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# Analyze Italian Students' Perception Of Inclusion In Secondary Schools: Validation Of The Perception Of Inclusion Questionnaire (PIQ) In The Italian Context

**Davide Di Palma** [1]

[1] University of Campania "Luigi Vanvitelli"; davide.dipalma@unicampania.it

**Abstract:** Emotional well-being, social inclusion, and academic self-concept are fundamental elements in the academic and socio-emotional advancement of students, deemed pivotal for successful integration. Recognizing the significance of these facets, the Perception of Inclusion Questionnaire (PIQ) was devised as a succinct screening instrument to evaluate these dimensions, not solely for research objectives but also to aid educators in enhancing students' well-being and identifying intervention goals. The aim of the present investigation was to assess the psychometric characteristics of the Italian adaptation of the PIQ among students. The cohort comprised 673 Italian middle school students (52% female, mean age = 13.25 years) enrolled in either integrated classes (33%) or specialized institutions (67%). Additionally, 15% of the participants had been diagnosed with special educational requirements (SEN). The scrutiny was centered on the factorial and convergent validity of the metrics, alongside the consistency of the scales. Moreover, mean distinctions based on student gender, SEN identification, and educational setting were scrutinized. The outcomes affirmed the tripartite framework of the PIQ and exhibited satisfactory internal reliability for the three dimensions (i.e., emotional well-being, social inclusion, and academic self-concept). Furthermore, there existed certain indications supporting convergent validity. Robust measurement invariance was confirmed, permitting comparisons across genders, SEN status, and scholastic milieu. Concerning gender discrepancies, males exhibited elevated levels of social inclusion and academic self-concept relative to females. Pupils with disabilities attained lower scores across all three subdomains compared to their nondisabled counterparts. Moreover, learners with special educational needs in inclusive settings demonstrated diminished levels of academic self-concept in comparison to those in specialized institutions. While additional inquiry is warranted, the psychometric attributes of the Italian version of the PIQ for students appear promising due to its potential value in both scholarly investigations and practical applications.

**Keywords:** Perceptions of Inclusion Questionnaire (PIQ), Special Educational Needs (SEN), Emotional Well-Being, Social Inclusion, Academic Self-Concept, Student Perceptions.



## 1. Introduction

In recent decades, educational institutions have placed increasing emphasis on the emotional and social development of their students. This focus has been partic-

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ularly evident in the context of the current COVID-19 crisis, where the psychosocial risks faced by children have attracted significant attention (Flack et al., 2020; Mælan et al., 2021; Styck et al., 2021). Numerous studies have examined the impact of school closures due to COVID-19 on students' social inclusion, revealing a decline in this aspect (Drane et al., 2021; Loades et al., 2020). Consequently, the importance of inclusive education has become even more crucial on a global scale, given the critical repercussions of the COVID-19 pandemic (OECD, 2023). According to UNESCO (2018), inclusive education refers to the process of improving the capacity of the education system to meet the needs of all students. Schwab (2020) further clarifies that inclusive education seeks to promote educational equity, foster greater participation and provide high quality learning opportunities that support every student. Therefore, inclusive education aims not only to improve educational outcomes, but also to address negative outcomes, including socio-emotional factors (European Agency for Special Needs and Inclusive Education, 2017). Therefore, the assessment of students' socio-emotional outcomes can provide valuable information on the quality of inclusive education (DeVries et al., 2018). However, perceptions of inclusion in terms of socio-emotional variables such as emotional well-being, social inclusion, and academic self-concept may differ depending on gender, educational contexts (e.g., inclusive or non-inclusive schools), and special educational needs (SEN) status (DeVries et al., 2018; Pozas, Letzel, et al., 2021; Savolainen et al., 2018). Consequently, there is a need for appropriate assessment tools that enable the measurement of these socio-emotional variables, particularly from the perspective of the students themselves, who are the main stakeholders (De Leeuw et al., 2018). Assessing students' perceptions of school inclusion is not only crucial for school effectiveness research, but also for the development of targeted classroom interventions. To achieve this, the Perceptions of Inclusion Questionnaire (PIQ) was recently devised, offering a simple and easily understood means to explore students' emotional well-being, social inclusion and academic self-concept.

