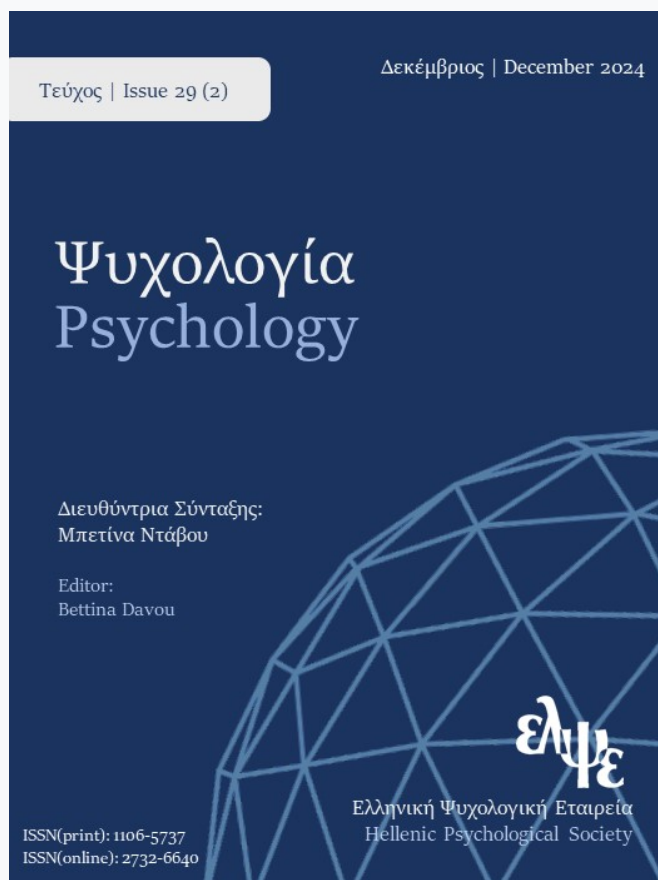


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ΕΜΠΕΙΡΙΚΗ ΕΡΓΑΣΙΑ | RESEARCH PAPER

# Exploring the “interactive” hypothesis in adolescents with vision impairment: The relationship between school belonging and self-esteem

Ifigeneia MANITSA<sup>1</sup>, Fiona BARLOW-BROWN<sup>2</sup>

<sup>1</sup>School of Psychology and School of Education, University of Birmingham

<sup>2</sup>Department of Psychology, Kingston University London

KEYWORDS	ABSTRACT
School Psychology Social Psychology Interactive Hypothesis School Belonging Self-Esteem Special Educational Needs and Disabilities Adolescence	According to the “interactive” hypothesis, global self-esteem is the outcome of the interaction between domain-specific self-esteem and the importance individuals attach to each particular area of the self. This study is the first known attempt to examine the “interactive” hypothesis in adolescents with vision impairment, focusing on the effect of school belonging on self-esteem. Twenty-five adolescents with vision impairment and 19 sighted adolescents, aged 12-18 years, attending mainstream and special schools, participated in this study. Two groups of adolescents with vision impairment participated in this study according to their visual acuity: adolescents with severe sight impairment (previously “blindness” according to the UK classification system) and adolescents with sight impairment (previously “low vision” according to the UK classification system). All the participants completed the revised form of Harter’s Self-Perception Profile (2012) and the Psychological Sense of School Membership (PSSM) scale (Goodenow, 1993a, 1993b). The findings of the study confirmed the hypothesis and showed that the importance attached to specific domains of self-esteem moderates the relationship between school belonging, and domain-specific and global self-esteem in adolescents with and without vision impairment. This study could be considered the first attempt to test the relationship between school belonging and self-esteem in students with severe sight impairment and students with sight impairment, treating them as two different student populations with individual socio-emotional needs. Our findings can be used by professionals who work closely with students with vision impairment (e.g., teachers and rehabilitation officers) to develop educational interventions that will promote their socio-emotional development and self-esteem.
CORRESPONDENCE	
Ifigeneia Manitsa School of Psychology and School of Education, University of Birmingham 52 Pritchatts Rd, Birmingham B15 2TT <a href="mailto:i.manitsa@bham.ac.uk">i.manitsa@bham.ac.uk</a>	

## Introduction

The current study aimed to explore the relationship between adolescents’ global self-esteem and their sense of belonging at school, and the extent to which this relationship is moderated by the importance that individuals ascribe to the individual domains of self (e.g., academic competence, social competence, and physical appearance) that make up global self-esteem (Rosenberg’s 1965 “interactive” hypothesis). This study also aimed to explore the role of vision in the relationship between self-esteem (domain-specific and global) and sense of belonging at school by looking at adolescents with and without vision impairment. Our research draws its theoretical background and rationale from key theories in the fields of developmental, social, and educational psychology. To our knowledge, this is the first study which aimed to examine the role of school inclusion on self-esteem in a

student population with vision impairment. The variables included in this study are further defined below alongside the relevant literature and the rationale for this research.

### ***School belonging in adolescents with vision impairment***

School belonging has been defined and conceptualised in many ways in past research, but frequent synonyms in the literature specify students feeling accepted, connected, and included. It is evident from prior research that school belonging has not only implications for academic achievement, mental health, and risk of later substance abuse (Bond et al., 2007) but also long-term implications for adult mental health (Allen et al., 2024).

Unfortunately, previous research suggests that school belonging may be affected by the challenges that adolescents with vision impairment face in their school inclusion. It is not clear however that school inclusion relates purely to the type of school that students with vision impairment attend. For example, the inclusion of students with vision impairment in mainstream classrooms alongside sighted peers does not necessarily mean that they engage in positive social interactions or that they feel accepted by their sighted peers (De Verdier, 2016). At the same time, there is evidence that suggests that adolescents with vision impairment may feel much more stigmatised and excluded in special schools than in mainstream schools (Worth, 2013). Thus, adolescents with vision impairment may feel excluded from their school environment because of factors which do not directly relate to the type of school that they attend (e.g., the development of close friendships and the presence of supportive teachers; Jessup et al., 2017; Jessup et al., 2018a; Jessup et al., 2018b). Poor relationship dynamics between students and their teachers (Chang & Schaller, 2002) and poor treatment in school activity participation (Lieberman et al., 2002) may undermine their sense of belonging.

Whilst relatively limited research exists that specifically considers belonging in adolescents with vision impairment in secondary school education, there are also relevant studies focussing on students in college or university settings that suggests issues with belonging remain in post-secondary settings (see Bodaghi et al., 2016; Bulk et al., 2022). Bulk et al. (2022) highlight the importance of fostering a sense of belonging in an academic environment and some of the specific difficulties faced by students. Thus, findings from both school and university settings highlight both immediate and long-term problems stemming from difficulties in developing a sense of school belonging in adolescents with vision impairment. There is therefore a need for further research into the factors that influence school belonging in this population.

### ***The relationship between school belonging and self-esteem***

One factor that has previously been implicated in research looking at the school inclusion is its relationship with self-esteem (see Hoge et al., 1990; Keefe & Berndt, 1996; Sarkova et al., 2014). Self-esteem is conceptualised in this study as a multidimensional term. Thus, self-esteem encompasses both (1) individuals' self-evaluations of their performance in specific tasks and situations (domain-specific self-esteem; Harter, 2012) and (2) the impact of these self-evaluations on the overall feelings of worth that they develop about themselves (global self-esteem; Augoustinos et al., 2014). Previous research on self-esteem has demonstrated that specific-domain self-esteem may be more related to individuals' behaviour and performance outcomes (e.g., academic success), whereas global self-esteem may be more associated with individuals' psychological well-being (Rosenberg et al., 1995).

Before proceeding to analyse previous research that has linked social inclusion in the school environment to the development of self-esteem in adolescence, it is important to make a clear distinction between domain-specific and global self-esteem. According to the intrapersonal perspective or the competencies model developed by James (1890), global self-esteem is based on people's own perceptions of how adequately they perform in domains where they consider their success important. This perspective suggests that self-esteem is a hierarchical and multifaceted concept that involves emotional, social, physical, and academic components that significantly influence global self-esteem. Thus, the intrapersonal perspective of self-esteem provides an account of how global

and domain-specific aspects of self-esteem are interconnected, arguing that the nature of global self-esteem cannot be completely understood without considering domain-specific aspects of self-esteem. Further, the interpersonal or the reflected appraisals model maintains that people base their self-esteem on others' opinions and perceptions. Dating back to Cooley's (1902) and Mead's (1934) notions of symbolic interactionism, this perspective largely considers global self-esteem to be the result of internalisation of other's perceptions and evaluations of oneself maintaining that our self-esteem is also influenced by the "generalised other" which refers to the entire social and cultural environment. The suggested model has been conceptualized more recently as a 'sociometer' (Leary et al., 1998) or the 'need to belong' (Baumeister & Leary, 1995). This theoretical model predicts global self-esteem is primarily influenced by self-evaluations important for the individual's social status.

