

## **Perceived Fairness of Exam Accommodations for Students with Special Educational Needs**

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## Abstract

Implementing an inclusive school means that teachers should use exam accommodations to foster the participation of students with Special Educational Needs (SEN). However, due to the emphasis on merit in most school systems, this practice can create a dilemma between equality and equity that can influence the perceived fairness. Three studies (N = 1,525) aimed to examine this question on different types of accommodations (e.g., extra time, oral exam, a scribe, a computer, or exemption). Results indicate a differentiated perception of accommodations in terms of fairness but also comparability. In addition, the more teachers believe assessment should support student learning, the more they perceive exam accommodations as allowing comparisons of students' performance, and the fairer they perceived accommodations. Therefore, while exam accommodations are intended to support students with SEN to demonstrate their abilities and promote equity, the present findings suggest that it might have counterproductive effects that we should consider.

Keywords: Assessment, Accommodation, Disability, Fairness, Meritocracy, Teachers

## **Perceived Fairness of Exam Accommodations for Students with Special Educational Needs**

The inclusive education paradigm aims to support the schooling of all students, particularly those with disabilities (Ainscow et al., 2019). Implementing an inclusive school means ensuring that every student has equal opportunities not only to learn in the classroom but also to demonstrate their mastery of that learning in exams. Therefore, if teachers are expected to provide accommodations during instruction for students with Special Educational Needs (SEN), they are also expected to apply these accommodations during assessments. However, this practice presents challenges for teachers, students, and their peers. Some argue that modifying assessment conditions may prevent an accurate evaluation of a student's competence, or may be perceived as unfair, as it could appear that certain students receive additional support compared to others. In this paper, we seek to better understand these concerns by specifically studying the perceived fairness of exam accommodations and identifying potential barriers and facilitators to the full inclusion of students with SEN. To achieve this, we first define the key constructs of fairness and exam accommodations. Then, we explore how, despite their intended alignment with inclusive principles, the challenges associated with accommodations may stem from the very structure and function of educational systems.

### **Fairness in Classroom Assessment**

Assessment is a cornerstone of education. While its primary goal is to ensure students learn the required knowledge and skills, it also plays a crucial role in collecting and analyzing information to support their learning (Bennett, 2011). However, assessment is not only a learning tool, but it also impacts students' school experiences, influencing their well-being (Paloş et al., 2019), and motivation (Pulfrey et al., 2011). Indeed, assessment outcomes, particularly grades, determine students' placement into educational tracks and programs and, ultimately, their positioning in the labor market (Sievertsen, 2023). Given the high stakes of this sorting process, and the well-established link between diplomas and quality of life (Edgerton et al., 2012), it is expected that assessment should be fair.

Fairness in assessment is understood as ensuring that all test takers receive equitable treatment and are not unduly advantaged or disadvantaged during the testing process

(American Educational Research Association et al., 2014). In other words, assessments should be designed and administered in a way that offer all students a fair opportunity to demonstrate their abilities, a perennial concern (Tierney, 2013).

Research suggests that students notably perceive assessments as fair when the content of the test matched their expectations (e.g., what they were taught, what they studied) but also when the outcomes they receive (e.g., grades) reflect their efforts (e.g., study time, participation), and when this effort-to-outcome ratio aligns with that of comparable peers (i.e., the equality principle, Deutsch, 1979; Rasooli et al., 2019). However, students also view fairness when individual needs are considered, i.e., the need principle (see Scott et al., 2014). That is, if a student needs more time to complete a test, then he or she should benefit from such time. In this perspective, exam accommodations are intended to support the social participation of students with SEN. However, as we discuss in the next section, not all accommodations to these needs are perceived as fair, probably explaining the concerns surrounding their implementation.

### **Exam Accommodations for Students with Special Educational Needs**

Kettler (2012) defined exam accommodations as “alterations to tests’ standard administration procedures that are made to overcome individuals’ functional impairments, in order to increase the validity of inferences that can be made from the resulting scores” (p. 53). These accommodations take several forms, such as extra time, assistance from a scribe, adapted communication tools, the use of appropriate equipment (e.g., a computer), a separate testing room, or exemptions from certain exams or parts of them. Despite the ethical and legal justifications for their implementation (De Beco, 2018), accommodations raise several concerns. Among them, it has been emphasized that accommodations should not alter the skill or knowledge being assessed but should instead help students access the test so that their scores remain comparable to those of non-accommodated students (see Kettler, 2012). As a result, a substantial body of research has examined the effectiveness of exam accommodations to categorize those who are “suitable” (for a review, see Sireci et al., 2005, for recent empirical results see Vidal Rodeiro & Macinska, 2022). However, results remain ambiguous. Experimentally testing the effects accommodations presents methodological challenges, as students often receive multiple types of accommodations,

making it difficult to isolate their individual impact (Sireci & O’Riordan, 2020). Moreover, valuable insights also come from students themselves, which may not be captured through experimental methods. For example, while extra-time does not consistently improve performance (Cormier et al., 2010) or for all students regardless of their needs (Sireci et al., 2005), students could report benefits such as reduced anxiety, better opportunities to demonstrate their competences, or even improved grades (Slaughter et al., 2020). Finally, although exam accommodations are intended to support students who need them, they should not excessively reduce the performance gap between accommodated and non-accommodated students to the point where they may be perceived as a form of cheating (Nieminen & Eaton, 2024). In other words, there is a risk that accommodations may be perceived as providing an undue advantage to some students – especially if they result in students with SEN outperforming their non-accommodated peers (Egan & Giulano, 2009).

This highlights the complex relationship between exam accommodations and perceived fairness. While accommodations aim to enhance fairness by accounting for individual differences and needs, the notion of fairness in this context is interpreted in multiple – and sometimes conflicting – ways. This conceptual ambiguity may partly explain why some students experience guilt or shame when requesting accommodations, leading them to refrain from doing so (Hartman-Hall & Haaga, 2002). It may also account for the diversity of perceptions among students’ peers: some perceive fairness as treating all students equally, while others argue that it requires adapting assessments to individual needs (Murillo & Hildago, 2017). Finally, teachers also express mixed views: while many acknowledge the importance of providing accommodations (Scott et al., 2014), they may still be reluctant to apply them (Khamzina et al., 2023; Hawpe, 2013). In other words, while exam accommodations are intended to promote fairness, they are not always perceived as such by the educational community. In the next section, we argue this discrepancy is partly rooted in one of the fundamental functions of educational systems: selection.