The PIQ (Venetz et al., 2015) is a concise, simple and easily understood 12-item questionnaire designed to assess emotional well-being, social inclusion in the classroom and academic self-concept. The PIQ assesses these three constructs through four components each, using a 4-point Likert scale (1 = not true at all to 4 = certainly true). Designed to encompass three distinct perspectives, the PIQ can be administered by the individual themselves or completed by the teacher, parent or primary caregiver. The student version of the PIQ is specifically designed for children and adolescents aged 8 to 16. Derived from the German questionnaire 'Fragenbogen zur Erfassung von Dimensionen der Integration von Schülern [FDI]' (Haeberlin et al., 1989), the PIQ is rooted in the concept of the FDI, which was a pioneering and singular measurement tool to assess students' perceived levels of inclusion in schools (DeVries et al., 2018).

The Inclusion Perceptions Questionnaire (Venetz et al., 2015) is a revised version of the FDI that has undergone a reduction in linguistic complexity, resulting in a reduction to 12 items (Venetz et al., 2014). Furthermore, the PIQ now includes versions for parents and teachers in addition to the student version. These three versions of the PIQ are available in 24 languages, such as Spanish, English, German, Arabic and French, and are freely accessible via www.piqinfo.ch. Previous studies have documented the psychometric properties of the student version of the PIQ in various countries. For example, a study of 823 Swiss German-speaking students, including

190 students with special educational needs, showed that the PIQ is a reliable instrument even at the level of individual items (Zurbriggen et al., 2019). However, Knickenberg et al. (2020) validated the PIQ for students with learning difficulties and found that negatively worded items presented some challenges. The teacher version of the PIQ was also tested and the consistency between teachers and students was assessed (Schwab & Alnahdi, 2020; Venetz et al., 2019). Furthermore, Schwab et al. (2020) conducted a study that showed good psychometric qualities for the main version of the PIQ.

More recently, validation of the student version of the PIQ has been carried out in non-German-speaking countries, including Saudi Arabia (Alnahdi & Schwab, 2021), Slovenia (Schmidt et al., 2021), Poland (Zwierzchowska et al., 2022), Sweden (DeVries et al., 2022) and France (Guillemot & Hessels, 2022), indicating that the instrument possesses strong psychometric properties in different language versions. However, to the best of our knowledge, there are no acclaimed studies that have used and validated the PIC in the Italian context.

On the basis of the aforementioned (validation) studies, it can be deduced that the PIQ demonstrates commendable psychometric properties. However, it is imperative to recognise that the universality of the PIQ's properties cannot be considered absolute (Guillemot & Hessels, 2022, p.3). Therefore, it is crucial to thoroughly examine the characteristics of the tool in each specific language and implementation context. The present study is guided by the following research investigations:

1. Does the PIQ present a three-factor structure in the Italian sample, as suggested by the previous theoretical and empirical literature? It is hypothesised that the student version of the PIQ in Spanish will demonstrate similar functionality in the Italian context, thus confirming the validity of the tool.

2. Does the PIQ demonstrate satisfactory reliability and convergent validity within the Italian student sample? Considering the theoretical and empirical context above, it is expected that the subscales of emotional well-being, social inclusion and academic self-concept will show positive associations with students' overall self-efficacy, whereas they will show negative correlations with their intention to discontinue education. Particularly in the case of academic well-being, a strong negative correlation with intention to drop out of school is expected.

3. The PIQ shows adequate measurement invariance across gender, state and school contexts (inclusive or non-inclusive?). As the instrument is intended to be validated in the Italian context, it is assumed that it will provide an adequate measurement environment to compare different subpopulations.

4. Disparities in emotional well-being, social inclusion and academic self-concept exist among Italian lower secondary school students according to gender, disability status and classroom settings (inclusive or non-inclusive?). It is hypothesised that disabled students will show lower scores in social inclusion and academic self-concept than their non-disabled peers.

Before delving into the specifics of the research, through a brief overview of the literature, it is appropriate to frame the three main fields of investigation of the PIC in the perspective of inclusion.