An example demonstrating the differences between domain-specific and global self-esteem in adolescence, as well as the moderating role that the importance attached to particular domains of the self may play in the relationship between domain-specific and global self-esteem, could be the following: an adolescent with vision impairment, who is asked to evaluate their own academic and athletic skills, may rate their academic abilities much higher than their athletic abilities because they believe that their academic performance is much better compared to their athletic performance. These evaluations reflect their perceptions of specific areas of their performance (e.g., academic, and athletic performance) which refer to their domain-specific self-esteem. On the other hand, this adolescent may also believe that their athletic performance is much more important compared to their academic performance, therefore these specific evaluations may negatively affect their overall sense of worth, which refers to their global self-esteem. Thus, this example demonstrates that the importance that an adolescent attaches to their athletic and academic skills may play a significant role in the relationship between their domain-specific and global self-esteem.

It has been found that specific aspects of social inclusion in school (e.g., social relationships with teachers and classmates and not specifically the sense of school belonging) may positively affect self-esteem. Keefe and Berndt (1996), examined the relationship between adolescents' friendship qualities and self-esteem in adolescents who attended public schools, found that more positive friendship features may be more positively associated with domain-specific (e.g., domains of athletic competence, physical appearance, and behavioural conduct) and global self-esteem. Sarkova et al.'s (2014) study, focusing on the examination of the relationship between social relationships with teachers and peers and global self-esteem, showed that adolescents who had developed positive social relationships with teachers and peers reported higher self-esteem scores. Further research which focused on the impact of school experiences (e.g., teacher evaluations) on adolescents' domain-specific and global self-esteem, highlighted their unique effect on these individuals' global self-esteem (Hoge et al., 1990). The consistency with which these particular aspects of social inclusion (development of social relationships with teachers and classmates) are found to have a positive impact on the domain-specific and global self-esteem of typically developing adolescents may indicate that school belonging may also have a similar impact on the self-esteem of adolescents with vision impairment. In the present study, we adopted a multidimensional approach to conceptualising self-esteem because, considering previous literature in this area, we believe that the way individuals feel about themselves may be influenced by their perceptions of their different abilities and performance in various tasks. This relates to a key question in the current study with respect to how the importance individuals ascribe to different aspects of their domain specific self-esteem moderates their global self-esteem (the "interactive" hypothesis).

### ***The "interactive" hypothesis***

Dating back to James (1890), who suggested that domains of higher individual importance will be more relevant to global self-esteem compared to domains of lower individual importance, previous literature has attempted to either relate importance ratings to global self-esteem or examine the moderating role of importance attached to

specific domains of self-esteem in the relationship between domain-specific and global self-esteem. Although we have not found any studies which have investigated the moderating role of the importance attached to specific areas of self-esteem in the relationship between domain-specific and global self-esteem in individuals with vision impairments, multiple studies of typically developing individuals have tried to confirm Rosenberg's (1965) "interactive" hypothesis which suggested that global self-esteem may be the outcome of the interaction between domain-specific and importance attached to each particular area of the self (see Farmer et al., 2001; Jones et al., 2012; Lachowicz-Tabaczek, 1998; Marsh, 1986; Pelham & Swann, 1989; Rosenberg et al., 1995). According to Rosenberg's "interactive" hypothesis (1965), high self-ratings on specific self-characteristics (attributes) accompanied by high importance on those specific self-domains will lead to higher self-esteem. On the other hand, low self-evaluations accompanied by high importance in these specific areas of the self will result in lower self-esteem. Finally, low importance in specific domains of the self does not affect self-esteem independently of self-evaluations. A more detailed approach to the previous literature also suggests that the effect of importance ratings on the relationship between domain-specific and global self-esteem may depend on the nature of these specific domains; for instance, the relationship between specific domains of the self, which are related to socialisation, and global self-esteem may be more affected by the importance attached to the former than the relationship between other domains of the self, which are related to personal goal setting, and global self-esteem (Lachowicz-Tabaczek, 1998).

Although there is no research which has examined whether the relationship between school belonging and self-esteem may be influenced by the importance attached to specific domains of the self, the current study aimed to shed light on adolescents' experiences in the school environment by adapting the "interactive" hypothesis in a student population. Consequently, the main objective of this exploratory study was to investigate the extent to which the relationship between self-esteem (domain-specific and global) and sense of belonging at school is moderated by the importance that individuals place on individual self-domains.

### ***The role of vision in the relationship between adolescent self-esteem and the extent to which they feel a sense of belonging at school***

Previous research has considered socio-emotional development in populations of students with vision impairment, but it is often difficult to compare these studies and draw reliable inferences because the samples have included students with additional Special Educational Needs and Disabilities (SEND) (e.g., De Verdier, 2016; Jessup et al., 2017; Jessup et al., 2018a; Jessup et al., 2018b). In such studies, it remains unclear as to whether social experiences have been affected by vision impairment or by an additional need or combination of needs. In an attempt to overcome this issue, the current study excluded any adolescents with additional SEND.

The focus of this study was also on adolescence which can be divided into the following three stages: early, middle, and later adolescence (Furman & Buhrmester, 1992). Considering the exploratory nature of the current research, the relationship between school and self-esteem in all three stages of adolescence was examined. Research suggests that adolescence is a particularly sensitive period for the individual; significant changes occur, and it is a period of life that has been linked to an adverse relationship with mental health (e.g., depressive symptoms; Blakemore, 2019). Furthermore, adolescents with vision impairment may be at higher risk than their sighted peers because they not only have to deal with the usual developmental changes of adolescence but also with the challenges posed by vision loss (Laursen & Hartl, 2013). Research has also suggested that adolescents can attach great importance to the social relationships they develop with their peers (e.g. preferring to spend more time with their peers rather than with their family members; Laursen & Hartl, 2013). Additionally, some of the positive characteristics that are associated with friendships (e.g., practical, and emotional support) were found to relate to healthier identity development during adolescence (Jones et al., 2014).

In the UK, individuals with vision impairment are certified either as severely sight impaired (blind) or sight impaired (partially sighted or with low vision) according to their binocular corrected vision (NHS, 2021). Previous literature on the domain-specific self-esteem of adolescents with vision impairment (Shapiro et al., 2005, 2008) is limited and has not examined the differences between adolescents with severe sight impairment (previously “blindness” according to the UK classification system) and adolescents with sight impairment (previously “low vision” according to the UK classification system). According to performance on the Snellen test, individuals certified as severely sight impaired are categorised in three different groups: people with visual acuity less than 3/60 Snellen, people with visual acuity better than 3/60 Snellen or equivalent but worse than 6/60 and people with visual acuity better than 6/60 Snellen but with significant vision loss. Individuals who are certified as sight impaired are also categorised in three different groups: people with visual acuity 3/60 to 6/60 Snellen with a full visual field, people who are between 6/60 and 6/24 Snellen and suffer from moderate contradiction of the field and people who have visual acuity 6/18 Snellen or better than this (RNIB, n.d.). Research suggests that different levels of visual functioning may affect socio-emotional development differently (for instance, the presence of some residual vision may positively affect socio-emotional development; Preisler, 1991). Therefore, it could be argued that there may also be differences in the self-esteem of adolescents with severe sight impairment and adolescents with sight impairment, who may attach importance to different areas of their self. Based on this argument, the current study also aimed to explore the differences between these two groups of adolescents and sighted adolescents to explore the relative role of vision.

Considering the literature discussed above, the main hypothesis of the study was that: “Across all three groups of visual functioning, the importance attached to specific domains of self-esteem will moderate the relationship between school belonging and self-esteem”.

## Method

### *Participants*

The number of participants recruited for this study was based on previous quantitative research on the school inclusion and self-esteem of adolescents with vision impairment (see Bowen, 2010; Garaigordobil & Bernarás, 2009; Lieberman, 2002; Shapiro et al. 2005, 2008). Forty-four adolescents took part in the current study, 50% of whom were female: 19 of the participants were sighted ( $M = 14.14$ ,  $SD = 0.58$ ). The remaining participants fell into two distinct groups; a group of 15 severely sight impaired (previously termed blindness) ( $M = 13.98$ ,  $SD = 0.57$ ), and 10 sight impaired (previously termed low vision) ( $M = 14.53$ ,  $SD = 0.58$ ). Seventy-two percent of the adolescents with vision impairment had congenital conditions. In addition, 50% were in mainstream education and received special educational support from Qualified Teachers of the Vision Impaired (QTVIs) and/or teaching assistants, 31.8% in mainstream education with special provision for students with SEND and 18.2% in special schools for students with SEND.

### *Materials and measures*

All participants completed the revised form of Harter’s Self-Perception Profile (2012) for adolescents which consists of the following two adolescent questionnaires: the “What I Am Like” scale which examines domain-specific and global self-esteem and the “Importance Ratings” scale which evaluates the importance attached to the statements that they completed in the first questionnaire.

The “What I Am Like” scale consists of 45 questions which are divided into nine sub-scales: scholastic competence (items 1, 10, 19, 28 and 37), social competence (items 2, 11, 20, 29, 38), athletic competence (items 3, 12, 21, 30, 39), physical appearance (items 4, 13, 22, 31, 40), job competence (items 5, 14, 23, 32, 41), romantic appeal (items 6, 15, 24, 33, 42), behavioural conduct (items 7, 16, 25, 34, 43), close friendship (items 8, 17, 26,

35, 44), and global self-worth (items 9, 18, 27, 36, 45). The first eight sub-scales address adolescents' domain-specific self-esteem and the "global worth" sub-scale addresses adolescents' global self-esteem.