### **Incompatibility Between Fairness and Exam Accommodations?**

In most Western countries, educational institutions serve two primary functions: an educational and a selection function (Dornbusch et al., 1996). While the former aims to provide all students with the knowledge and skills they need, the latter is designed to sort

students into different academic tracks, distinguishing between vocational and academic pathways (Darnon et al., 2009; Sievertsen, 2023). This selection process inherently fosters competition between students (Butera et al., 2023) and is expected to operate under an equity-based principle of justice (Deutsch, 1979), meaning that rewards should be allocated equitably, notably based on students' individual merit, as measured by their performance on assessments.

However, some researchers argue that merit-based selection is fundamentally incompatible with current educational practices that focus on students' needs (Benjamin, 2002; Khamzina et al., 2021; Stanczak, Jury et al., 2024). More precisely, the inclusive education policies that support exam accommodations conflict with strictly egalitarian principles that call for treating all students in the same way, regardless of their individual needs (Benjamin, 2002; De Beco, 2018). Therefore, while exam accommodations are meant to remove barriers for students who need them, they may confront teachers with a dilemma between the principles of equality and equity — that is between treating all students equally and addressing some individual needs without neglecting others (Thomazet et al., 2014). This may lead them to feel that such adjustments disrupt the level playing field by potentially distorting the results of merit-based assessments (Stanczak, Jury et al., 2024; see also Barton & Slee, 1999).

This dilemma has important implications. Studies indicate that teachers who strongly endorse meritocratic principles tend to be less supportive of inclusive education (Khamzina et al., 2021), more inclined to foster competitive classroom practices (Darnon et al., 2023), and less likely to implement accommodated materials – particularly in assessments – for students with SEN (Khamzina et al., 2023). As a result, since some teachers may fear that exam accommodations undermine the ability to identify the most “deserving” students, this could lead them to avoid applying accommodations or to question the validity of performance evaluations for students who receive them.

### **The Present Study**

Fairness in classroom assessment remains a central issue for both practitioners and researchers (Tierney, 2013). According to Rasooli et al. (2019), students perceive

assessments as fair when their contribution-to-outcome ratio is comparable to that of a similar student, even if that student has distinct needs. However, exam accommodations – despite being designed to address these needs – are often viewed cautiously by the educational community. There is concern that accommodations may offer an unfair advantage, potentially resulting in a performance that does not reflect the student’s “true” merit or academic level, thereby threatening the validity of grade-based tracking processes (i.e., the selection function).

Building on this context, the present research aimed to examine perceptions of several exam accommodations in terms of both fairness (Studies 1 to 3) and comparability (Studies 2 and 3). Given the emphasis on merit in educational systems, we anticipated that accommodations would be viewed differently, particularly those that might suggest a distinct effort-to-outcome ratio (e.g., human assistance or exemptions). Additionally, as discussed below, our studies also investigate how these perceptions relate to teachers’ beliefs in school meritocracy (Study 2) and their conceptions of assessment (Study 3). All data and materials for these studies are available for interested readers at:

[https://osf.io/r4kgh/?view\\_only=6228152edebb4f4ea541336e0ba533bb](https://osf.io/r4kgh/?view_only=6228152edebb4f4ea541336e0ba533bb).

## **Study 1**

### **Method**

#### ***Participants***

For this study, we reanalyzed secondary data from five experiments conducted within the same research project (2021-2023) examining the impact of exam accommodations on perceptions of competence for students with SEN. These data, compiled in an internal meta-analysis (Goh et al., 2016), include responses of 712 participants in France.

The sample consisted of 169 participants who identified as men, 509 as women, and 34 who either did not respond or preferred not to disclose their gender. Regarding professional and educational background, 11.7% ( $n = 83$ ) were members of the public, 55.9% ( $n = 398$ ) were pre-service and in-service teachers, and 32.4% ( $n = 231$ ) were university students. The mean age was 28.33 years ( $SD = 11.34$ , range = 17 - 78).

#### ***Material and Procedure***

In the five experiments from which these data were gathered, participants were invited to grade the exams and assess the perceived competence of two students: one without and one with SEN. At the end of these experiments, before completing demographic measures, participants rated the perceived fairness of five exam accommodations using a 5-point scale (1 = "not at all unfair" to 5 = "completely fair"). Each participant rated all five accommodations, which were presented in a randomized order. The five accommodations were selected based on their prevalence in educational settings and their relevance to the needs of the students with SEN portrayed in the scenarios. Participants rated the perceived fairness of the following accommodations: additional time, the use of a computer instead of paper and pencil, exemption through the reduction of the quantity of work, assistance from a scribe to write the answers, and replacement of the written exam by an oral one. It should be noted that depending on the study, participants were evaluating a student with dyspraxia (Study 1-4) or a student with autism spectrum disorder (Study 5).