Considering the considerable amount of time students spend in educational institutions, it is evident that these institutions serve not only as centres for academic growth, but also as vital spaces for personal development. Extensive research studies (e.g., Bücker et al., 2018; López et al., 2017; Taylor et al., 2017) have already estab-

lished the existence of positive relationships between students' academic well-being, their academic performance and their overall development. Consequently, it is widely acknowledged that students' academic well-being is of enormous importance in promoting successful learning experiences. Moreover, contemporary educational policies actively address students' emotional and psychological well-being (e.g. Ecclestone, 2012). In line with Hascher's (2004) global model of school wellbeing, positive attitudes towards school, social interactions and students' self-esteem all exert considerable influence on students' overall wellbeing in the educational context. It has been observed that students with lower levels of emotional well-being (e.g. Knickenberg et al., 2022; Schwab, 2018b) and those who struggle with social inclusion (Schwab, 2018b) are more prone to early school leaving. When considering the concept of inclusion, these three dimensions of school well-being can be considered as crucial outcome variables. The need for inclusive education was exposed using social participation as a central theme. It is considered unacceptable that some students are socially excluded from the contexts of others due to individual characteristics, such as a diagnosis of BES. Although the law may support the inclusion of students with disabilities in regular classes (as seen in the Salamanca Declaration or the UN Convention on the Rights of Persons with Disabilities), legal guidelines cannot actively promote the formation of friendships. Previous research has indicated that students with disabilities in inclusive education are more susceptible to social disadvantage and inclusion challenges than their peers without special educational needs (as highlighted by Bossaert et al., 2013 and Schwab, 2018a). Similarly, previous studies have shown lower academic scores on self-concept for students with special educational needs (e.g., DeVries et al., 2021; Savolainen et al., 2018; Weber & Freund, 2017). However, only a limited number of studies have observed lower levels of well-being among students with disabilities (E.skrzypiec et al., 2016), while others have found no such differences (Schwab et al., 2018; Zurbriggen et al., 2018). Results concerning emotional well-being are inconclusive; however, Schwab (2014) und no impact of the school environment on emotional well-being, although higher levels of social inclusion have been observed for disabled students in classes with specific strengthening projects on the phenomenon of inclusion (from now on called "inclusive classrooms"). Extensive research has been conducted on the differences between groups, not only in terms of SEN but also considering gender variables. In the study conducted by Schwab et al., these differences were examined in depth.

When examining students' emotional well-being, social inclusion and academic self-concept, it is crucial to take into account additional variables that may be associated with their experiences in inclusive education. These variables include students' general self-efficacy (Briones et al., 2005; Klassen, 2010; Mælan et al., 2021) and their intentions to discontinue school (Frostad et al., 2015; Schwab, 2018b). Numerous studies have established a strong connection between emotional well-being and general self-efficacy (Gómez et al., 2007; Malo et al., 2011). For example, De Caroli and Sagone (2014) found positive associations between secondary school students' general self-efficacy and their emotional well-being. Similarly, Céspedes et al. (2021) explain that students with higher levels of self-efficacy also report greater degrees of social inclusion. Furthermore, research has indicated that general self-efficacy and academic self-concept are positively and considerably related (Bong & Skaalvik, 2003; Scherer, 2013). However, previous research has shown a negative association between emotional well-being (Schwab, 2018b), social inclusion (Pijl et al., 2014; Schwab,

2018b), academic self-concept and intention to drop out of school. Specifically, De Witte et al. (2013) argue that a significantly negative correlation between emotional well-being and intention to drop out of school can be expected.

## 2. Materials and methods

A total of 673 Italian lower secondary school students (52% female) with a mean age of 13.25 years (SD = 1.96 years) participated voluntarily in the study. While 33% of the students were taught in an inclusive classroom, 67% were educated in a non-inclusive classroom (contexts where strengthening projects on school inclusion have not been implemented). Of this sample, 15% of the students were diagnosed as having SEN. Data collection took place between February and March of 2023. The participants completed a voluntary online survey during regular school hours, which took approximately 15 to 20 minutes. During the assessments, three assistants monitored and supported those students who might have encountered difficulties filling out the questionnaire. Given that students were underage, informed con- sent from their parents or tutors was obtained from all participants prior to their completing the questionnaire.

As regards the research tools, it should be remembered that the the PIQ includes the subscales social inclusion (e.g., "*I have a lot of friends in my class*"), emotional well-being (e.g., "*I like going to school*"), and academic self-concept (e.g., "*I am a fast learner*"), with four items each. Students were asked to indicate their agreement using a 4-point Likert scale (1 = not at all true to 4 = certainly true). One statement in each of the subscales is negatively worded (e.g., "*I have no desire to go to school*"). Responses were recorded for the analyses.

