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Teachers' Attitudes toward the Inclusion of Students with Autism Spectrum Disorder:  
Impact of Students' Difficulties

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[https://osf.io/a4hvw/?view\\_only=07030f74b49f48d09139dae3f253c2b0](https://osf.io/a4hvw/?view_only=07030f74b49f48d09139dae3f253c2b0)

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### Abstract

**Background:** Students with autism spectrum disorder (ASD) are less included within mainstream educational systems. We argued that teachers' attitudes toward their inclusion represent a key factor to understand this issue. Based on previous research showing that teachers are frequently reluctant to include them in mainstream education, we hypothesized that teachers' attitudes could be predicted by the specific difficulties faced by these students.

**Method:** One thousand and sixty-four teachers were asked to express their attitudes toward the inclusion of students with ASD in an online questionnaire. The co-occurring difficulties that students with ASD could face were experimentally manipulated through brief information depicting five specific set of difficulties.

**Results:** Teachers expressed more positive attitudes toward the inclusion of students with ASD with no difficulties, in comparison with those with behavioral difficulties, behavioral and cognitive difficulties, or those for whom difficulties were not specified – the control condition. Unexpectedly, teachers were not more positive regarding the inclusion of students with ASD with no difficulties in comparison with those with cognitive difficulties.

**Conclusions:** Without specific information, it seems that teachers spontaneously associated ASD with behavioral difficulties and that teachers' attitudes were the most negative for students facing such difficulties (regardless of the presence or absence of cognitive difficulties). Nonetheless, by also suggesting that attitudes toward the inclusion of these students can be positive, these results seem to corroborate that the use of broader categories like "students with ASD" could be discussed.

*Keywords:* Inclusive education; Attitudes; Autism Spectrum Disorder; Stereotype

### Teachers' Attitudes toward the Inclusion of Students with Autism Spectrum Disorder:

#### Impact of Students' Difficulties

The United Nations regularly remind that students with special educational needs should fully participate within mainstream educational systems (UN, 2019). Regarding the specific situation of students with autism spectrum disorder (ASD), Rattaz and colleagues (2020) recently showed that, in France, 88% of these students attend schools but that those with co-occurring intellectual disability and challenging behaviors are less likely to benefit from mainstream system in comparison with others (for a similar trend in the USA, see McDonald et al., 2019). Among the many factors that could explain this discrepancy, the students' clinical profiles or teachers' lack of training are often mentioned (Rattaz et al., 2020). Without neglecting these, we argue that this issue could not be fully understood without also considering subjective factors like teachers' attitudes (Garrad et al., 2019). Indeed, the latter appears to be particularly important within the implementation of inclusive practices (see Sharma & Sokal, 2016). Nonetheless, until now, these ones were mostly studied at the category level (i.e., attitudes toward the inclusion of students with ASD), ignoring how the co-occurring difficulties that students with ASD could face precisely influence these attitudes. Filling this gap is the main goal of the present paper.

#### **Teachers' Attitudes Toward Inclusion**

Attitudes constitute an extensive area of research in social psychology due to the fertile ground for discriminatory behaviors which they represent (Dovidio et al., 2002). Regarding the present topic of interest, we defined them as teachers' subjective feelings and beliefs toward the specific societal issue of inclusive education (Lautenbach & Heyder, 2019).

Among the multiple factors known to modulate these attitudes, students' disability is one of the most robust. For example, Avramidis, Bayliss, and Burden (2000) early showed that students' teachers expressed more concerns and stress regarding the inclusion of students with emotional and behavioral difficulties in comparison with those with severe learning difficulties. In the same vein, Tant and Watelain (2016, p. 7) concluded from their review that physical education teachers have "a negative attitude towards students with emotional disorders and a rather favourable attitude toward students with learning disabilities" (for a similar conclusion with primary schoolteachers, see de Boer et al., 2011). Recently, Jury et al. (2021) replicated these findings within the French context and notably showed that, in comparison with those regarding students with motor or cognitive disability,

teachers' attitudes toward the inclusion of students with ASD were the most negative. However, and as detailed below, the spectrum of autistic disorders is broad, and it is needed to investigate how teachers' attitudes could vary depending on the specific difficulties students with ASD could face.