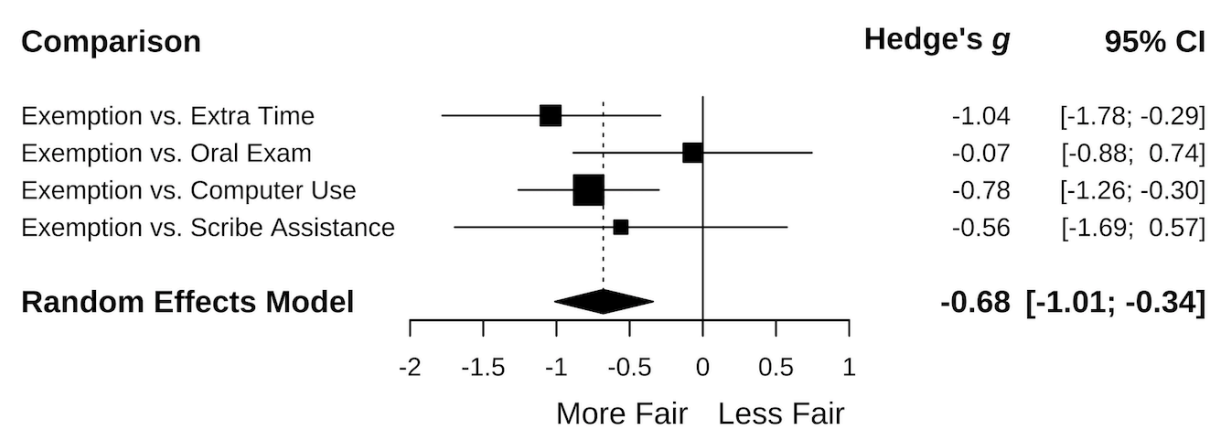
## Results

To examine differences in perceived fairness between these five accommodations, we conducted internal meta-analyses, using “exemption through the reduction of the quantity of work” as the reference category because this one is probably the one that challenges the most the effort-to-outcome ratio criterion used to perceive fairness. The main objective of the internal meta-analysis was to synthesize fairness scores across the five studies while controlling for study-level variation. A first analysis revealed a significant difference in perceived fairness between exemptions and the other accommodations taken together,  $g = -0.68$ ,  $Z = -3.99$ ,  $p < .001$ . Although this effect was not statistically heterogeneous,  $Q = 3.28$ ,  $p = .35$ , the forest plot (see Figure 1) suggests variability within some pairwise comparisons between accommodations.

To explore this heterogeneity, we reanalyzed the data using additional pairwise contrasts. Each effect size was computed using Cohen's  $d$  for one sample  $t$ -tests with a Hedge's  $g$  correction (Borenstein et al., 2010). Four additional analyses were conducted to compare “exemption” with each of the other accommodations across the five studies. Results from these analyses show that participants rated exemptions ( $M = 3.35$ ) and replacing the written exam with an oral one ( $M = 3.43$ ,  $g = -0.07$ ,  $Z = -0.38$ ,  $p = .70$ ) as equally fair. However, exemptions were considered significantly less fair than scribe assistance ( $M = 3.95$ ,  $g = -0.56$ ,  $Z = -3.06$ ,  $p = .002$ ), the use of a computer ( $M = 4.16$ ,  $g = -0.78$ ,  $Z = -12.97$ ,  $p < .001$ ), and extra time ( $M = 4.38$ ,  $g = -1.04$ ,  $Z = -7.27$ ,  $p < .001$ ). These scores represent the pooled means from the five studies. Overall, these results show systematic differences in fairness perceptions between certain types of exam accommodations. However, it should be noted that these comparisons were not identical across studies, as fairness perceptions varied depending on the participant population and the type of special need being evaluated. However, discussing these variations is beyond the scope of this article (results are nonetheless available in the online repository).

**Figure 1**

*Forest Plot Comparing Exemptions with Other Exam Accommodations*



*Note.* The forest plot illustrates the comparisons between the exemption accommodation and each of the other exam accommodations, based on the internal meta-analysis. Negative  $g$ -values indicate that the respective accommodation was perceived as fairer than exemptions. Error bars represent 95% confidence intervals (CI). The Random Effects Model summarizes the overall effect size across comparisons, accounting for variability between studies.

## Discussion

This first study sought to identify differences in perceived fairness between various types of exam accommodations. Analyses based on secondary data confirmed that some accommodations were perceived differently, with exemptions and oral exams (instead of a written one) perceived as less fair compared to other accommodations.

A notable strength of this study lies in its large and diverse sample, which included members of the public, university students, and both pre-service and in-service teachers. Additionally, certain effect sizes were substantial, indicating large differences in fairness perceptions across accommodations. However, this diversity also presents a limitation: a significant portion of the sample—namely, individuals from the general population and pre-service teachers—do not play any direct role in the implementation or decision-making processes related to exam accommodations for students with SEN. Furthermore, while

fairness is a key factor in educational assessment, Lang et al. (2005) showed that teachers distinguish between fairness and comparability, that is, the extent to which they perceive the achievement scores of students receiving accommodations as equivalent to those of their peers without accommodations (for a similar discussion, see Sireci & O’Riordan, 2020).

As a result, the goal of the second study will be threefold. First, we aim to replicate the present findings on fairness with a more targeted sample of in-service professionals—specifically, teachers and school administrators who are directly involved in the institutional processes that support accommodations for students with SEN. Second, we seek to expand these results by also assessing perceptions of comparability and identifying how fairness perceptions differ from comparability perceptions, particularly depending on the type of accommodation. More precisely based on the results of Lang et al. (2005), we expect that exam accommodations will be perceived as fairer than as allowing comparisons, reflecting the undue advantage somewhat feared with exam accommodations. Such a discrepancy could vary depending on the extent to which the effort-to-outcome ratio could be questioned by the accommodation type. Third and finally, since we argue that the perceived fairness ambiguity associated with exam accommodations stems from concerns about disrupting the meritocratic selection of students, we will also measure teachers’ beliefs in school meritocracy and examine how these beliefs are associated with notably perceptions of fairness of exam accommodations.

## **Study 2**

### **Method**

#### ***Participants***

In the autumn of 2023, as part of a representative study evaluating inclusive education policy, a sample of 2,084 schools —ranging from primary to high schools —was randomly selected by the *Department for the Evaluation of Foresight and Performance* of the *French Ministry of National Education and Youth*. These schools were invited to participate in this study. To ensure representativeness among French educators, the selection process took into account several parameters: geographical location, school type, public/private status,

student and teacher population sizes, social position index, gender distribution, and teacher seniority. In total, 31,592 potential participants were invited across all selected institutions.

Of these, 694 individuals provided complete and usable responses, representing 2.2% of the invited sample. The final sample included 523 people identifying as women (75.5%), and 170 identifying as men (24.5%). The mean age was 46.55 years ( $SD = 8.30$ ).

Professionally, most participants were teachers ( $n = 384$ , 55.3%) or school principals ( $n = 280$ , 40.3%), many of whom also had teaching responsibilities. A smaller subgroup ( $n = 30$ , 4.3%) included professionals working within the French educational system, such as Principal Education Advisors, Assistants for Students with Disabilities, and Psychologists. On average, participants had 18.99 years of professional experience in the national education system ( $SD = 9.46$ ), and the majority worked in primary education ( $n = 400$ , 58.9%). Most participants were employed in public schools ( $n = 617$ , 89.4%) and did not work in Priority Education Networks (that is areas where schools receive additional resources to reduce inequalities,  $n = 532$ , 81.5%), meaning their responses largely reflect perspectives from general education settings.