Students' general self-efficacy was measured using the Spanish version (Bläßler & Schwarzer, 1996) of the General Self-Efficacy Scale from Schwarzer and Jerusalem (1999). The scale consists of 10 items (e.g., "*I can always manage to solve difficult problems if I try hard enough*") and comprises a 4-point Likert scale ranging from 1 = not at all true to 4 = exactly true (Cronbach's α =.90).

Students' intentions to leave education early was measured using the Intention to Quit Scale by Pijl et al. (2014), which was translated into Italian following a back-translation process (Bundgaard & Brøgger, 2019). The scale consists of 3 items (e.g., "I really feel that I am wasting my time in school.") and comprises a 5-point Likert scale ranging from 1 = never to 5 = always (α = .86).

The collected data were analyzed using SPSS 28, Mplus 8.3 and R software (packages lavaan and equaltestMI). As a first initial step, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were conducted to verify the adequacy of the data. Second, confirmatory factor analyses (CFA) were conducted in order to test the PIQ's factor structure. Given that the items are categorical and were treated as such, the weighted least-square means and variances estimator (WLSMV) were used in order to consider the data's non-normal distribution (Liang & Yang, 2014). To assess the quality of the model, different fit indices were employed: $\chi 2/df$ ratio, where a ratio$\leq$3 indicates a good fit with the data (Byrne, 2013); root mean square error of approximation (RMSEA), where a value$\leq$0.08 suggests a well-fitting model; standardized root mean square residual (SRMR), with acceptable values considered to be $\leq$ 0.08 (Hu & Bentler, 1999); and comparative fit index (CFI) and Tucker-Lewis index (TLI), where values$\geq$0.9 demonstrate adequate fit (Bentler, 1990). Third, the internal consistency of the factors was verified by means of the Cronbach's α and McDonald's

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ω. Fourth, the PIQ's construct validity was explored by means of correlation analyses between self- efficacy, intention to quit, and academic achievement. Lastly, to test mean differences between groups, t-tests were performed. Effect sizes were assessed by Cohen's d. Students' emotional well- being, social inclusion, and academic self-concept were considered dependent variables whereas gender, SEN status, and classroom setting were entered as independent variables. Given that strong or scalar measurement invariance is a prerequisite for calculating meaningful mean comparisons across groups (e.g., gender, SEN status or classroom setting), the PIQ was first checked for measurement invariance. Configural, metric, scalar, and finally strict scalar invariance were tested.

## 3. Results

Below are the tables that analyze the descriptive statistics of the measures and the correlations between the scales.

**Table 1.** Descriptive statistics of the measures

| | **Emotional Well-being** | **Social Inclusion** | **Academic Self-concept** | **General Self-Efficacy** | **Intention toQuit** |
|---|---|---|---|---|---|
| N | 673 | 673 | 673 | 585 | 585 |
| M | 3.10 | 3.16 | 2.89 | 3.08 | 1.79 |
| SD | .63 | .61 | .60 | .61 | 1.02 |
| Min | 1 | 1 | 1 | 1 | 1 |
| Max | 4 | 4 | 4 | 4 | 5 |

**Table 2.** Correlations between the scales

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| (1) Emotional Well-being | - | | | |
| (2) Social Inclusion | .54** | - | | |
| (3) Academic Self- concept | .47** | .39** | - | |
| (4) General Self- Efficacy | .29** | .30** | .46** | - |
| (5) Intention to Quit | −.31** | −.11 | −.17** | .04 |

- *Factor structure, reliability, and convergent validity*

The Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity demonstrated strong relationships among the items (KMO = 0.868; $\chi 2 = 3117.82$, $p \leq .001$), indicating appropriateness to perform a CFA. The PIQ's three-factor structure was modeled with each of the four corresponding indicators. Except for the RMSEA, the fit indices for the three-factorial model indicated an appropriate model fit ($\chi 2 = 384.702$, df = 51, $p \leq .001$; RMSEA = 0.10, CFI = 0.98, TLI = 0.98, SRMR = 0.07).