The "Importance Ratings" scale consists of 16 questions which are divided in eight sub-scales of domain-specific self-esteem (scholastic competence, social competence, athletic competence, physical appearance, job competence, romantic appeal, behavioural and close friendship) and two questions are included in each sub-scale. The items of this questionnaire are scored with 4, 3, 2, and 1, where 4 presents the highest level of importance and 1 presents the lowest level of importance. Harter's Self-Perception Profile has also been used in studies which have examined the domain-specific and global self-esteem of adolescents with vision impairment (see Shapiro et al., 2005, 2008; Sherrill et al., 1990). The items of this questionnaire are scored with 4, 3, 2, and 1, where 4 presents the highest level of self-esteem and 1 presents the lowest level of self-esteem.

The following areas of domain-specific self-esteem have been examined in this study: scholastic competence, social competence, athletic competence, physical appearance, behavioural conduct and close friendship. Scholastic competence refers to children's perceived cognitive competence as applied to schoolwork, therefore the questions which belong to this domain refer to students' participation in the classroom, the feeling that they are smart, and their ability to figure out the right answers and finish their school tasks quickly. Social competence refers to the ability of students to develop and maintain social relationships with their peers. Athletic competence evaluates students' ability to succeed in sports and new outdoor games and physical appearance evaluates their perceptions about their appearance. Behavioural conduct examines their ability to behave appropriately and avoid getting into trouble and close friendship items focus on adolescents' ability to make close friends in order to have someone with whom they can share personal thoughts and secrets. Finally, global self-worth refers to adolescents' global self-esteem which is "the level of global regard that one has for the self as a person" (Harter, 2012). The area of "job competence" was excluded from all analyses since only one of the 44 participants reported having experience of a job and Harter's scales rely on experience to relate competence in each specific domain. In addition, the "romantic appeal" sub-scale showed poor internal consistency ( $\alpha = .52$ ), therefore, it was excluded from the analysis.

Participants were also asked to complete the Psychological Sense of School Membership (PSSM) scale (Goodenow, 1993a, 1993b) which examines school belonging. PSSM consists of 18 items that have been developed to examine adolescents' school belonging (e.g., I feel like a part of my school). Participants' answers were given in a Likert scale from 1 to 5, where 1 means not at all true and 5 means completely true. Five of these items are reverse coded (questions 3, 6, 9, 12 and 16). According to Goodenow (1993b), the adolescent who has a total score lower than 3.00 has a low sense of school belonging. Although this scale has been used only in one study which included adolescents with vision impairment (Jessup et al., 2017), it has been also used in many other studies which have examined sighted adolescents' school belonging (Anderman, 2003; Cheung & Hui, 2003; Liu & Lu, 2011; Sánchez, et al., 2005).

## ***Procedure***

Recruitment for the study took place through existing contacts with schools and advertising on social media (e.g., Twitter) and research websites. Information sheets and informed consent forms were given to adolescent participants, their parents and the headteachers of their school. After giving their oral and written consent to participate, the adolescents with and without vision impairment were interviewed by the first author. All participants were debriefed at the end of the study. One headteacher did not give permission for the research to be conducted at the school, therefore for this one adolescent the interview was conducted in their home. The interviews with adolescents lasted approximately 30 minutes.

This study received a favourable ethical opinion from the Research Ethics Committee of the Faculty of Business and Social Sciences at Kingston University London.

### ***Statistical analysis***

IBM SPSS Statistics 26 for Windows 10 was used in the analysis of data. Based on previous research indicating that parametric tests are highly robust to small sample sizes, Likert data and non-normal distributions (see Gaito, 1980; Norman, 2010; Pearson, 1931), the data were analysed using parametric tests. One-way ANOVAs were conducted to compare the role of vision on school belonging and self-esteem (domain-specific and global) in all three groups; please see Manitsa et al. (2023) for a detailed report of these findings. Before proceeding with the moderation analysis, Pearson's Correlation was conducted to test the associations between the predictor and moderator variables (see Tables 2, 3 and 4). The sample was stratified by severity of vision impairment (severely sight impaired, sight impaired, and sighted).

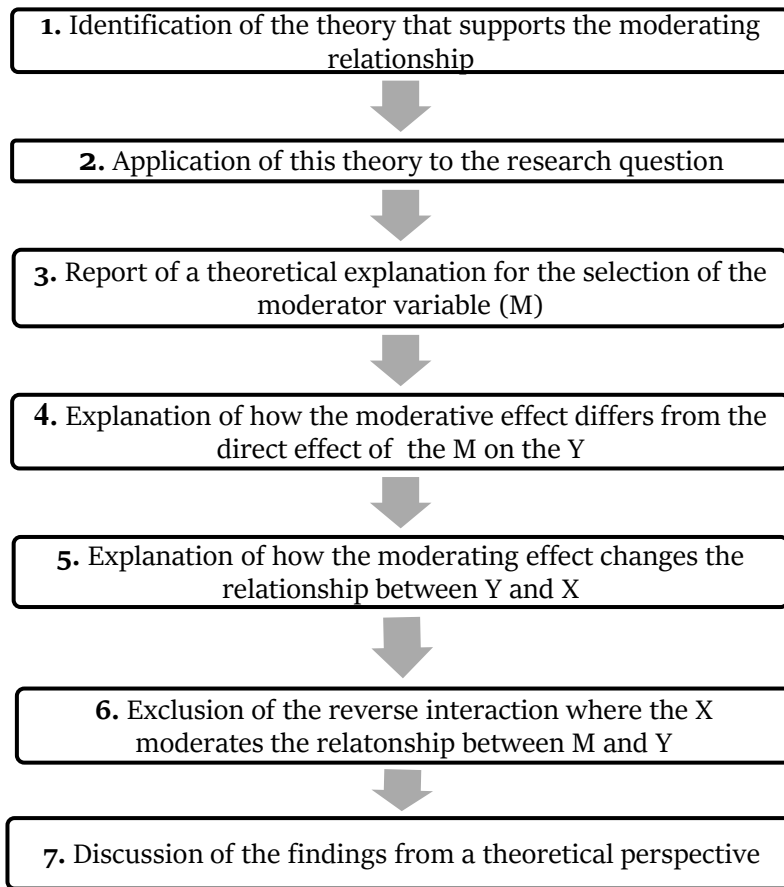
To test the hypothesis of the study a moderation analysis was conducted using PROCESS macro (Hayes, 2013). For the moderation analysis, the importance attached to each specific domain of self-esteem was examined as a moderator of the relationship between school belonging, and domain-specific and global self-esteem. School belonging and importance attached to specific domains of self-esteem were entered in the first step of the regression analysis. In the second step of the regression analysis, the interaction between school belonging and the importance attached to specific domains of self-esteem was entered. To examine the “interactive” hypothesis and the role of vision within this, the sample was stratified by severity of vision impairment (severely sight impaired, sight impaired, and sighted).

The conceptualisation of the moderating relationship that has been examined in this study is based on Andersson et al.'s (2014) seven-step framework, which was adapted for the purposes of this study and can be found below.

As Andersson et al. (2014) explained, the above steps should be adapted and modified according to the research question and the nature of each study. The theoretical framework of this study is the “interactive” hypothesis of Rosenberg (1965) which suggests that the relationship between domain-specific and global self-esteem may be moderated by the importance attached to specific domains of the self (steps 1, 2 and 3). Although previous research has focused on the relationship between domain-specific and global self-esteem, this study sought to examine whether the importance attached to specific domains of adolescent self-esteem would also moderate the relationship between school belonging and self-esteem. The focal point of this research is the social experiences of adolescents with and without vision impairment in their school environment, as well as the effect of these experiences on the socio-emotional development of these individuals, hence the relationship between importance rating and global self-esteem has not been examined (step 4). The findings of this moderation analysis are presented in the next section of the study (step 5) and are further discussed in relation to the previous literature in the “Discussion” section of this paper (step 7).

The analysis was significant at the 0.05 level. The predictor variable in this study was school belonging and the outcome variables were domain-specific (scholastic competence, social competence, close friendship, behavioural conduct, athletic competence, and physical appearance) and global self-esteem. The moderator variable of the study was the importance that adolescents with and without vision impairment attached to each area of their domain-specific self-esteem (six moderator variables in total).



**Figure 1.** *Andersson et al.'s (2014) seven-step framework*

## Results

Table 1 presents the descriptive statistics of this study and p-values for intergroup comparisons.

**Table 1.** *Means and standard deviations in domain-specific self-esteem, global self-esteem, and school belonging (Manitsa et al., 2023)*

Measure	Adolescents with severe sight impairment (N= 15)		Adolescents with sight impairment (N= 10)		Sighted adolescents (N= 19)		p
	M	SD	M	SD	M	SD	
<b>Domain specific self-esteem</b>							.228
Scholastic competence	3.25	0.49	2.82	0.61	2.87	0.65	
Social competence	3.24	0.62	2.48	0.89	3.11	0.64	
Close friendship	3.49	0.65	2.72	1.10	3.12	0.90	
Behavioural conduct	3.29	0.62	3.28	0.57	3.07	0.48	
Athletic competence	2.80	0.82	2.52	1.20	2.57	0.88	
Physical appearance	3.43	0.59	2.94	1.08	2.68	0.81	
<b>Global self-esteem</b>	3.55	0.47	3.08	1.13	3.20	0.70	.187
<b>School belonging</b>	4.27	0.57	3.58	0.77	4.17	0.57	.023

Further, Tables 2, 3 and 4 present the findings of the Pearson's Correlation analysis.