As defined by the DSM-V (American Psychiatric Association, 2013), to meet the criteria for ASD, a child must have persistent deficits in several area of social communication and interaction (i.e., social-emotional reciprocity, nonverbal communicative behaviors, developing, maintaining, and understand relationships) plus at least two of four types of restricted, repetitive behaviors (e.g., stereotyped or repetitive motor movements, highly restricted, fixated interests that are abnormal in intensity or focus). As a result, ASD has many forms resulting in profiles of individuals with heterogeneous difficulties. In addition to the previous ones, individuals can also face cognitive difficulties with intellectual or attentional deficits, and/or behavioral ones with potential aggressive or repetitive movements (for a review, see Mannion & Leader, 2013). Previous research has shown a discrepancy between this spectrum of difficulties and lay beliefs, primarily focused on behavioral difficulties, with a subjective representation of poor social skills and disruptive behaviors (Wood & Freeth, 2016, see also Aube et al., 2020). Linking these results with those showing that teachers' attitudes toward the inclusion of students with challenging behaviors and learning difficulties are negative (Krischler & Pit-ten Cate, 2019) might help to understand why teachers hold negative attitudes toward the inclusion of students with ASD. Indeed, when asked to express their attitudes, they probably automatically activate stereotypical beliefs of difficulties related to ASD, resulting in the expression of negative attitudes.

### **Present Research**

Based on the above-mentioned results, the purpose of this paper is twofold. First, we seek to test the extent to which attitudes toward the inclusion of students with ASD for whom no difficulty is specified are closed to those regarding the inclusion of students with ASD whose behavioral difficulties are highlighted. Second, we seek to disentangle the specific effects of difficulties on teachers' attitudes. Based notably on results showing that teachers' attitudes toward the inclusion of students with disability seems to be linked to the extent to which these students are challenging the teaching practices and the classroom context (with less reluctance for cognitive challenge in comparison with a behavioral one, see Jury et al., 2021; Avramidis, et al., 2000; Tant & Watelain, 2016), we hypothesize that the less challenging for the teaching context the difficulties faced by students with ASD are, the

more positive teachers' attitudes would be. In other words, we expected that teachers' attitudes toward the inclusion of students with ASD with no difficulties (cognitive or behavioral— representing a low challenge) should be more positive than those regarding students with ASD with cognitive difficulties (but not behavioral ones – low medium challenge), which should, in turn, be more positive than those regarding students with ASD with behavioral difficulties (but not cognitive ones – high medium challenge) which should, finally, be more positive than those regarding students with ASD with cognitive and behavioral difficulties (high challenge).

### Method

#### Participants

As indicated in the preregistered form (AsPredicted#30163<sup>1</sup>), an *a priori* power analysis performed with G\*power 3.1 (Faul et al., 2007) revealed that 395 participants would be needed to detect a small-sized effect ( $f^2 = .02$ ) with a targeted power of .80. However, it should be noted that the data collected here are a part of a multi-study project (Khamzina et al., 2021b, study 3; Perrin et al., 2021, study 2) and was therefore sent out to a large number of teachers in order to maximize the statistical power. Therefore, contrarily to our preregistered form<sup>2</sup>, we have decided to conduct our analysis on the whole sample including 1,064 French middle- and high-school teachers (739 females and 305 males, 20 missing) aged from 22 to 64 ( $M = 43.51$  years,  $SD = 9.65$ ).