## **Material**

**Perceived Fairness and Comparability.** Participants completed two questionnaires. The first measured their perception of six exam accommodations (i.e., the same five as in the first study plus “a separate room”) for students with disabilities. As in Study 1, they rated how fair they perceived each accommodation to be on a 5-point scale (1 = “Very unfair” to 5 = “completely fair”). In the second questionnaire, participants rated how much they believed each accommodation allowed for valid comparisons between students’ performance on a 5-point scale ranging from 1 (“not at all comparable”) to 5 (“completely comparable”). For example, they were asked: “To what extent do you think that your colleagues find that the performance of a student with SEN is comparable to that of all students when he or she has benefited from a separate room to complete the exam?”) To reduce social desirability bias, the question was phrased in terms of participants’ perceptions of their colleagues’ views rather than their own (Guimelli & Deschamps, 2000).

**Beliefs in School Meritocracy.** To measure teachers’ beliefs in school meritocracy, we used the 8-item scale developed by Wierderkehr et al. (2015). Participants indicated their

level of agreement with each item (e.g., “At school, when there is a will, there is a way”) on a 5-point scale from 1 (“Totally disagree”) to 5 (“Totally agree”) ( $\alpha = .81$ ,  $M = 2.69$ ,  $SD = 0.66$ ).

### ***Procedure***

Principals from the selected schools received an initial e-mail explaining the study’s context, objectives, and content. They were asked to share the survey link with all teachers in their school and, where applicable, with the principal education advisor. Principals were also invited to participate in the study themselves. Two additional emails were sent to encourage participation. Data collection was closed after a predetermined one-month period.

The study was conducted online. Before beginning, participants were informed of their right to withdraw at any time, the anonymity of their responses, and the confidentiality of the collected data. Informed consent was obtained before participation. An email contact was provided for questions or additional information. The questionnaires were presented sequentially; however, not all data collected are reported in the present article.

### **Results**

#### ***Perceived Fairness and Comparability***

A repeated-measure analysis of variance (ANOVA) was conducted with dimension as the first within-subject factor (two levels: fairness and comparability) and accommodation type as the second within-subject factor (six levels: extra-time, computer, scribe, exemption, separate room, and oral exam).

Results confirmed that participants rated accommodations as significantly fairer ( $M = 4.06$ ,  $SE = .03$ ) than as allowing comparisons between students ( $M = 3.66$ ,  $SE = .03$ ;  $F(1,693) = 285.21$ ,  $p < .001$ ,  $\eta_p^2 = .29$ ). However, as illustrated in Figure 2, this effect varied depending on the type of accommodation,  $F(5,3465) = 77.41$ ,  $p < .001$ ,  $\eta_p^2 = .10$ .

Post-hoc Bonferroni-corrected t-tests revealed that not all accommodations were perceived as equally fair. More specifically, extra time ( $M = 4.32$ ,  $SE = .03$ ) and computer use ( $M = 4.27$ ,  $SE = .03$ ) were rated as the fairest accommodations and did not differ significantly

from each other ( $p = 1$ ). However, both were perceived as significantly fairer than the scribe ( $M = 4.05$ ,  $SE = .04$ ), exemptions ( $M = 3.95$ ;  $SE = .04$ ), separate room ( $M = 3.94$ ;  $SE = .04$ ), and oral exam ( $M = 3.81$ ,  $SE = .04$ ), with all  $ps < .001$ . The oral exam was rated as the least fair accommodation (all  $ps < .05$ ), while scribe, separate room, and exemption were judged as equally fair (all  $ps > .07$ ).

A different pattern emerged regarding comparability perceptions. Extra time ( $M = 4.01$ ,  $SE = .03$ ) and computer use ( $M = 3.98$ ,  $SE = .03$ ) were again rated similarly ( $p = 1$ ) and were perceived as the accommodations most likely to allow valid comparisons between students. Separate room followed ( $M = 3.90$ ;  $SE = .04$ ), significantly lower than extra time ( $p = .023$ ) but not different from computer use ( $p = .62$ ). The accommodations perceived as the least conducive to valid comparisons were, in descending order, scribe assistance ( $M = 3.56$ ,  $SE = .04$ ), oral exams ( $M = 3.36$ ,  $SE = .04$ ), and exemptions ( $M = 3.16$ ,  $SE = .04$ ), with all  $ps < .001$ .

Interestingly, except for the separate room accommodation, all other accommodations were perceived as significantly fairer than they were perceived as allowing valid comparisons between students' performance, with all  $ps < .001$ . The largest discrepancy between fairness and comparison was observed for exemptions ( $\Delta = .79$ ,  $p < .001$ ).