**Table 2.** Correlation analysis between school belonging and specific domains of self-esteem in adolescents with severe sight impairment (blindness)

	Scholastic competence		Social competence		Athletic competence		Physical appearance		Behavioural conduct		Close friendship	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
School Belonging	.02	.94	.25	.37	-.20	.49	.02	.93	.03	.92	.30	.28

**Table 3.** Correlation analysis between school belonging and specific domains of self-esteem in adolescents with sight impairment (low vision)

	Scholastic competence		Social competence		Athletic competence		Physical appearance		Behavioural conduct		Close friendship	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
School Belonging	.52	.12	.69	.03	.62	.06	.53	.11	.53	.11	.27	.45

**Table 4.** Correlation analysis between school belonging and specific domains of self-esteem in sighted adolescents

	Scholastic competence		Social competence		Athletic competence		Physical appearance		Behavioural conduct		Close friendship	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
School Belonging	.09	.72	-.27	.27	.02	.93	-.31	.20	.79	<.001	-.07	.78

**Hypothesis:** Across all three groups of visual functioning, the importance attached to specific domains of self-esteem will moderate the relationship between school belonging and self-esteem

The output of the moderation analysis in the PROCESS macro (Hayes, 2013) provides two types of information: firstly, the output of Tables 5 and 6 (Effect, Estimate, SE, CI, and p-values) and secondly the data we used to plot the results (Figures 2-10). As shown in Figures 2-10, the moderator variable has been divided into three categories according to the participants' scores on the "Importance Ratings" scale: low (scores 1-1.5), moderate (scores 1.5-3.5), and high (scores 3.5-4). The findings of the moderation analysis are displayed in Tables 5 and 6.

**Table 5** Moderation analysis: The relationship between school belonging and domain-specific self-esteem moderated by the importance attached to domain-specific self-esteem

Effect	Estimate	SE	95% CI		p
			LL	UL	
Adolescents with severe sight impairment (or “blindness”)					
School belonging X Importance attached to Scholastic Competence	.464	1.495	-2.828	3.756	.762
School belonging X Importance attached to Social Competence	.618	.554	-.602	1.838	.289
School belonging X Importance attached to Athletic Competence	.920	.272	.321	1.519	.006
School Belonging X Importance attached to Physical Appearance	-.455	.169	-.828	-.082	.021
School belonging X Importance attached to Behavioural Conduct	-.272	.338	-1.015	.471	.437
School belonging X Importance attached to Close Friendship	.031	.360	-.762	.824	.933
Adolescents with sight impairment (or “low vision”)					
School Belonging X Importance attached to Scholastic Competence	-.532	.655	-2.137	1.073	.448
School belonging X Importance attached to Social Competence	-.108	.197	-.589	.374	.603
School belonging X Importance attached to Athletic Competence	-.280	.238	-.862	.302	.283
School Belonging X Importance attached to Physical Appearance	-.135	.270	-.796	.526	.636
School Belonging X Importance attached to Behavioural Conduct	.117	1.470	.939	-3.483	.939
School Belonging X Importance attached to Close Friendship	.816	.326	.017	1.614	.046
Sighted adolescents					
School Belonging X Importance Attached to Scholastic Competence	1.018	.191	.611	1.426	< .001
School Belonging X Importance Attached to Social Competence	.069	.211	-.382	.520	.749
School Belonging X Importance attached to Athletic Competence	.855	.147	.541	1.168	< .001
School Belonging X Importance attached to Physical Appearance	.884	.244	.364	1.404	.003
School Belonging X Importance Attached to Behavioural Conduct	.365	.397	-.482	1.211	.373
School Belonging X Importance Attached to Close Friendship	.164	.532	-.970	1.298	.762

\*Note. DV = Domain-Specific Self-Esteem (Athletic Competence, Physical Appearance, Close Friendship, Athletic Competence, Physical Appearance, Scholastic Competence respectively)

**Table 6** Moderation analysis: The relationship between school belonging and global self-esteem moderated by the importance attached to domain-specific self-esteem

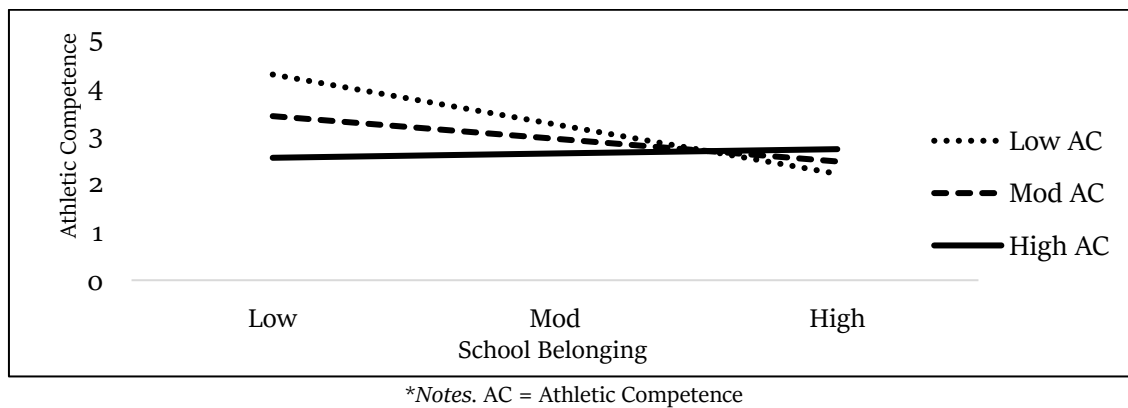
Effect	Estimate	SE	95% CI		p
			LL	UL	
Adolescents with severe sight impairment (or “blindness”)					
School belonging X Importance attached to Scholastic Competence	-3.138	.129	-.255	.315	.821
School belonging X Importance attached to Social Competence	.278	.387	-.573	1.130	.487
School belonging X Importance attached to Athletic Competence	.247	.171	.130	.623	.177
School Belonging X Importance attached to Physical Appearance	-.243	.121	-.510	.023	.070
School belonging X Importance attached to Behavioural Conduct	.248	.241	-.282	.778	.326
School belonging X Importance attached to Close Friendship	-.033	.248	-.579	.512	.896
Adolescents with sight impairment (or “low vision”)					
School Belonging X Importance attached to Scholastic Competence	-.461	.688	-2.146	1.224	.528
School belonging X Importance attached to Social Competence	.006	.224	-.542	.553	.981
School belonging X Importance attached to Athletic Competence	.050	.167	-.360	.460	.774
School Belonging X Importance attached to Physical Appearance	-.461	.688	-2.146	1.224	.528
School Belonging X Importance attached to Behavioural Conduct	-1.324	1.373	-4.688	2.039	.372
School Belonging X Importance attached to Close Friendship	-.552	.976	-2.943	1.839	.592
Sighted adolescents					
School Belonging X Importance Attached to Scholastic Competence	1.173	.328	.474	1.872	.003
School Belonging X Importance Attached to Social Competence	.300	.296	-.331	.931	.327
School Belonging X Importance attached to Athletic Competence	-.647	.263	.027	-1.208	-.086
School Belonging X Importance attached to Physical Appearance	.602	.117	.352	.851	< .001
School Belonging X Importance Attached to Behavioural Conduct	-.466	.372	-1.261	.329	.230
School Belonging X Importance Attached to Close Friendship	.319	.463	-.667	1.305	.501

\*Note. DV = Global Self-Esteem

The specific areas of self-esteem that have been found to moderate the relationship between school belonging and global self-esteem have been further analysed below.