The standardized factor loadings ranged between .477 and .878 (emotional well-being: .59 ≤ λ ≤ .78; social inclusion: .56 ≤ λ ≤ .84; academic self-concept: .52 ≤ λ ≤ .81).

As indicated by the Cronbach's α and McDonald's ω, the three factors' internal consistencies were of an acceptable level (emotional well-being α = .80, ω = .88; social inclusion α = .79, ω = .87; academic self-concept α = .72, ω = .80). To verify the evidence on convergent validity for the PIQ, correlation analyses were conducted between the variables of general self-efficacy and intention to quit. Prior to these analyses, the internal consistencies for both variables were examined. Both the general self-efficacy (α = .90, ω = .90) and intention to quit scales (α = .86, ω = .86) showed good internal consistencies for the present sample.

As seen in Table 1 and 2, the correlations were all moderate to high, and significant, which indicates a good convergent validity between the three PIQ scales and the corresponding scales. Students' emotional well-being was moderately correlated with their general self-efficacy (r = .29, p ≤ .001) and negatively related to their intentions to quit school (r = −.31, p ≤ .001). With regards to students' social inclusion, there was a positive correlation with general self-efficacy (r = .30, p ≤ .001), and a slightly negative correlation with intention to quit school (r = −.11, p ≤ .05). Lastly, there was a strong positive correlation between academic self-concept and general self-efficacy (r = .46, p ≤ .001), but a negative correlation to students' intentions to quit (r = −.17, p ≤ .001).

- *Descriptive statistics*

Table 1 shows the means and standard deviations of the PIQ subscales as well as the other measures used within this study. The three PIQ means were high and with homogeneous standard deviations. As the theoretical mean of the scales was 2.5, the scores were significantly positive: emotional well-being (t(672) = 24.66, p ≤ .001, d = .63), social inclusion (t(672) = 28.39, p ≤ .001, d= .61), and academic self-concept (t(672) = 18.05, p ≤ .001, d = .56). The general self-efficacy mean score was also significantly positive: (t(584) = 22.77, p ≤ .001, d = .62). For a scale ranging from 1 to 5, the intention to quit scale had a low mean, (t(584) = −28.65, p ≤ .001, d = 1.02), thus indicating that students have a low level of intention to leave education early.

In sum, these results indicate that the majority of the participating students in this sample have a rather positive perception of inclusion. Nevertheless, when revising the results in detail, it is possible to identify that a total of 10% of the students who participated in this study could be considered to be at risk, given their significantly low levels of emotional well-being (4%), social inclusion (3%), and academic self-efficacy (3%).

- *Measurement invariance across gender, SEN status, and classroom setting*

To ensure meaningful interpretation of group mean differences, measurement invariance for the three PIQ scales across groups (male vs. female students; students with SEN vs. students without SEN; inclusive classroom setting vs. non-inclusive classroom setting) was explored. Measurement invariance analyses revealed that the PIQ shows partially strong measurement invariance (Putnick & Bornstein, 2016) across gender (Table 3), classroom setting (i.e., inclusive vs. non-inclusive classrooms; Table 4), and across students with vs. without SEN (Table 5).

**Table 3.** Fit statistics of the CFA models and for the group comparison across gender

| Model | χ2 wlsmv | df | p | CFI | RMSEA | SRMR | Δχ2 | Δdf | p |
|---|---|---|---|---|---|---|---|---|---|
| *Baseline models* | | | | | | | | | |
| Overall | 357.858 | 51 | <.001 | .981 | .096 | .073 | | | |
| Male | 189.952 | 51 | <.001 | .982 | .093 | .079 | | | |
| Female | 222.431 | 51 | <.001 | .981 | .100 | .079 | | | |
| *Group comparison* | | | | | | | | | |
| Configural invariance | 412.383 | 102 | <.001 | .982 | .097 | .079 | | | |
| Metric invariance | 459.444 | 111 | <.001 | .979 | .098 | .083 | 19.074 | 9 | .025 |
| Scalar invariance | 464.286 | 132 | <.001 | .980 | .088 | .079 | 12.027 | 21 | .007 |

*n* = 339 male students, *n* = 314 female students. WLSMV = weighted least-square means and variances estimator; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. $\Delta\chi^2$ = Chi-square difference tests (with reference to the previous model).