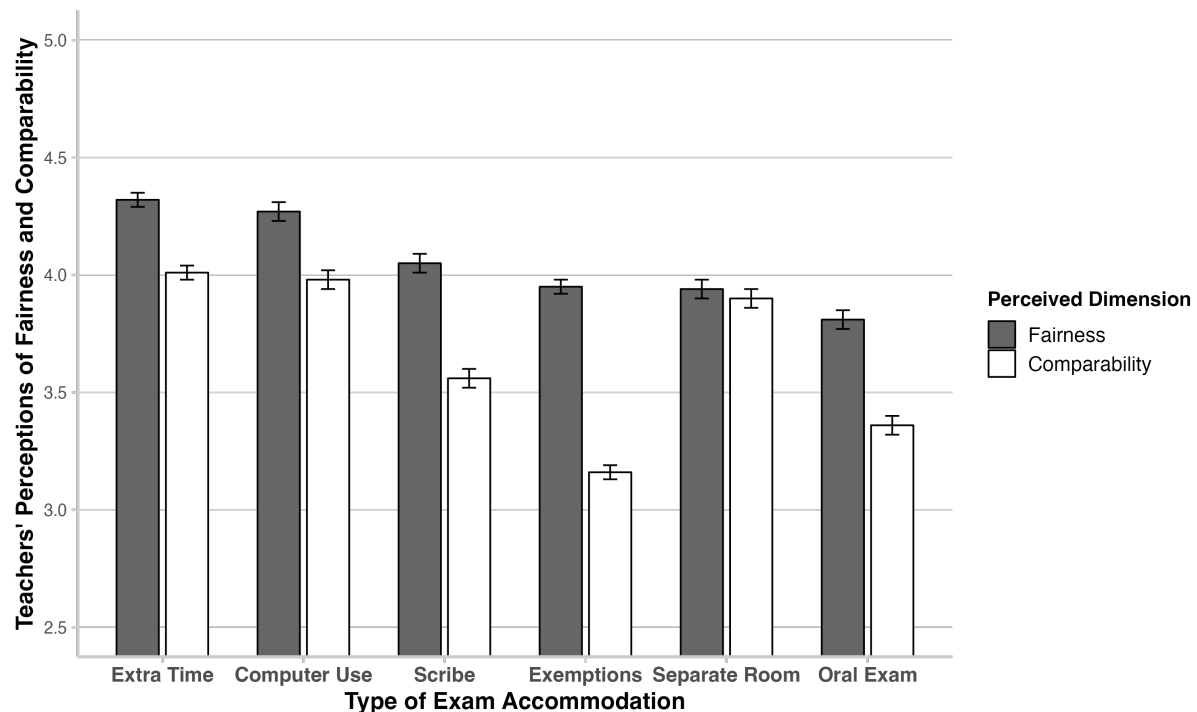
### ***Link Between Beliefs in School Meritocracy and Perceived Fairness***

To examine how teachers' beliefs in school meritocracy were associated with perceived fairness, a correlational analysis was conducted. A composite score was computed for fairness based on the six answers provided ( $\alpha = .87$ ,  $M = 4.06$ ,  $SD = 0.71$ ). Results indicated that teachers who more strongly endorsed meritocratic beliefs perceived exam accommodations as less fair ( $r = -.31$ , 95% CI  $[-.38, -.24]$ ,  $p < .001$ ).

It should be noted that a correlational analysis was also conducted with a composite score for perceived comparability ( $\alpha = .86$ ,  $M = 3.66$ ,  $SD = 0.79$ ) indicating that beliefs in school meritocracy also negatively correlates with comparability perceptions ( $r = -.23$ , 95% CI  $[-.29, -.15]$ ,  $p < .001$ ) and that perceived fairness and comparability strongly correlates ( $r = .67$ , 95% CI  $[.62, .71]$ ,  $p < .001$ ).

**Figure 2**

*Perceived Fairness and Comparability Among Distinct Exam Accommodations*



*Note.* Teachers' perceptions of fairness (gray) and comparability (white) for each exam accommodation. Error bars represent  $\pm 1$  standard error. Post-hoc Bonferroni comparisons revealed significant differences between accommodations (see Results for exact statistics). Higher scores indicate greater perceived fairness or comparability.

## Discussion

This second study aimed to replicate the previous findings on fairness while extending them by examining the perceived comparability of exam accommodations. Regarding fairness first, the results are consistent with those of Study 1, showing that teachers do not perceive all accommodations as equally fair. However, some differences emerged. For example, exemptions were not perceived as the least fair accommodation, while oral exams (instead of a written one) were still rated as the least fair. This variation may stem from the broader framing of disabilities in this study, compared to the more specific focus in Study 1. It is possible that fairness judgements are influenced by how the needs of students are perceived, an idea that will be explored further in the general discussion.

Regarding comparability then, the results provide a clearer picture. Except for the separate room accommodation, all others were consistently rated as fairer than they were perceived to allow valid comparisons between students. The largest discrepancy was observed for exemptions, which may help explain why this particular accommodation is often perceived as raising equity concerns in student performance evaluations (Stanczak, Aelenei et al., 2024).

Finally, as expected, the correlational analyses confirm that teachers' perception of fairness is related to their beliefs in school meritocracy. This suggests that certain values promoted within educational systems —such as merit— may sometimes conflict with others (i.e., the inclusive education paradigm).

Together, these findings highlight the inherent ambiguity of exam accommodations and the role that meritocratic beliefs could play in shaping the way they are perceived by teachers. However, another important factor may lie in how teachers conceptualize assessment itself. As previously discussed, assessment serves multiple functions. On one hand, it plays a formative role by providing feedback that helps both students and teachers adjust their learning strategies, in line with the educational mission of schools. On the other hand, assessment also serves a selective role – identifying which students are most deserving of academic success– aligned with the selection function of educational systems. To fulfill this selective function, assessment is often conceived in a normative way, meaning that it is used as a tool to compare students' performance and rank them accordingly (Autin et al., 2015).

Therefore, based on the literature (Rasooli et al., 2019; Sireci & O'Riordan, 2020) and the previous results, two hypotheses can be proposed and tested.

- (1) Teachers who adopt a normative view of assessment (focused on ranking and selection) will be less likely to perceive exam accommodations as maintaining comparability between students, and therefore, will judge them as less fair.
- (2) Teachers who adopt a formative view of assessment (focused on learning and individual progress) will be more likely to perceive accommodations as comparable and, thus, as fair.



Study 3 was designed to test these hypotheses while also enhancing the external validity of this research by using examples of exam accommodations taken directly from the official forms used by local education authorities in the region where the study was conducted.

### **Study 3**

#### **Method**

##### ***Participants***

A total of 119 middle and high school teachers participated in this study. This specific population was selected because, compared to elementary school teachers, they are more directly involved in the implementation of exam accommodations for standard national exams in France (i.e., the middle school completion exam and the high-school exit exam). Their closer involvement makes them particularly relevant for assessing perceptions of fairness and comparability regarding exam accommodations. Among the participants, 74 identified as women, 28 as men, and 17 did not report their gender. The largest proportion of participants were between 40 and 50 years old (33.3%) and had between 20 and 30 years of teaching experience (28.9%). The majority worked in schools located outside city centers – mostly in suburban areas (68,4%)– and not within Priority Education Networks (92.2%).