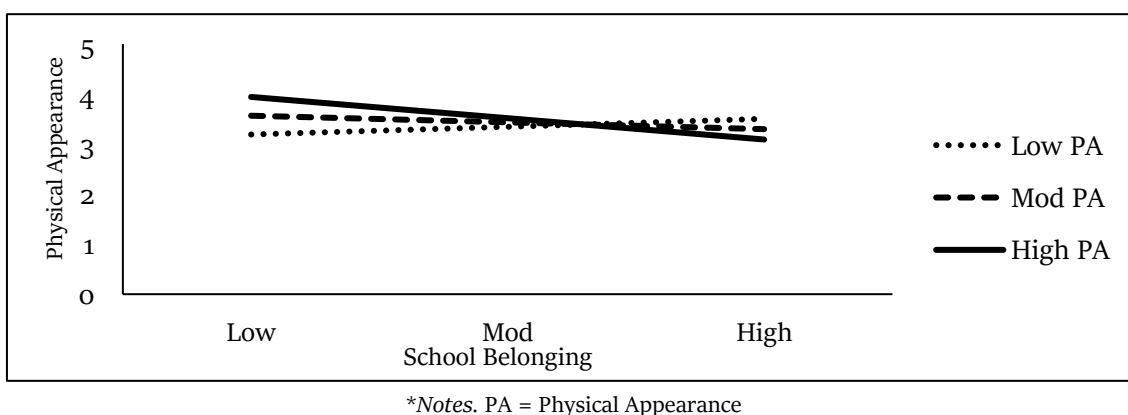
**Adolescents with severe sight impairment (previously “blindness” according to the UK classification system).** In adolescents with severe sight impairment, the importance attached to athletic competence moderated the relationship between school belonging and athletic competence (domain-specific self-esteem),  $b = .92$ , 95% CI [.32, 1.52],  $t = 3.38$ ,  $p = .006$ . As Figure 2 shows, at the low and moderate levels of the moderator (importance attached to athletic competence), there was a significant negative relationship between school belonging and athletic competence (low level:  $b = -1.80$ , 95% CI [-3.10, -.50],  $t = -3.04$ ,  $p = .011$ ; moderate level:  $b = -.82$ , 95% CI [-1.55, -.10],  $t = -2.49$ ,  $p = .030$ ). This finding suggests that adolescents with severe sight impairment who attributed low or moderate value to their ability to succeed in sports and new outdoor games, the more socially included they felt, the less satisfied they were with their athletic competence.

**Figure 2.** The moderating role of individual importance attached to athletic competence on the relationship between school belonging and athletic competence in adolescents with severe sight impairment



Further, the importance attached to physical appearance moderated the relationship between school belonging and physical appearance (domain-specific self-esteem),  $b = -.45$ , 95% CI [-.83, -.08],  $t = -2.69$ ,  $p = .021$ . As figure 3 shows, at the high level of the moderator (importance attached to physical appearance), there was a significant negative relationship between school belonging and physical appearance,  $b = -.75$ , 95% CI [-1.28, -.23],  $t = -3.17$ ,  $p = .009$ . This finding indicates that adolescents with severe sight impairment who highly valued the way they look, the more socially included they felt, the less satisfied they were with their physical appearance.

**Figure 3.** The moderating role of individual importance attached to physical appearance on the relationship between school belonging and physical appearance in adolescents with severe sight impairment

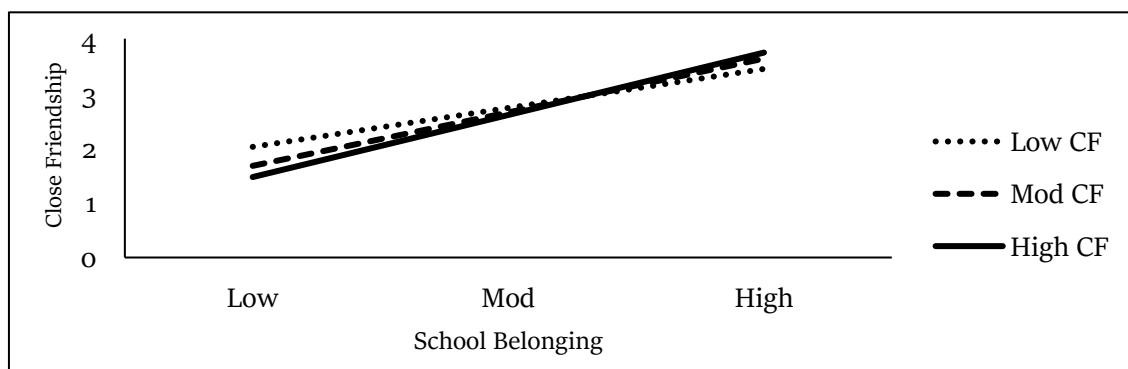




Regarding the relationship between school belonging and global self-esteem in adolescents with severe sight impairment, the importance attached to any of the other specific domains of self-esteem did not moderate the relationship between school belonging and domain-specific and global self-esteem in adolescents with severe sight impairment.

**Adolescents with sight impairment (previously “low vision” according to the UK classification system).** In adolescents with sight impairment, the importance attached to close friendship moderated the relationship between school belonging and close friendship (domain-specific self-esteem),  $b = .82$ , 95% CI [.02, 1.61],  $t = 2.50$ ,  $p < .046$ . As Figure 4 shows, at the low and moderate levels of the moderator (importance attached to close friendship), there was a significant positive relationship between school belonging and close friendship (low level:  $b = .92$ , 95% CI [.64, 1.21],  $t = 7.98$ ,  $p < .001$ ; moderate level:  $b = 1.27$ , 95% CI [1.05, 1.49],  $t = 14.01$ ,  $p < .001$ ). These findings suggest that adolescents with sight impairment who felt socially included into their school environment positively assessed their ability to make close friends regardless of the importance that they attached to it.

**Figure 4.** *The moderating role of individual importance attached to close friendship on the relationship between school belonging and close friendship in adolescents with sight impairment*

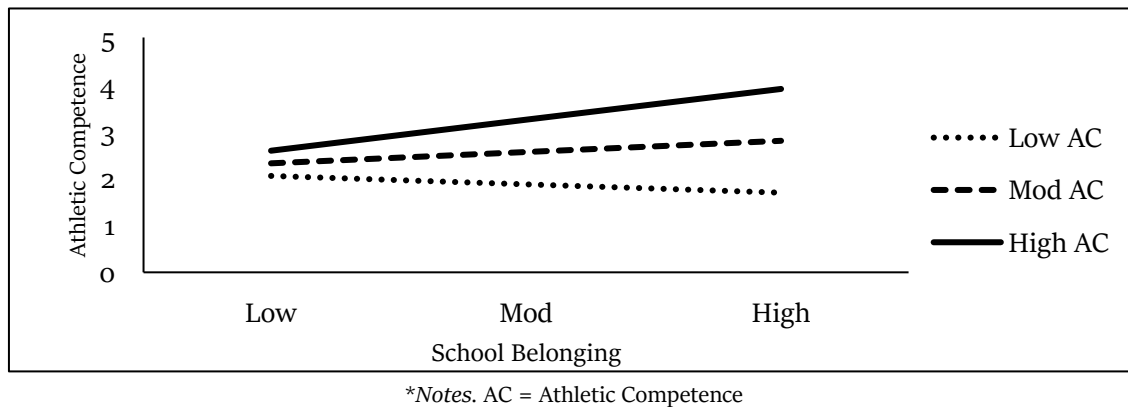


\*Notes. CF = Close Friendship

Regarding the relationship between school belonging and global self-esteem in adolescents with severe sight impairment, the importance attached to any of the other specific domains of self-esteem did not moderate the relationship between school belonging and domain-specific and global self-esteem in adolescents with sight impairment.

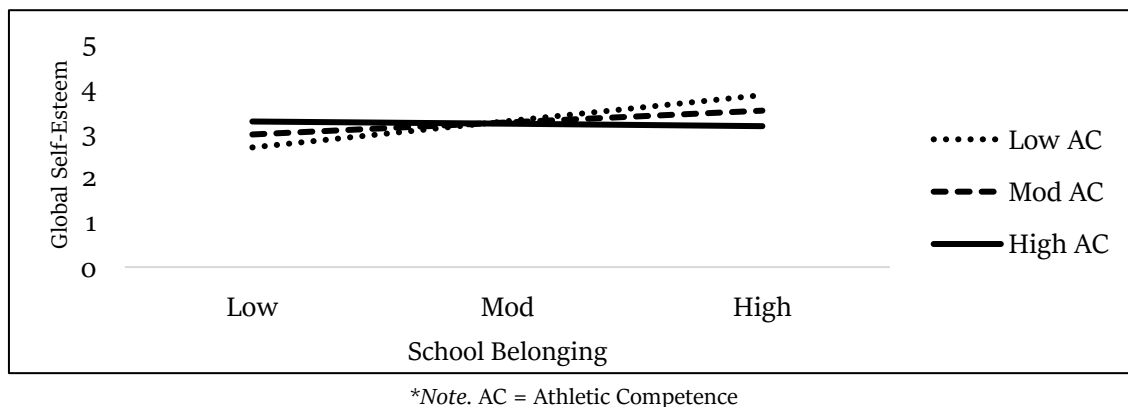
**Sighted adolescents.** In sighted adolescents, the importance attached to athletic competence moderated the relationship between school belonging and athletic competence (domain-specific self-esteem),  $b = .85$ , 95% CI [.54, 1.17],  $t = 5.81$ ,  $p < .001$ . As Figure 5 shows, at the high level of the moderator (importance attached to athletic competence), there was a significant positive relationship between school belonging and athletic competence,  $b = 1.16$ , 95% CI [.59, 1.72],  $t = 4.35$ ,  $p < .001$ . This finding suggests that sighted adolescents who highly valued their ability to succeed in sports and new outdoor games, the more socially included they felt, the more satisfied they were with their athletic competence.