**Table 4.** Fit statistics of the CFA models for the group comparison across classroom settings

| Model | χ2 wlsmv | df | p | CFI | RMSEA | SRMR | Δχ2 | Δdf | p |
|---|---|---|---|---|---|---|---|---|---|
| *Baseline models* | | | | | | | | | |
| Overall | 385.388 | 51 | <.001 | .980 | .099 | .074 | | | |
| Inclusive | 203.005 | 51 | <.001 | .975 | .116 | .089 | | | |
| Non-inclusive | 233.156 | 51 | <.001 | .984 | .089 | .073 | | | |
| *Group comparison* | | | | | | | | | |
| Configural invariance | 436.161 | 102 | <.001 | .981 | .099 | .078 | | | |
| Metric invariance | 453.444 | 111 | <.001 | .981 | .096 | .079 | 6.433 | 9 | .696 |
| Scalar invariance | 476.744 | 132 | <.001 | .980 | .088 | .079 | 80.565 | 21 | <.001 |

*n = 224 students in inclusive classrooms, n = 448 students in non-inclusive classrooms. WLSMV = weighted least-square means and variances estimator; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. ⊿χ2 = Chi-square difference tests (with reference to the previous model).*

**Table 5.** Fit statistics of the CFA models for the group comparison across SEN status

| Model | χ2 wlsmv | df | p | CFI | RMSEA | SRMR | Δχ2 | Δdf | p |
|---|---|---|---|---|---|---|---|---|---|
| *Baseline models* | | | | | | | | | |
| Overall | 384.702 | 51 | <.001 | .980 | .099 | .074 | | | |
| Non-SEN | 307.312 | 51 | <.001 | .982 | .094 | .072 | | | |
| SEN | 154.425 | 51 | <.001 | .942 | .142 | .131 | | | |
| *Group comparison* | | | | | | | | | |
| Configural invariance | 461.738 | 102 | <.001 | .978 | .103 | .081 | | | |
| Metric invariance | 503.543 | 111 | <.001 | .976 | .103 | .084 | 15.937 | 9 | .068 |
| Scalar invariance | 509.683 | 132 | <.001 | .977 | .092 | .082 | 8.408 | 21 | .993 |

*n = 572 students without SEN, n = 101 students with SEN. WLSMV = weighted least-square means and variances estimator; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. ⊿χ2 = Chi-square difference tests (with reference to the previous model).*

- *Differential analyses*

In order to explore group mean differences in terms of emotional well-being, social inclusion, and academic self-concept, independent sample t-tests were conducted. Results from an independent samples t-tests indicate that boys stated higher values on social inclusion (MSI = 3.25, SDSI = .62; t (651) = 2.98, p ≤ .01, d = .59) and academic self-concept (MASC = 2.95, SDASC = .56; t(651) = 2.98, p ≤ .05, d = .55) than girls (MSI = 3.12, SDSI = .57; MASC = 2.86, SDASC = .54). Male and female participants do not significantly differ regarding emotional well-being, t(651) = .127, p = n.s.

Concerning differences among students with and without SEN, the t-tests reveal that students with SEN indicated lower values for emotional well-being (MSWB = 2.84, SDSWB = .68; t(671) = 4.48, p ≤ .001, d = .62), social inclusion (MSI = 2.82, SDSI = .62; t(671) = 6.42, p ≤ .001, d = .59), and academic self-concept (MASC = 2.58, SDASC = .55; t(671) = 6.26, p ≤ .001, d = .54) than students without SEN (MASC = 3.15, SDASC = .61; MSI = 3.23, SDSI = .58; MASC = 2.94, SDASC = .54). The results of the final t-tests showed that students learning in inclusive classrooms stated lower values for academic self-concept (MASC = 2.83, SDASC = .58; t(670) = −2.05, p ≤ .05, d = .56) than students in non-inclusive classrooms (MASC = 2.92, SDASC = .54). There were no significant group differences regarding students' emotional well-being and social inclusion.