#### Material

Participants completed a questionnaire build on Mahat' work (2008). In her original scale, the author planned “to develop a multidimensional instrument that could effectively measure affective, cognitive and behavioral aspects of attitudes, within the realm of inclusive education that includes physical, social and curricular inclusion” (p. 83). Here, three items were extracted from this scale and slightly adapted to specifically assess teachers' attitudes toward the inclusion of students with ASD through a cognitive (i.e., “I believe that these students should be taught in special education schools to avoid rejection in mainstream education”— reverse coded), an affective (i.e., “I am uncomfortable including these students in a regular classroom with other students without special educational needs) and a behavioral component (i.e., “I would be ready to adapt the curriculum to meet the individual

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<sup>1</sup> The pre-registered form, material, and data regarding this project can be accessed at: [https://osf.io/a4hvw/?view\\_only=07030f74b49f48d09139dae3f253c2b0](https://osf.io/a4hvw/?view_only=07030f74b49f48d09139dae3f253c2b0)

<sup>2</sup> Contrarily to what we pre-registered, we did not enroll as many participants as thought for the whole project (Targeted  $N = 4,000$ ). Therefore, to reach our statistical power objective for our three projects, we did not split the whole sample into three sub-samples for the present study.

needs of these students if they were included in my class"). Participants filled in the questionnaire using a five-point Likert scale, with 1 being "Totally disagree" and 5 being, "Totally agree". Reliability analysis was satisfactory allowing computing a mean score,  $\alpha = .79$ ,  $M = 3.48$ ,  $SD = 0.90$ .

The instructions for this questionnaire differ according to the five experimental conditions. Thus, participants in the control condition ( $n = 241$ ) read: "This section focuses on the inclusion of students with ASD. To what extent do you agree with each sentence?". Participants in the no difficulties condition ( $n = 213$ ) were informed that the section focuses on "the inclusion of students with ASD with neither cognitive nor behavioral difficulties". Those in the cognitive difficulties condition ( $n = 211$ ) were asked to think about "the inclusion of students with ASD with cognitive but not behavioral difficulties". Participants in the behavioral difficulties condition ( $n = 198$ ) had to express their agreement regarding "the inclusion of students with ASD with no cognitive but behavioral difficulties". Finally, participants in the behavioral and cognitive difficulties condition ( $n = 201$ ) have to indicate their attitudes to "the inclusion of students with ASD with both cognitive and behavioral difficulties"<sup>3</sup>.

### Procedure

The link to the online study was sent out through teachers' professional networks, workgroups, and social media in fall 2019. At the beginning of the task, participants were informed about its purpose and procedure. Then they were prompted to give their consent and informed that their participation was voluntary, that they could quit the study without any consequences and that they would not receive any financial compensation for their participation. Once consent was given, participants were randomly assigned to one of the five conditions. Then they were asked to fill in the proposed measure. At the end of the questionnaire, they completed demographic information and received further details regarding the purpose of the research project. This study received an IRB approval (IRB00011540-2019-29).

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<sup>3</sup>The discrepancy within the number of participants is probably due to the fact the randomization process occurred when the first page of the questionnaire (i.e., the consent form) was showed. Since a number of participants did not go beyond this step (without answering), it might explain the final disparity.

## Results

In line with our pre-registration form, an ANOVA has been conducted and indicated a main effect of the condition,  $F(4, 1059) = 8.28, p < .001, \eta_p^2 = .03$ . As illustrated by the Figure 1, and post-hoc t-tests with Bonferroni correction, it appears that participants expressed more positive attitudes in the no difficulties condition, in comparison with the behavioral difficulties ( $p < .001, d = -.43$ ), the behavioral and cognitive difficulties ( $p < .001, d = -.39$ ), and the control ( $p < .001, d = -.41$ ) conditions. If participants in the cognitive difficulties condition were significantly more favorable than those in the behavioral difficulties ( $p = .011, d = -.31$ ), the behavioral and cognitive difficulties ( $p = .046, d = -.27$ ), or the control ( $p = .016, d = .29$ ) ones, they were unexpectedly not different from those in the no difficulties condition ( $p = 1$ ). There are no other significant differences (all  $ps = 1$ )<sup>4</sup>.