**Figure 5.** *The moderating role of individual importance attached to athletic competence on the relationship between school belonging and athletic competence in sighted adolescents*



In addition, the relationship between school belonging and global self-esteem was moderated by the importance attached to athletic competence,  $b = -.65$ , 95% CI  $[-1.21, -.09]$ ,  $t = -2.46$ ,  $p = .027$ . As can be seen in Figure 6, only at the low level of the moderator, the relationship between school belonging and global self-esteem was significantly positive,  $b = 1.02$ , 95% CI  $[.33, 1.71]$ ,  $t = 3.17$ ,  $p = .006$ . This finding suggests that sighted adolescents who attributed low value to their ability to succeed in sports and new outdoor games had higher self-esteem and a stronger sense of school belonging.

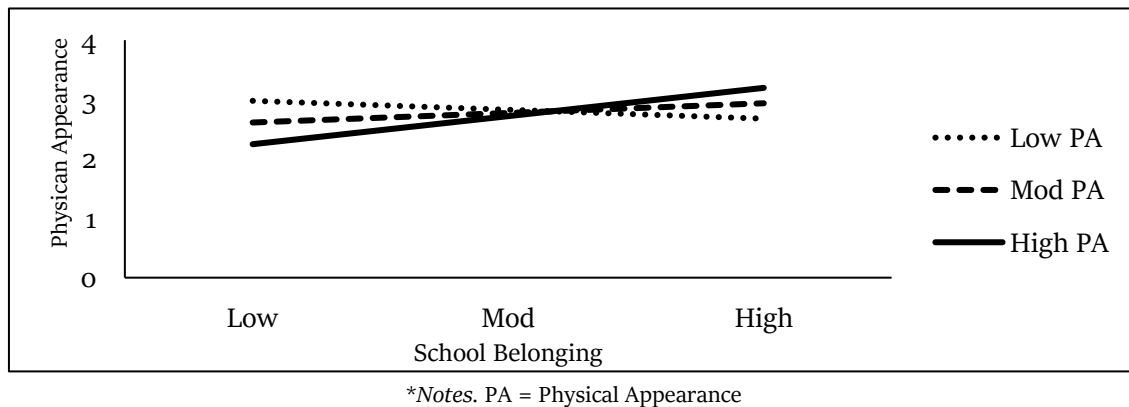
**Figure 6.** *The moderating role of individual importance attached to athletic competence on the relationship between school belonging and global self-esteem in sighted adolescents*



The importance attached to physical appearance moderated the relationship between school belonging and physical appearance (domain-specific self-esteem),  $b = .88$ , 95% CI  $[.36, 1.40]$ ,  $t = 3.62$ ,  $p < .001$ . As Figure 7 shows, at the high level of the moderator (importance attached to physical appearance), there was a significant positive relationship between school belonging and physical appearance,  $b = .83$ , 95% CI  $[.24, 1.43]$ ,  $t = 2.99$ ,  $p = .009$ . This finding suggests that sighted adolescents who highly valued the way they look, the more socially included they felt, the more satisfied they were with their physical appearance.

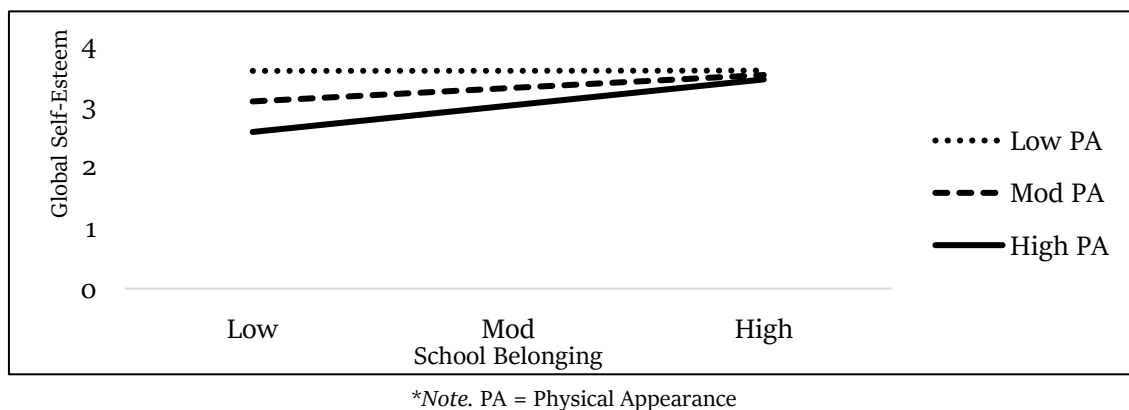


**Figure 7.** *The moderating role of individual importance attached to physical appearance on the relationship between school belonging and physical appearance in sighted adolescents*



Additionally, the relationship between school belonging and global self-esteem was moderated by the importance attached to physical appearance,  $b = .60$ , 95% CI [.35, .85],  $t = 5.13$ ,  $p < .001$ . As shown in Figure 9, only at the high and moderate levels of the moderator, the relationship between school belonging and global self-esteem was significantly positive (high level:  $b = .75$ , 95% CI [.36, 1.14],  $t = 4.12$ ,  $p < .001$ ; moderate level:  $b = .38$ , 95% CI [.05, .71],  $t = 2.45$ ,  $p = .027$ ). These findings suggest that sighted adolescents who attributed high or moderate value to the way they look had higher self-esteem and a stronger sense of school belonging.

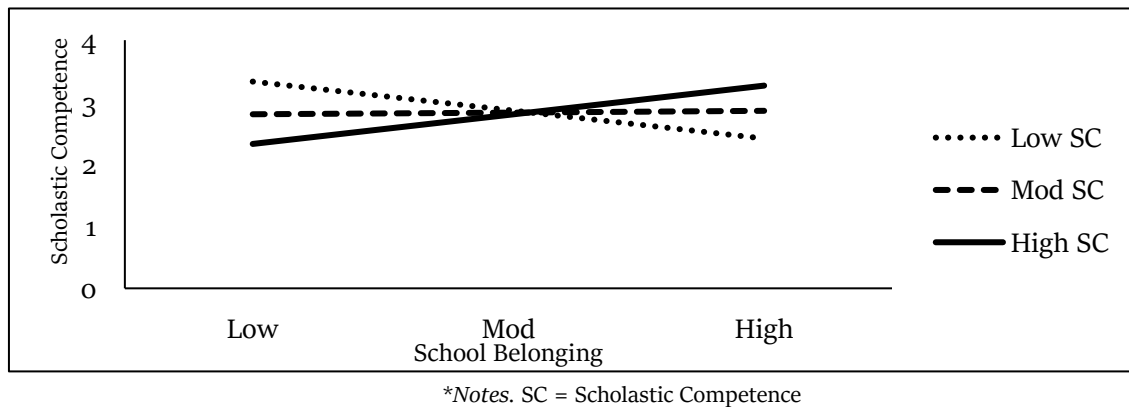
**Figure 8.** *The moderating role of individual importance attached to physical appearance on the relationship between school belonging and global self-esteem in sighted adolescents*



The importance attached to scholastic competence moderated the relationship between school belonging and scholastic competence (domain-specific self-esteem),  $b = 1.02$ , 95% CI [.61, 1.43],  $t = 5.33$ ,  $p < .001$ . As Figure 9 shows, at the high level of the moderator (importance attached to scholastic competence), there was a significant positive relationship between school belonging and scholastic competence,  $b = .83$ , 95% CI [.62, 1.03],  $t = 8.69$ ,  $p < .001$ . On the other hand, at the low level of the moderator, there was a significant negative relationship between school belonging and scholastic competence,  $b = -.81$ , 95% CI [-1.46, -.15],  $t = -2.63$ ,  $p = .019$ . These findings suggest that sighted adolescents who highly valued their ability to successfully complete their schoolwork, the more socially included they felt the more satisfied they were with their scholastic competence. On the other hand, sighted adolescents who attributed low value to their ability to successfully complete their schoolwork, the more socially included they felt, the less satisfied they were with their scholastic competence.

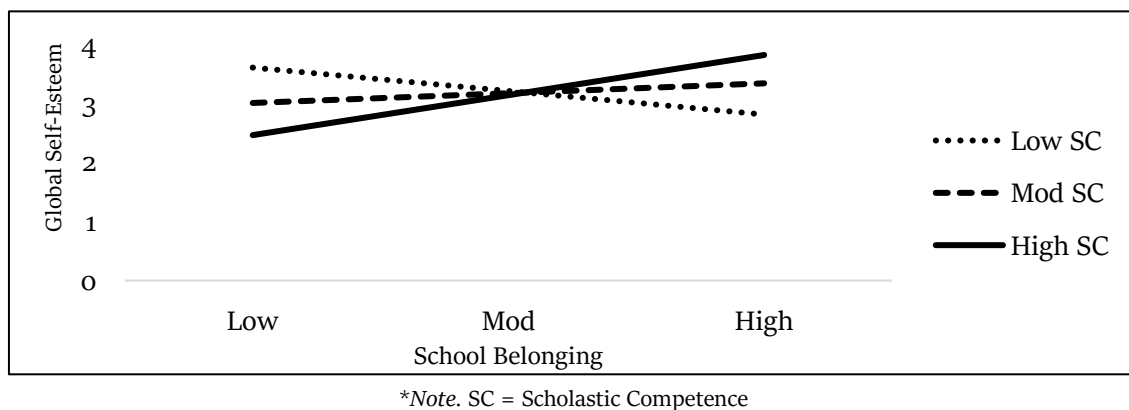


**Figure 9.** *The moderating role of individual importance attached to scholastic competence on the relationship between school belonging and scholastic competence in sighted adolescents*



Finally, the relationship between school belonging and global self-esteem was also moderated by the importance attached to scholastic competence in sighted adolescents,  $b = 1.17$ , 95% CI [.47, 1.87],  $t = 3.58$ ,  $p = .003$ . As can be seen in Figure 10, only at the high level of the moderator, the relationship between school belonging and global self-esteem was significantly positive,  $b = 1.19$ , 95% CI [.63, 1.74],  $t = 4.55$ ,  $p < .001$ . This finding suggests that sighted adolescents who attributed high value to their ability to successfully complete their schoolwork, had higher self-esteem and a stronger sense of school belonging.