## 4. Discussion

Even prior to the emergence of COVID-19, particularly within the sphere of inclusive education, the focus of research has been on the well-being of students in

school, encompassing their sense of social inclusion, their academic self-concept, and their overall satisfaction. However, on the contrary, in inclusive classes, students with SEN may experience feelings of being overwhelmed, caused by an exasperated pressure on their situation and an extreme search for inclusion, which could potentially contribute to the development of a negative academic self-concept Given the absence of a brief screening tool that can assess students' emotional well-being, social inclusion, and academic self-concept, the primary objective of the present study was to evaluate the psychometric properties of the Italian student version of the PIQ. Additionally, the study provided initial insights into the current perceptions of Italian students, with a focus on comparing gender, students with and without SEN, and classroom settings. Confirmatory factor analyses confirmed the three-factor structure proposed by Zurbriggen et al. (2019). Furthermore, the reliability of all three subscales fell within an acceptable range. It is worth highlighting that, consistent with previous studies, the subscale of academic self-concept exhibited the lowest reliability (e.g., Knickenberg et al., 2020; Zurbriggen et al., 2019). This finding suggests that the construct of academic self-concept may be assessed in a relatively broad manner using the PIQ. Nevertheless, an internal consistency of .80 can still be deemed satisfactory.

Regarding the concept of convergent validity, the findings can only be partially interpreted as supporting evidence. All correlations observed were consistent with expectations, suggesting that more positive perceptions of inclusion are associated with a decreased intention to drop out of school and an increased level of general self-efficacy. When examining the subscale related to students' intention to quit, the results indicate a strong correlation with emotional well-being, while the correlation is moderately strong for the subscale related to social inclusion. This particular finding differs somewhat from the study conducted by Knickenberg et al. (2022), where a much higher correlation between emotional inclusion and students' intentions to quit was discovered. Moreover, general self-efficacy was found to be significantly associated with all three scales. However, the strongest correlation was found between general self-efficacy and academic self-concept. These results align with previous research that has identified robust associations between both constructs (Bong & Skaalvik, 2003; Ferla et al., 2009). Additionally, the analyses examining measurement invariance revealed (partially) strong equivalence across gender, students with and without special educational needs (SEN) status, and students attending classrooms that implement inclusive enhancements (inclusive classroom) and those that do not (non-inclusive classroom). These results are consistent with other studies that have explored the measurement invariance of the subscales of the PIQ, such as the German version (Knickenberg et al., 2020) and the French version (Guillemot & Hessels, 2022).

Other notable findings revealed that the mean values of the PIQ demonstrated a significant elevation, with all values surpassing the theoretical mean of 2.5 on the scale. Consequently, these outcomes suggest that the majority of students who participated in this study possess a predominantly positive perception of inclusion. Additionally, these findings align with previous research conducted in Germany (Schwab & Alnahdi, 2020) and France (Guillemot & Hessels, 2022), which also employed the PIQ to explore students' perceptions of inclusion. However, it is crucial to note that an elevated mean score does not necessarily guarantee that all students perceive high levels of inclusion. Within the present sample, it was observed that a minority of students, comprising 10% of the total, exhibited significantly low levels of emotional

well-being (4%), social inclusion (3%), and academic self-efficacy (3%). Therefore, it is imperative to prioritize these at-risk students and implement preventative and intervention strategies to provide them with adequate support.

Differential analysis did not reveal any statistically significant differences between gender. However, in terms of social inclusion and academic self-concept, the findings of this study unveiled disparities between males and females. Interestingly, it was observed that boys perceived significantly higher levels of social inclusion and academic self-concept compared to girls. When comparing the results of this study with previous empirical evidence, it becomes apparent that they present a somewhat contradictory picture. For instance, Schwab et al. (2020) found that girls experienced higher levels of emotional well-being than boys, but no gender effects were observed for social inclusion or academic self-concept. On the other hand, studies conducted by Schneekloth and Andresen (2013) and Venetz et al. (2019) demonstrated that females reported higher levels of emotional well-being. Similarly, Ato et al. (2014) and Krull et al. (2018) highlighted that girls felt greater levels of social inclusion compared to boys. Moreover, Venetz et al. (2019) reported that boys exhibited higher levels of academic self-concept. Additionally, the findings of the present study appear to contradict previous research, which has consistently shown that females tend to have higher academic self-concepts (Valdés-Cuervo et al., 2015) as well as higher levels of other significant socio-emotional variables (Blanco et al., 2012). However, it is crucial to emphasize that all these studies were conducted prior to the COVID-19 pandemic. Therefore, it is plausible that the contradictory results observed in this study could be attributed to the impact of the pandemic on the educational landscape, as well as the unanticipated changes and challenges faced by students (Wyse et al., 2020). For example, Styck et al. (2021) discovered that female secondary school students generally experienced higher levels of stress in relation to school workload and social isolation compared to their male counterparts. Consequently, one potential explanation for the findings of the present study is that girls may have had a greater need for physical social contact during the COVID-19 period. It is conceivable that the post-pandemic period may have exacerbated the struggles faced by girls in terms of social inclusion, emotional well-being, and academic competency beliefs.