## Discussion

Despite regularly international recommendations (UN, 2019), inclusion rate of students with ASD in mainstream educational systems is far from satisfactory (McDonald et al., 2019; Rattaz et al., 2020). Among the associated barriers, teacher's attitudes constitute a component increasingly mentioned in the literature. For example, the less positive teachers are about the inclusion of students with ASD, the more difficult their relationships with these students are (Robertson et al., 2003; see also Sharma & Sokal, 2016). In line with recent research (Jury et al., 2021; Lindblom et al, 2020; Lu et al., 2020), this paper aimed to further explore teachers' attitudes towards the inclusion of students with ASD. We notably argued that these attitudes are based on stereotypical beliefs spontaneously associating ASD with behavioral difficulties that ultimately generate more negative attitudes.

This hypothesis was supported by our results showing that behavioral difficulties seem to be the main factor to consider within teachers' attitudes. Indeed, without specific information, it seems that teachers spontaneously associated ASD with behavioral difficulties and that teachers' attitudes toward inclusion were the most negative for students facing such difficulties (regardless of the presence or absence of cognitive difficulties). Surprisingly, the attitudes toward the inclusion of students with ASD with "only" cognitive difficulties were not less positive than the ones regarding their counterparts with no difficulties (i.e., in terms of cognition or behavior). This lack of difference might be explained by the fact that the instruction does not only highlight "cognitive difficulties" but also the fact that students do

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<sup>4</sup>An exploratory analysis was conducted controlling for the influence of age and gender. The results were unchanged regarding the experimental condition,  $p < .001$ , but women ( $M = 3.55; SE = .03$ ) expressed more favorable attitudes than men ( $M = 3.31; SE = .05, p < .001$ ); age was not related,  $p = .72$ .



not face behavioral difficulties. However, this latter specification may have been crucial since teachers are particularly worried about behaviors management (Postholm, 2013) and have more negative attitudes toward students with challenging behaviors in comparison with those with learning difficulties (Krischler & Pit-ten Cate, 2019). As a result, by removing this main barrier, it might have made the cognitive difficulties less challenging for teachers and lead them to express more positive attitudes. A replication of this study in which participants only see the presence of a difficulty (and not the absence of the other) might help to test this speculative explanation.

Nonetheless, by suggesting that attitudes toward the inclusion of these students can also be positive, these results corroborate, in our minds, that the use of broader categories like “students with ASD” could be further questioned in the educational context. Indeed, it is well-known that prejudice against minority groups partly comes from the fact that members of these groups are perceived as similar to each other (Brauer & Er-rifiy, 2011). In other words, by using the label “student with ASD” without specifying the difficulties faced by the students, the latter are assimilated to the broader homogeneous category and could unfairly suffer from the associated lay beliefs and face negative attitudes regarding their inclusion. By referring through the lens of their special educational needs instead of their disability – within the school context only – it makes the members of this group more heterogeneous and might represent a promising way to reduce prejudices against them and foster positive attitudes toward their inclusion, as initially thought by the Warnock report (for a recent review see Norwich, 2019). If experimental evidences are needed to further support this proposal, some anti-stigma programs currently pursue this goal (Godeau et al., 2010; Ranson & Byrne, 2014).

Despite these results, this work is not without limitations. Firstly, it has been conducted with post-elementary teachers, a level in which students with ASD are less included in comparison with the elementary one (i.e., among the 36,190 students with ASD attending regular classrooms in the mainstream French educational system, 32% of them are registered in middle or high school). Secondly, the paradigm can be considered as imperfect for two reasons. On the one hand, the experimental manipulation is minimalistic and may have distinctly influence teachers according to their experience with students with ASD. Attitudes from teachers who have more familiarity with such students could have been different (even if this proposal is not fully supported by previous results, Jury et al., 2021). On the other hand, it does not imply a comparison with another kind of disability and makes it difficult to conclude on the extent to which attitudes toward students with ASD without

behavioral difficulties are actually positive. A replication implying a comparison with another disability and a control of teachers' previous experiences with students with ASD would probably strengthen the present conclusion. Finally, it should be acknowledged that some of present findings may relate to the difficulty of openly expressing negative attitudes towards students with disabilities (Bastard et al., 2021; see also Lüke & Grosche, 2018), implying that the results need to be read cautiously.