**Figure 10.** *The moderating role of individual importance attached to scholastic competence on the relationship between school belonging and global self-esteem in sighted adolescents*



## Discussion

Based on previous literature which suggested that the importance attached to specific domains of self-esteem may moderate the relationship between specific-domain and global self-esteem, it was anticipated that the importance attached to specific domains of self-esteem would also moderate the relationship between school belonging and self-esteem in adolescents. This was also an exploratory study that additionally attempted to show whether levels of vision impacted this relationship. The findings of our study indicated the importance attached to specific domains of self-esteem moderates the relationship between school belonging and domain-specific and global self-esteem. Different findings also emerged related to the level of vision of the participants (with severe sight impairment, with sight impairment, sighted).

The findings of the study indicated that the relationship between school belonging, and athletic competence was moderated by the importance that adolescents with severe sight impairment (blindness) attached to their athletic competence. In particular, there was a negative relationship between school belonging and athletic competence in adolescents who attached low or moderate value to their ability to participate in athletic activities.

Although research evidence shows that the participation of students with SEND in Physical Education (PE) may increase their social skills and promote their school inclusion (Brooks et al., 2015), adolescents with vision impairment often explain that they are bullied and excluded by their peers during PE (De Schipper et al., 2017), therefore their inclusion and participation in this specific subject may negatively affect their self-esteem. Because of the negative effect that their participation in these activities may also have on their self-esteem (Shapiro et al., 2005, 2008), adolescents with severe sight impairment may prefer to focus on other aspects of their academic performance and not on athletic competence. Another possible explanation for the low or moderate value that adolescents place on their athletic performance could come from a defensive attitude that they may exhibit in this area. Given that athletic competence is emphasised strongly in Western societies, adolescents with severe sight impairment may protect their self-esteem by selectively devaluing a problematic area of functioning. Thus, instead of actively exposing themselves to the pain of failure, rejection, and criticism, students with severe sight impairment may adopt a cautious, self-protective approach (Wood & Forest, 2016).

The relationship between school belonging and athletic competence was also moderated by the importance that sighted adolescents attach to their athletic competence, but in contrast to the specific findings focused on adolescents with severe sight impairments, the analysis here revealed a positive relationship between school belonging and athletic competence in sighted adolescents who attached high value to their ability to participate in athletic activities. This finding may show that for sighted adolescents who highly value their athletic performance, their inclusion, and participation in school tasks (e.g., athletic activities) may positively affect their domain-specific self-esteem. Although the relationship between school belonging and global self-esteem was also moderated by the value that sighted adolescents give to their athletic competence, a positive relationship between school belonging and global self-esteem was found in sighted adolescents who attached low value to their ability to participate in athletic activities. Despite the positive effect that inclusion in athletic tasks may have on adolescents' domain-specific self-esteem, a similar effect may not be applied to adolescents' global self-esteem. This finding may be consistent with previous research that has shown that individual performance on specific tasks (in this case athletic tasks) is directly related to the development of self-esteem related to such tasks rather than general feelings of self-worth (Connolly & Konarski, 1994). In our study, this means that sighted adolescents' inclusion in athletic activities and the sense of belonging that they develop from their participation in these activities may positively affect the specific domain of self-esteem that relates to their athletic competence, but it does not affect the way that they generally feel about themselves (global self-esteem).

The relationship between school belonging and physical appearance was also moderated by the importance that adolescents with severe sight impairments and their sighted peers attached to the latter. There was a significant negative relationship between school belonging and physical appearance in adolescents with severe sight impairments who attached high value to the way they look. On the other hand, a significant positive relationship between school belonging and physical appearance, and a significant positive relationship between school belonging and global self-esteem were found in sighted adolescents who attached high value to their physical appearance. The negative relationship between school belonging and physical appearance in adolescents with severe sight impairment may be explained by previous research which has shown that students with vision impairment, who may feel included in their school, may also be victims of prejudice against their appearance by their teachers and peers (Thurston, 2014) and this situation may negatively affect their self-esteem. These findings can also potentially be discussed in the context of the interpersonal and the reflected appraisals models that have been analysed further in the introduction. Although appearance is central to adolescents (Abdo et al., 2023), it may be more difficult for adolescents with severe sight impairment to feel positive about their appearance because of the continuous messages they receive from their family, friends, and the media promoting high standards for appearance. In other words, reflected appraisals create a self-esteem deficit in appearance self-esteem among adolescents with severe sight impairment.

The relationship between school belonging and close friendship was also moderated by the value that adolescents with sight impairment (low vision) attached to their ability to make close friends. Regardless of the value that this group of adolescents attached to this specific ability, a significant positive relationship was found between school belonging and close friendship. This specific finding may underline the importance that inclusion in school and the development of school belonging may have on adolescents' domain-specific self-esteem, consequently it could be argued that adolescents who develop positive social relationships with their teachers and peers may also develop more positive self-esteem. This may also be consistent with previous literature that has emphasised the positive effect of school friendships on the self-esteem of children and adolescents with vision impairment, who have referred to peer rejection as one of the most harmful school experiences (see De Verdier, 2016; George & Duquette, 2006; Jessup et al., 2017; Thurston, 2014).

Further, the relationship between school belonging and scholastic competence was also moderated by the value that sighted adolescents gave to their scholastic competence and a significant positive relationship between school belonging and scholastic competence was found in adolescents who attached high value to their ability to perform well at school tasks. A significant positive relationship was also found between school belonging and global self-esteem in sighted adolescents who highly valued their scholastic competence. However, a significant negative relationship between school belonging and scholastic competence was found in sighted adolescents who attached low value to their ability to perform well at school tasks. These findings indicate that only for adolescents who highly valued their scholastic competence, their sense of inclusion in school and their participation in school activities positively affect their domain-specific and global self-esteem. On the other hand, adolescents who did not value their ability to perform well at school tasks may focus more on other aspects of their self-esteem (e.g., athletic performance). Considering that a similar relationship between school belonging and scholastic competence has not been found in adolescents with vision impairment, these findings may be inconsistent with previous literature which suggests that students with vision impairment highly value their participation in school activities (Celeste & Grum, 2010; Worth, 2013) and wish to be included in the same school activities with their sighted peers (De Verdier, 2016; Khadka et al., 2012). However, it could be argued that students with vision impairment want to participate in school activities because they positively affect their self-esteem, the findings of this study suggest that there may be other reasons why adolescents with vision impairment strive to participate in these activities (e.g., make their parents feel proud of them) and should be further investigated.

### ***Limitations and suggestions for future research***

There are some limitations to this study which should be considered. First, the exclusion of adolescents with additional needs significantly affected the number of eligible participants, and these findings may only apply to a specific population of students with vision impairment. Research data show that more than 50% of young people with vision impairment have additional SEND (Morris & Smith, 2008) and this number is significantly increasing every year (Keil, 2018), therefore, since this study focuses only on adolescents with vision impairment and no additional SEND, our access to a larger sample was limited. Considering the challenges in participant recruitment, the sample of the study may be insufficient for the analysis presented, and our findings should be interpreted with the greatest caution. Further, whilst the main hypothesis of this study suggested that the importance attached to specific domains of self-esteem will moderate the relationship between school belonging and self-esteem across all three groups, each group has been analysed separately. The moderation analysis focused on each group separately because the main purpose of this study was to examine the differences among students with severe sight impairment, students with sight impairment and their sighted peers. To conduct this moderation analysis, our three small groups of participants (severely sight impaired, sight impaired and sighted) were divided into even smaller groups according to the importance they attached to their domain-specific and global self-esteem (low, moderate, and high). Thus, future studies with a more focused sample and/or research

questions developed that do not rely on statistical analyses that requiring a large sample size should investigate the research questions of this study further. It should be noted that a formal sample size calculation prior to conducting the study taking into account factors such as effect size, desired level of statistical power, and level of significance would enhance methodological rigor and confidence in the study findings.

Second, the age range of the participants who participated in this study was wide (11-18 years old). Adolescence is divided into three stages (early, middle, and later adolescence) and differences have been recorded in the socio-emotional development of individuals among these three stages, therefore these differences may affect the development of self-esteem in adolescents with and without vision impairment. For example, previous research has shown that susceptibility to peer influence is higher during early adolescence than during later adolescence (Furman & Buhrmester, 1992). Longitudinal studies should be prioritised in future research to examine the socio-emotional development of students with vision impairment; the design of longitudinal studies that examine the socio-emotional development (e.g., self-esteem) of adolescents with vision impairment will give researchers the opportunity to record any differences between the different stages of adolescence.