##### ***Material***

**Perceived Fairness and Comparability.** To ensure ecological validity, participants rated the fairness and comparability of 24 exam accommodations officially listed in the local education authority's guidelines for the region where the study was conducted. These accommodations were categorized into four types: six time and space accommodations (e.g., extra time, breaks, separate room), five technical accommodations (e.g., use of a computer or tablet, oral instructions instead of written ones, Braille), four human accommodations (e.g., assistance from a reader for instructions, a scribe for writing) and nine exemptions (e.g., prioritization for oral exams, exemption from an entire exam or specific components). Participants rated each accommodation on a 10-point scale for perceived fairness and comparability. This change within the scales was made to increase

the sensitivity of our measures. Table 1 presents descriptive statistics and reliability analyses for each accommodation type.

**Conceptions of Assessment.** Teachers' conceptions of assessment were measured using a 10-item scale developed by Issaieva and Crahay (2010). This scale included five items measuring the formative conception of assessment (i.e., as a tool to support learning, e.g., "Assessment should help identifying what needs to be worked on with students") and five items measuring the normative conception of assessment (i.e., as a ranking or selection tool, e.g., "Assessments should help identify good and bad students"). Participants responded using a 5-point scale ranging from 1 "Totally disagree" to 5 "Totally agree". Reliability analyses and descriptive statistics for these variables are provided in Table 1.

### ***Procedure***

As in the previous study, data were collected via an online questionnaire distributed through social and professional networks during a one-month period. Participants were informed that the study was anonymous, that no personal data would be collected, and that they could withdraw at any time without providing justification or facing any consequences. Consent to participate was indicated by clicking the start button. Participants then completed the measures assessing perceived fairness, perceived comparability, conceptions of assessment, and demographic information. At the end of the questionnaire, they were provided with additional information about the study's objectives, as well as resources on assessment and exam accommodations.

**Table 1***Descriptive statistics*

Variables	$\alpha$	<i>M</i>	<i>SD</i>
Time and space accommodations			
<i>Fairness</i>	.81	8.53	1.41
<i>Comparability</i>	.90	8.15	1.88
Technical accommodations			
<i>Fairness</i>	.85	8.93	1.34
<i>Comparability</i>	.90	7.99	1.94
Human accommodations			
<i>Fairness</i>	.90	8.11	1.89
<i>Comparability</i>	.95	6.78	2.51
Exemption accommodations			
<i>Fairness</i>	.92	6.93	1.97
<i>Comparability</i>	.95	5.78	2.34
Formative conception of assessment	.79	4.16	0.63
Normative conception of assessment	.81	2.83	0.94

*Note.* Coefficient alpha ( $\alpha$ ) as a measure of internal consistency. *M* = Mean; *SD* = Standard Deviation.

**Results*****Perceived Fairness and Comparability***

As in Study 2, a repeated-measures analysis of variance (ANOVA) was conducted, including two within-subject factors: (1) dimension (fairness vs. comparability) and (2) type of accommodation (time and space, technical, human, or exemptions). Consistent with previous findings, participants perceived exam accommodations as significantly fairer ( $M = 8.12$ ,  $SE = .14$ ) than as allowing valid comparisons between students' performance ( $M = 7.17$ ,  $SE = .17$ ),  $F(1,118) = 43.16$ ,  $p < .001$ ,  $\eta_p^2 = .27$ . However, this difference varied depending on the type of exam accommodations,  $F(3,354) = 16.08$ ,  $p < .001$ ,  $\eta_p^2 = .12$ .

Post-hoc *t*-tests with Bonferroni corrections revealed that technical accommodations ( $M = 8.93$ ,  $SE = .12$ ) were perceived as significantly fairer than time and space accommodations ( $M = 8.53$ ,  $SE = .13$ ), which in turn were rated as fairer than human accommodations ( $M = 8.11$ ,  $SE = .17$ ), followed by exemptions ( $M = 6.93$ ;  $SE = .18$ ), with all  $ps < .001$ . Regarding comparability, time and space accommodations ( $M = 8.15$ ,  $SE = .17$ ) and technical accommodations ( $M = 7.99$ ,  $SE = .18$ ) were perceived as equally facilitating valid comparisons between students' performance ( $p = 1$ ), followed by human accommodations ( $M = 6.78$ ,  $SE = .23$ ) and exemptions ( $M = 5.78$ ,  $SE = .22$ ; all  $ps < .001$ ).

Except for time and space accommodations ( $p = .45$ ), all other accommodations were perceived as significantly fairer than they were perceived as allowing comparisons (all  $ps < .001$ ). The largest discrepancy between fairness and comparability was observed for human accommodations ( $\Delta = 1.32$ ,  $p < .001$ ).

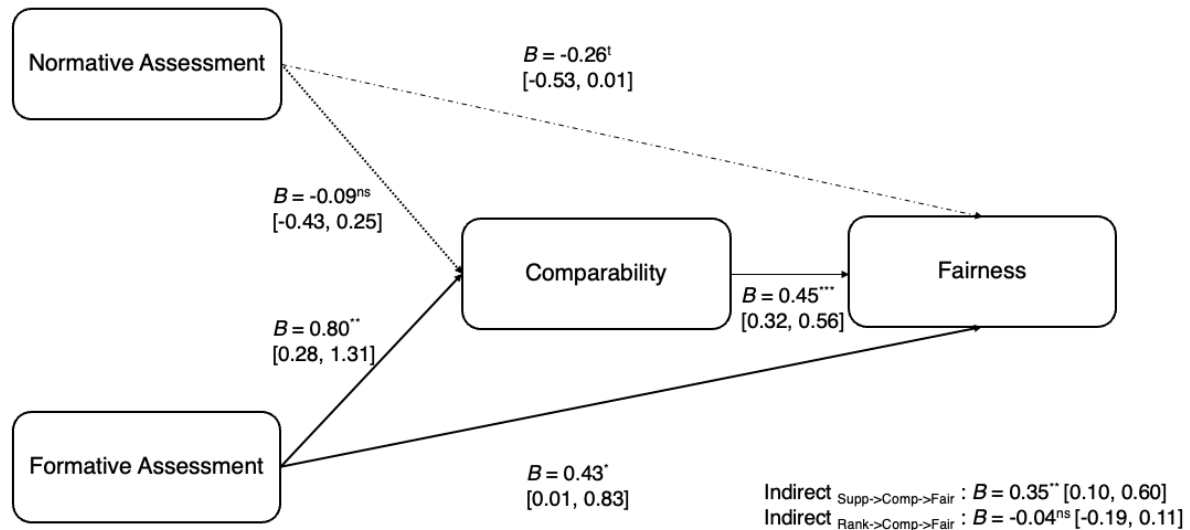
### ***Mediation Analysis***

To examine the relationships between teachers' conceptions of assessment, perceived comparability, and perceived fairness, a mediation analysis was conducted. As in Study 2, two composite scores were calculated: one for fairness ( $\alpha = .95$ ,  $M = 7.94$ ,  $SD = 1.51$ ) and one for comparability ( $\alpha = .96$ ,  $M = 7.00$ ,  $SD = 1.87$ ).

