the student privately shared with the teacher, comparing previous examinations taken. The examination was completed within the stipulated time limits, and the student experienced minimal frustration. These results contribute valuable insights into the adaptation of language tests for learners with visual impairments, offering guidance for more effective and inclusive assessment practices.

4. Conclusions

This study set out to investigate the challenges and obstacles faced by partially blind students when taking traditional written English language exams and explore how such exams could be modified to ensure equal access and accommodation for visually diverse learners who are not literate in Braille. Through a case study approach, various adaptations were implemented to create a more accessible examination experience for the participant with visual impairment.

This paper departed from two main research questions (RQs), regarding RQ1, i.e., "What are the challenges and obstacles faced by partially blind students when taking traditional English language exams?", one major difficulty lies in navigating through the text using text-to-speech software, particularly when the text is presented as a continuous passage with gaps. The lack of clear breaks in the text can make it challenging for the software to accurately read and interpret the content, leading to potential comprehension issues for the visually impaired student. Additionally, tasks involving the comparison and description of images pose significant challenges, as images are not

accessible to students with visual impairments. Moreover, the strict timing of exams can be a source of stress for partially blind students, especially when they need additional time to access and process the exam content due to their visual disability. These challenges highlight the importance of creating accessible exam formats and appropriate accommodations to ensure that partially blind students have equal opportunities to demonstrate their language proficiency.

In response to RQ2, i.e., "How can English language exams be modified to accommodate partially blind students who are illiterate in Braille, ensuring they have equal access to the content and assessment?", successful adaptations were introduced, particularly in the Listening and Reading and Use of English papers. These modifications included text fragmentation, text-to-speech software utilisation, and strategic positioning of multiple-choice answers. These adjustments proved effective in enhancing the accessibility and overall experience for the participant. However, full inclusion was not entirely attained, indicating the need for continued efforts to make language exams more inclusive for visually diverse students. To enhance the inclusivity further, it is recommended that the speaking paper should refrain from utilising pictures, as they present an unnecessary barrier for visually impaired students. Instead of relying on images, providing text instead of the images can ensure that all students can engage in these tasks on an equal footing. By employing text prompts or oral questions as alternatives, the examination can become more equitable and accessible for all learners.

As with any case study, this research has certain limitations. The results obtained may not be directly replicable in other contexts due to the uniqueness of each student's visual impairment and individual preferences. Additionally, the study focused on a single participant, limiting the generalisability of the findings. Further research involving larger sample sizes and diverse contexts would be beneficial to gain a more comprehensive understanding of the challenges faced by visually diverse learners in various examination settings.

Further studies on the current topic are recommended, especially to explore alternative assessment formats that do not rely on visual elements, such as images, and design tasks that solely use text prompts or oral questions to assess students' language proficiency, thereby eliminating potential barriers for visually impaired learners. Moreover, research is needed to investigate the impact of different exam accommodations on the performance of visually impaired students in language exams. Longitudinal studies should be conducted to track the academic progress and language proficiency development of partially blind students over time, comparing their performance with that of non-disabled peers. These studies will help analyse the impact of specific accommodations on their overall performance and

determine whether these accommodations positively influence their language learning outcomes.

In conclusion, this study sheds light on the challenges encountered by partially blind students during traditional English language exams and emphasises the significance of appropriate accommodations to ensure equal access to content and assessment. While successful adaptations were made, achieving full inclusion remains a goal worth pursuing. By continuously refining examination formats and considering the needs of visually diverse learners, language tests can evolve into more inclusive and equitable assessments for all students.

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Author contributions

Ana-Isabel Martínez-Hernández made significant contributions to multiple aspects of this research. She was responsible for the design of the examination, conducted data collection, and wrote the introduction, methodology, results and discussion sections of the article. Additionally, she formulated the conclusions based on the study's findings.

Begoña Bellés-Fortuño contributed to the final revisions of the article, played a pivotal role in writing the abstract and applied formatting.

Both authors actively participated in the development and review of the manuscript, ensuring its accuracy and coherence.