Third, the type of school (mainstream or special) that students attend may also have a significant impact on adolescents' school belonging and feelings of self-esteem. Previous studies on the impact of school setting on the inclusion of students with SEND, such as vision impairment, came to contradictory conclusions (Erol & Ergun, 2013; Kasomo, 2012; Worth, 2013). Therefore, more research focused on the effect of each school type on the socio-emotional development of adolescents with vision impairment should be conducted.

Fourth, sociocultural and educational differences may play a significant role in adolescents' school belonging and self-esteem; this study was conducted in the United Kingdom and as a result, these findings may not be generalisable to other countries. Comparative studies should be conducted among different countries to investigate and compare the school belonging and self-esteem of adolescents with and without vision impairment who live there. The focus of this study was on the relationship between school belonging and self-esteem, however, other factors, which have not been included here, may also have a significant impact on the development of self-esteem in adolescents with and without vision impairment. For instance, research evidence indicates that parental support may play an important role in the development of self-esteem in adolescents with vision impairment (Datta & Talukdar, 2016; Kef & Dekovic, 2004; Lifshitz et al., 2007).

Fifth, considering the limited sample size of this study, additional demographic characteristics that might have had an effect on our findings have not been included in the data analysis. In particular, previous research suggests that gender differences significantly affect the school inclusion of students with SEND, such as autism, with female participants feeling much less included compared to males (Morán et al., 2019). Therefore, although the main focus of this study is specifically on the school environment, future research should be designed to also analyse other external factors that may play a key role in the school inclusion of students with vision impairments.

## **Conclusion**

Despite its limitations, the findings of this study provide preliminary insights into how the extent of vision affects the school belonging and self-esteem of adolescents with vision impairment and how the importance attached to specific domains of self-esteem alters the influence that school belonging has on self-esteem. The current research also extends previous findings on the association between school belonging and well-being, suggesting that self-esteem may be predicted based on the feeling of being included in school. Our findings suggest that adolescents' sense of belonging in school may influence the way they feel about themselves and their abilities, therefore the importance of promoting adolescents' school belonging should be emphasised, and the factors that positively affect it should be further investigated. Based on these findings and previous research which has highlighted the positive effect of high self-esteem on individuals' social and daily lives (Chen et al., 2015), it could be argued that

school belonging may be a critical factor in high overall quality of life. Promoting school belonging and feelings of acceptance in school may lead to future adults that will develop positive feelings of themselves and their role in society; the feelings of belonging in school may result in higher self-esteem that will lead to the development of positive adult relationships (Boden et al., 2008) and successful working experiences (Hui et al., 2018).

The conceptual contribution of this research also pertained to adding and linking its current findings to the conceptual theory of self-esteem. Considering previous literature which has examined the relationship between school inclusion and self-esteem, this study sought to examine whether similar findings would apply to individuals with vision impairment by providing new insights into the socio-emotional development of this population. The “interactive” hypothesis of Rosenberg et al. (1995), stating that the effect of domain-specific self-esteem on global self-esteem would be moderated by the importance that individuals attach to the former, has been re-visited in this study and examined in a student population with vision impairment.

This study is also one of the first known attempts to examine differences in school inclusion and socio-emotional development between students with severe sight impairment and students with sight impairment. Previous research has highlighted the adverse consequences of one-size-fits-all approach to education due to a lack of attention to clinical factors that may significantly influence academic performance (Weis et al., 2016). Therefore, this study should be considered one of the first to open this research area and to focus on the specific characteristics of students with severe sight impairment and sight impairment, treating them as two distinct populations with different socio-emotional and learning needs and promoting the development of person-centred approaches in educational settings. Considering the innovative nature of this study which sought to examine the differences in the self-esteem among these three groups of adolescents, its findings can be used by professionals who work closely with students with vision impairment (e.g., teachers, special educators, and rehabilitation specialists) to plan psychosocial interventions that will promote their self-esteem. These findings can potentially initiate the development of psychosocial interventions to promote the areas of self-esteem that adolescents with severe sight impairment (e.g., physical appearance) and sight impairment (e.g., ability to develop close friendships) value the most. Our findings can also be used by parents and carers who wish to support their children with vision impairment. Previous research has highlighted the positive role of parental support in the academic and socio-emotional development of students with vision impairment (George & Duquette, 2006). It is important to note that future researchers and practitioners who may wish to use our findings for their research and practice should make very careful assumptions considering the previously discussed issues with our sample size. Finally, although this was the first study to examine the “interactive” hypothesis in a student population with vision impairment, it lays the groundwork for future research in this area, highlighting the differences among the different areas of self-esteem in adolescents with and without vision impairment.

## Acknowledgements

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Διερεύνηση της «διαδραστικής» υπόθεσης σε εφήβους με αναπηρία όρασης: Η σχέση μεταξύ της αίσθησης του ανήκειν στο σχολείο και της αυτοεκτίμησης

Ιφιγένεια ΜΑΝΙΤΣΑ<sup>1</sup>, Fiona BARLOW-BROWN<sup>2</sup>

<sup>1</sup>School of Psychology and School of Education, University of Birmingham

<sup>2</sup>Department of Psychology, Kingston University London

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ	ΠΕΡΙΛΗΨΗ
Σχολική Ψυχολογία Κοινωνική Ψυχολογία Διαδραστική Υπόθεση Αίσθηση του Ανήκειν στο Σχολείο Αυτοεκτίμηση Ειδικές Εκπαιδευτικές Ανάγκες και Αναπηρίες Εφηβική Ηλικία	Σύμφωνα με τη «διαδραστική» υπόθεση, η σφαιρική αυτοεκτίμηση είναι το αποτέλεσμα της αλληλεπίδρασης μεταξύ της αυτοεκτίμησης που αναπτύσσουν τα άτομα για συγκεκριμένες ικανότητες και δεξιότητές τους και της σημασίας που αποδίδουν στις συγκεκριμένες ικανότητες και δεξιότητες. Η συγκεκριμένη μελέτη είναι η πρώτη γνωστή προσπάθεια εξέτασης της «διαδραστικής» υπόθεσης σε εφήβους με προβλήματα όρασης, εστιάζοντας στην επίδραση του αισθήματος του ανήκειν στο σχολικό περιβάλλον στην αυτοεκτίμηση. Είκοσι πέντε έφηβοι με προβλήματα όρασης και 19 βλέποντες έφηβοι, ηλικίας 12-18 ετών, που φοιτούσαν σε γενικά και ειδικά σχολεία, συμμετείχαν σε αυτή τη μελέτη. Δύο ομάδες εφήβων με προβλήματα όρασης συμμετείχαν σύμφωνα με την οπτική τους οξύτητα: έφηβοι με σοβαρή οπτική αναπηρία (προηγουμένως «τύφλωση» σύμφωνα με το σύστημα ταξινόμησης του Ηνωμένου Βασιλείου) και έφηβοι με προβλήματα όρασης (προηγουμένως «χαμηλή όραση» σύμφωνα με την ταξινόμηση του Ηνωμένου Βασιλείου Σύστημα). Όλοι οι συμμετέχοντες συμπλήρωσαν το αναθεωρημένο ερωτηματολόγιο του προφύλ αυτοαντίληψης της Harter (2012) και της κλίμακας Psychological Sense of School Membership (PSSM) (Goodenow, 1993a, 1993b). Τα ευρήματα της μελέτης επιβεβαίωσαν την υπόθεσή της και έδειξαν ότι η σημασία που αποδίδεται σε συγκεκριμένους τομείς της αυτοεκτίμησης μετριάζει τη σχέση μεταξύ του αισθήματος του ανήκειν στο σχολικό περιβάλλον και της αυτοεκτίμησης σε εφήβους με και χωρίς διαταραχή όρασης. Αυτή η μελέτη θα μπορούσε να θεωρηθεί η πρώτη προσπάθεια να ελεγχθεί η σχέση μεταξύ του αισθήματος του ανήκειν στο σχολικό περιβάλλον και της αυτοεκτίμησης σε μαθητές τύφλωση και μαθητές με προβλήματα όρασης, αντιμετωπίζοντάς τους ως δύο διαφορετικούς μαθητικούς πληθυσμούς με διαφορετικές κοινωνικές και συναισθηματικές ανάγκες. Τα ευρήματά μας μπορούν να χρησιμοποιηθούν από επαγγελματίες που δουλεύουν με μαθητές με προβλήματα όρασης (π.χ. εκπαιδευτικούς και κοινωνικούς λειτουργούς) για την ανάπτυξη εκπαιδευτικών παρεμβάσεων που θα προάγουν την κοινωνική και συναισθηματική ανάπτυξη και αυτοεκτίμησή τους.
ΣΤΟΙΧΕΙΑ ΕΠΙΚΟΙΝΩΝΙΑΣ	
Ιφιγένεια Μανίτσα School of Psychology and School of Education, University of Birmingham 52 Pritchatts Rd, Birmingham B15 2TT <a href="mailto:i.manitsa@bham.ac.uk">i.manitsa@bham.ac.uk</a>	