As illustrated in Figure 3, the analysis revealed a significant indirect effect of teachers' formative conception of assessment (i.e., viewing assessment as a learning tool) on perceived fairness, mediated by perceived comparability,  $B = 0.35$ ,  $z = 2.80$ ,  $p = .005$ , 95% CI [0.10, 0.60]. Teachers who viewed assessment as a formative tool were more likely to perceive exam accommodations as allowing valid comparisons between students, which in turn was associated with higher fairness perceptions. By contrast, teachers' normative conception of assessment (i.e., viewing assessment as a ranking tool) did not predict perceived fairness, either directly ( $p = .06$ ) nor indirectly via comparability ( $p = .60$ ).

**Figure 3**

*Mediational Paths Linking Teachers' Conceptions of Assessment, Perceived Comparability, and Perceived Fairness*



*Note.* Standardized regression coefficients ( $B$ ) are reported. Solid lines represent significant paths, while dashed lines indicate non-significant paths. The Indirect  $\text{Supp} \rightarrow \text{Comp} \rightarrow \text{Fair}$  path represents the indirect effect of formative conceptions of assessment on fairness through comparability. The Indirect  $\text{Rank} \rightarrow \text{Comp} \rightarrow \text{Fair}$  path represents the indirect non-significant effect of normative conceptions of assessment on fairness via comparability.  $^{ns} p > .10$ ,  $^t p < .10$ ,  $^* p < .05$ ,  $^{**} p < .01$ ,  $^{***} p < .001$

## Discussion

This final study aimed to replicate previous findings using official accommodations presented with their exact designations and implications, while also testing a theoretical model linking teachers' conceptions of assessment, perceived comparability, and perceived fairness. The results confirmed that exemptions were perceived as both the least fair and the least conducive to valid comparisons of students' performance compared to time and space, technical, and human accommodations.

Additionally, this study revealed two particularly noteworthy findings. First, although perceived comparability and teachers' normative conceptions of assessment are

conceptually related, the analysis did not identify a significant association between these constructs. Consequently, there was no indirect effect of normative conceptions of assessment on perceived fairness through comparability. In contrast, formative conceptions of assessment were indirectly associated with the perceived fairness of exam accommodations. Specifically, the more teachers viewed assessment as a tool to support learning, the more likely they were to perceive exam accommodations as maintaining comparability between students, and in turn, as fair.

### **General Discussion**

To fully implement the inclusive education paradigm, educational systems must ensure that every learner has equal opportunities to learn and demonstrate their abilities. To achieve this, some students require exam accommodations. While such accommodations are generally accepted, students and teachers continue to face challenges in their implementation and use (De Beco, 2018). The present paper, through three studies, aims to better understand these challenges, by focusing specifically on the perceived fairness of different exam accommodations, a key issue in the classroom assessment literature (Rasooli et al., 2019).

Findings from the three studies highlight several key insights. First, not all exam accommodations are perceived as equally fair. Across all three studies, exemptions, oral exams as a replacement for written ones, and human assistance were consistently rated as less fair compared to time and space accommodations or technical accommodations. Second, exam accommodations were generally perceived as fairer than they were perceived as allowing valid comparisons between students' performance. This gap in comparability was particularly pronounced for oral exams, exemptions, and human assistance. One possible explanation is, that, unlike time and space accommodations or technical accommodations, exemptions and human assistance may lead teachers to believe that the construct measured by the test is no longer the same. This distinction is referred to in the literature as a modification rather than an accommodation and may therefore be perceived as less acceptable by teachers and peers (Kettler, 2012). Additionally, some accommodations may create the impression that students are making less effort. For instance, teachers might assume that a student using a scribe receives assistance beyond simply writing and,

therefore, does not engage in the same level of cognitive effort as their peers. Similarly, when students are exempted from completing certain exercises or questions, teachers might suspect that their overall effort is reduced, with little consideration for the additional cognitive or physical demands these students face in completing the tasks they are required to do. Finally, and alternatively, we cannot totally exclude that the relative high score in fairness obtained throughout the studies (notably in comparison with comparability ones) reflect a social desirability bias associated with persons with disability. This group suffers from a paternalism (Nario-Redmond et al., 2019) that could foster such bias to not appear as discriminant (Rohmer & Louvet, 2018).

If these interpretations hold, they are consistent with the relationship observed between fairness and comparability perceptions and teachers' beliefs in school meritocracy. Our findings show that the more strongly teachers endorse school meritocracy, the less they perceive exam accommodations as fair and as allowing valid comparison between students. This indirectly supports the argument made by Stanczak, Jury et al. (2024) suggesting that meritocratic beliefs may be fundamentally incompatible with the principles of inclusive education. In other words, for certain teachers, exam accommodations may challenge the belief that standardized assessments should fairly reward effort and ability. As a result, they may no longer see these assessments as truly meritocratic and struggle to value students' performance in such contexts (Egan & Giuliano, 2009, Stanczak, Aelenei et al., 2024). It is likely teachers who hold such beliefs view standardized tests as objective and valid measures of merit, a claim which is increasingly challenged in academic circles (e.g., Au, 2015; Boykin, 2022)

Another key finding concerned the relationship between fairness and comparability perceptions and teachers' conceptions of assessment. Our results revealed an indirect effect, whereby teachers who viewed assessment as a formative tool (i.e., to support learning) were more likely to perceive exam accommodations as allowing valid comparisons between students' performance, and consequently, as fair. This finding offers a reason for optimism, as it suggests that encouraging a more formative assessment mindset among teachers could increase their acceptance of accommodations as both fair and producing as both fair and producing valid results that they perceive as comparable to those of students

who did not receive accommodations. Given that assessment knowledge can be shaped through training (Tigelaar & Sins, 2021), targeted pre-service and in-service teacher education could help reduce resistance to the use of exam accommodations.