Regardless of these limitations, we believe that these findings help to better understand the difficulties faced by students with ASD within our mainstream educational systems and open research perspectives in order to reduce the prejudice they could face and therefore improve their inclusion.

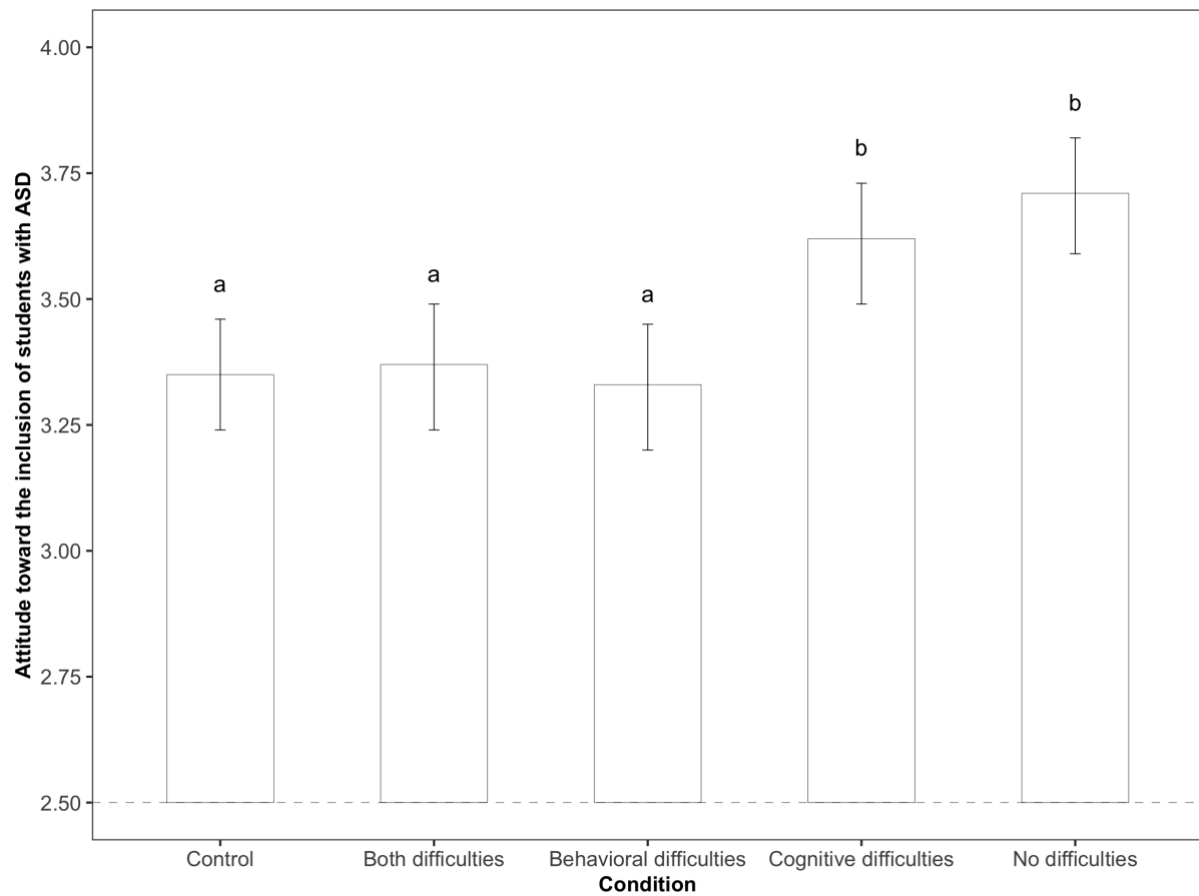
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**Figure 1**

*Teachers' mean attitudes toward the inclusion of students with ASD depending on the kind of difficulties.*



*Note.* Different letters indicate significant differences between groups ( $p < .05$ ). Errors bars represent 95% CIs.