The results of the current study paint a rather unfavorable picture for students with Special Educational Needs (SEN). These students exhibit lower levels of emotional well-being, social inclusion, and academic self-concept when compared to their peers without SEN. This finding suggests that the inclusive education practices implemented in Italian schools are still inadequate and require significant improvement. Numerous authors have expressed their concerns regarding the state of inclusive education in Italy, despite efforts to promote inclusive education policies. It is evident that inclusive education in Italy faces a long and arduous journey ahead, as highlighted in the works of Ianes & Augello (2023) and Galelli (2017).

In accordance with previous studies, it was found that students in inclusive classrooms have lower levels of academic self-concept, as highlighted in the works of Bear et al. (2002) and Marsh et al. (2006); it is important to specify that in this literature comparison we have equated classrooms with inclusive strengthening projects (we call "inclusive classroom") to those structured ad hoc in the school contexts analyzed by the authors cited. This phenomenon can be partially explained by the big-fish-little-pond effect, as discussed in the works of Marsh et al. (2008) and Seaton et al. (2010).

Lüdtke et al. (2005), suggests that if high social reference standards or criterion reference standards are employed, students with SEN may develop lower academic self-concepts in comparison to their peers without SEN. These findings are consistent with the results of the present study. Given the scarcity of comparative research on inclusive education, as noted by García-Cedillo et al. (2015), it is imperative for educational researchers to conduct cross-cultural investigations into students' experiences and perceptions of inclusive schooling. Such investigations would not only expand the existing knowledge base but also provide valuable insights to inform countries about intervention measures that can support their efforts in the development of inclusive education. Therefore, this paper strongly urges educational researchers to prioritize these cross-cultural investigations in order to further advance the field of inclusive education.

## 5. Limitations and future research

The current investigation highlights a number of limitations that must be acknowledged. To begin with, it is worth noting that the sample of students involved in this study primarily consists of individuals from private educational institutions. Moreover, it is important to recognize that the sample exclusively comprises students in lower secondary education, thereby necessitating a cautious interpretation of the study's findings. Another crucial limitation that deserves attention is the timeframe in which data collection occurred for this study, which happened during the initial trimester of 2023. This particular period is significant due to the fact that it is relatively close to (and therefore strongly influenced) a prolonged two-year period of lockdowns imposed as a result of the COVID-19 pandemic. Consequently, considering the widespread impact of the pandemic (Hevia et al., 2022), it is imperative to approach the findings of this study with a discerning mindset. Given this specific contextual backdrop, it is therefore necessary for future research endeavors to adopt a longitudinal design in order to explore the progression of the PIQ dimensions and examine their longitudinal measurement invariance (Knickenberg et al., 2022). Lastly, it is also crucial to delve into the psychometric properties of PIQ by exploring its applicability among younger age groups, such as Italian primary school students. In doing so, a more comprehensive understanding of the psychometric properties of PIQ in italian school context can be attained.

## 6. Conclusion

Students' emotional well-being, social inclusion, and academic self-concept are widely acknowledged as fundamental elements and consequential outcomes of a prosperous inclusive educational environment. Consequently, it is of fundamental importance to pay close attention to the ways in which students are educated in the school context and how the various events they experience in this environment are perceived by them and how they influence their perception of well-being, personal growth and of inclusive and academic development. In light of this objective, the current research sought to verify the applicability of the PIQ student version within the Italian educational framework. The findings of this investigation divulged that the PIQ, an economic and dependable instrument, upholds rigorous psychometric criteria, thereby establishing its suitability as an evaluative tool for gauging the emotional well-being, social inclusion, and academic self-concept of Italian students.

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