One major concern emerging from the present findings is the issue of comparability, which appears to play a central role in how teachers evaluate the fairness of exam accommodations. While it is true that changing the conditions of an assessment can reduce the comparability between standardized and accommodated exams, it is also important to recognize that comparability is not always critical in classroom assessments (Sireci & O’Riordan, 2020). If the primary goal of an exam is to determine whether students have mastered the taught content, ensuring strict comparability between standard and accommodated scores should not be a main concern. Moreover, in the rare cases where ranking students is essential (such as in competitive entrance exams or formal ranking systems), research indicates that accommodations rarely alter the construct being measured (Vidal Rodeiro & Macinska, 2022). Put differently, even if accommodations introduced minor comparability issues, the limited number of situations requiring strict student comparisons, coupled with the low likelihood that accommodations fundamentally alter what is being assessed, suggests that comparability concerns may be overemphasized in teachers’ fairness judgements. As proposed in social psychology literature, concerns about comparability may not stem from genuine measurement issues, but rather from stereotypical expectations about which students “deserve” success in the educational system. Some teachers may unconsciously view students who receive accommodations —particularly those who perform well—as benefiting from an unfair advantage. These perceptions may be driven by implicit biases regarding students with SEN competence (Krischler et al., 2018; Schell et al., 2024) which can distort their fairness judgments.

It is interesting to compare teachers’ perceptions of fairness and comparability to those proposed in the psychometric community. For example, using expert review and a review of the literature Abedi and Ewers (2013) classified 20 different accommodations according to their fairness for SEN and the degree to which it would change the construct measured. Although exemptions were not considered in their study, time and space accommodations, technical accommodations, and human accommodations were generally



considered as both fair and comparable. Thus, the psychometric and educational research communities may have a more liberal view of the fairness and comparability of these test accommodations than educators.

To address concerns about comparability – whether real or perceived – some researchers have advocated for rethinking assessment design altogether. For example, Sireci and O’Riordan (2020) propose a Universal Test Design in which assessments are developed from the outset to accommodate the needs of diverse range of students. The core idea is that if barriers are minimized prior to test administration, the need for individual accommodations would be reduced. As a result, all students could take the same exam, ensuring better comparability of performance when necessary (a request also expressed by students who receive exam accommodations, Lewandowski et al., 2014). Sireci (2020) extended this idea to promoting flexibility in standardized conditions for all test takers, thus moving the issue from one of assessing SEN, to providing measurement conditions and experiences that lead to the most valid assessment for each individual student (a concept framed as UNDERSTANDARDization).

Similarly, to promote inclusive assessment and address comparability concerns, Wakeman et al. (2022) emphasize the importance for teachers to clearly define what their grades are intended to represent – that is, the specific construct being measured. In many cases, grades assess multiple aspects simultaneously, including product (final achievement), process (effort and learning strategies), and progress (improvement over time). When grading lacks transparency, some accommodations may be perceived as altering what is being measured, even if they do not. Thus, a more precise and structured grading approach would help determine whether an accommodation truly interferes with the assessment of student performance. However, implementing such changes is not straightforward and would require both teacher training and the development of specialized assessment tools.

## **Limitations**

Despite the valuable insights provided by these studies, several limitations should be acknowledged. First, all studies were conducted with French participants, a context where inclusive education has been slow to implement and continues to raise concerns among

teachers (Jury et al., 2023). While this makes the topic of exam accommodations particularly relevant in France, the findings may have limited generalizability to educational systems with more established inclusion policies. Second, the correlational and descriptive nature of the studies restricts our ability to draw causal conclusions – for example, regarding the link between school meritocracy and perceptions of fairness and comparability in Study 2. Future experimental research would be needed to clarify these relationships. Third, sample size discrepancies should be considered. While sample sizes in Study 1 and 2 were adequate, the sample in Study 3 was substantially smaller. Although this does not compromise the comparison of fairness and comparability ratings across accommodations, it warrants caution when interpreting the mediation analysis results. As Schönbrodt and Perugini (2013) suggest, a sample size of approximately 250 participants is generally required for stable correlation estimates. In the same vein, the very low participation rate in study 2 (i.e., 2.2%) – the only study for which this information was available – raises questions. Although existing literature confirms that low participation rates are common in online surveys, this suggests a potential selection bias that could threaten the validity of the present findings (Lindgren et al., 2020). Finally, there are limitations in how disabilities were represented across studies. Study 1 focused specifically on accommodations for students with dyspraxia and autism spectrum disorder, whereas Studies 2 and 3 asked participants to consider students with disabilities more broadly. While this choice allowed for a generalized perspective, it also introduced two potential drawbacks: (1) it did not consider other student populations who might benefit from exam accommodations (e.g., student-athletes), whose accommodations may be perceived differently (Lefler et al., 2025); and (2) it overlooked the fact that exam accommodations are designed to address specific needs rather than disabilities *per se*. To address these concerns, future research should adopt an experimental design in which participants from multiple countries assess exam accommodations for specific student profiles. This would help capture variations in perception of exam accommodations and strengthen the findings.

## **Conclusion**

While exam accommodations are intended to help students with SEN demonstrate their abilities more effectively and promote equity in schools, the present findings suggest

that some accommodations may have unintended consequences for how students who receive them are perceived. Indeed, although accommodations aim to provide necessary support rather than confer an unfair advantage, our results indicate that exemptions and human assistance may not always been seen as legitimate, which can lead to negative judgements about students who use them – particularly when they succeed (Stanczak, Aelenei et al., 2024; Stanczak, Jury et al., 2024). These findings suggest that addressing misconceptions about fairness and comparability is essential to fostering truly inclusive assessment practices and ensuring that accommodations serve their intended purpose – removing barriers rather than reinforcing bias.

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