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Emotional and social integration and the big-fish-little-pond effect among students with and without disabilities☆

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ABSTRACT

Three studies examined the generalizability and moderators of the big-fish-little-pond effect (BFLPE), i.e., the influence of class-average achievement on students' academic self-concept (ASC), among ten-year-old students with and without intellectual disability in Poland. Study 1, conducted on a representative sample of ten-year-olds ($N = 4252$), used a new, short scale to measure ASC and showed that ASC was positively associated with academic achievement but negatively associated with class-average achievement: the BFLPE. The second study ($N = 5276$) replicated the BFLPE and showed that the effect was stronger in pupils who were well integrated into their school (high emotional integration) but weakly integrated with their peers (low social integration). The third study replicated the BFLPE, and its moderation by emotional and social integration, in students with mild intellectual disability ($N = 605$) attending segregated (special) or non-segregated (integrative and regular) school.

1. Introduction

It is difficult to overestimate the importance of social comparison in the school context. Students usually define their abilities by comparing themselves to their classmates (Marsh & Parker, 1984) or by comparing their functioning in one academic domain to other domains (Chiu, 2012). Academic self-concept (ASC), which is defined as students' perception of their school competence, plays a crucial role in accounting for the level at which students function in school. Contemporary educational psychology analyzes factors that influence ASC and the relationship between ASC and academic achievement (Huang, 2011; Parker, Marsh, Lüdtke, & Trautwein, 2013).

In this article we focus on the Big-Fish-Little-Pond Effect (BFLPE) — a robust effect in educational psychology (Seaton, Marsh, & Craven, 2009), showing that students' ASC is positively associated with their school achievement, but negatively influenced by their peers' achievement. In the studies reported here we aimed to replicate the BFLPE in under-researched groups, namely elementary school students and students with mild intellectual disability (MID), and to investigate potential moderators of the BFLPE. These studies try to make four distinct contributions to the literature. First, by assessing the BFLPE in students without and with MID we test the generalizability of the BFLPE. Second, because we investigate the BFLPE in both segregated and non-segregated schools we are able to assess whether the BFLPE was moderated by the type of school. Third, we examine general, rather than domain-specific ASC; this decision is driven by the organization of the curriculum and school system in Poland, described below, and the developmental characteristics of younger students. Finally we investigate the BFLPE in elementary school students, whilst the majority of contemporary research on ASC and the BFLPE is conducted on older students, mainly 15-year-olds participating in the Program for International Student Assessment (PISA; e.g., Marsh & Hau, 2003).

ASC plays an important, yet complex role in school functioning. It is widely accepted that a positive ASC is caused by learning successes; but it also has important regulatory functions, resulting in higher academic achievement. Meta-analyses (Möller, Pohlmann, Köller, & Marsh, 2009) showed consistent and robust associations between ASC and achievement in specific domains (*r*s between .49 and .61). It should be noted however, that the results are less clear in the case of students with MID. Early studies of students with learning disability (LD) found no association between ASC and achievement (Leviton & Kiraly, 1975), or even a negative association between perceived cognitive competence and academic achievement (Huck, Kemp, & Carter, 2010). These more ambiguous findings suggest that the association between ASC and academic achievement may be subject to moderation. There are at least four potential moderators of particular interest: (a) the metacognitive deficits of students with MID: it seems likely that these limit their ability to assess their competence accurately; (b) over-estimation of praise —

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mainly given by parents and teachers — on the part of students with the MID; (c) the frequently observed conviction among students with MID that their low academic achievement is the result of lack of effort and finally (d) the disruptive behavior of students with MID (Núñez, González-Pienda, González-Pumariega, Roces, Alvarez, & González, 2005). Previous studies indicated that lower cognitive functioning, in particular, may impair self-evaluation of abilities (Montague & van Garderen, 2003).

1.1. Social factors influencing ASC

Educational psychology usually explains ASC in terms of two components of social comparison theory, contrast effects and assimilation effects (Dai & Rinn, 2008). Although both perspectives assume that ASC development is a social process they offer different accounts of the mechanisms involved. Proponents of the BFLPE (Marsh & Parker, 1984) assume that students develop their ASC through social comparisons with a reference group composed of their classmates; this account predicts that placing good students in an academically selective school or class will decrease their ASC and that placing students with a disability in an inclusive class will have a similar effect. Assimilation effects operate in the opposite direction to contrast effects. The most widely recognized assimilation effect is known as the Basking-In-Reflected-Glory Effect (BIRGE; Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976). The BIRGE assumes that ASC, rather than being based on comparison of one's own achievements with those of other students, is derived from the status of one's school or class and thus on between-school rather than within-school comparisons (Trautwein, Ludtke, Marsh, & Nagy, 2009). BIRGE-based accounts of ASC are therefore conceptually closer to theories of labeling (Marsh & Craven, 2002) than to social comparison theory; the existence of a BIRGE implies that poor students in prestigious institutions enjoy higher ASC thanks to identification with the institution they attend. So far there is more evidence to support the existence of a BFLPE than a BIRGE in school contexts, although these two effects may — and often do — coexist. One can also view a BFLPE as the net effect of contrast and assimilation processes in the classroom. Several studies (Marsh, Kong, & Hau, 2000; Trautwein, Ludtke, Marsh, & Nagy, 2009) have shown that contrast effects are stronger than assimilation effects in the school context.

1.2. The BFLPE in students with MID

Studies of students with disabilities usually confirm the BFLPE, showing that students with MID educated in more homogeneous classroom environments hold higher ASCs than their peers in mixed classrooms (Marsh, Tracey, & Craven, 2006; Rheinberg & Enstrup, 1977; Tracey, Marsh, & Craven, 2003), and that the ASC of students with disabilities tends to decrease when they are transferred from special classes to integrated classes (Marsh & Johnston, 1993) whereas placing them in special schools improves their ASC (Boersma, Chapman, & Battle, 1979). A meta-analysis of the ASC of students with LD placed in regular, partly integrated, and special classes was also consistent with the BFLPE (Chapman, 1988). Although students with LD have lower ASCs than students without LD (Vaughn, Elbaum, & Shumm, 1996), their ASC is moderated by the type of educational institution they attend; students attending special schools have higher ASCs than students in other forms of education (Bear, Minke, & Manning, 2002). There are however also findings which run counter to the BFLPE; for instance, students with Down's syndrome who were educated in inclusive classrooms have been shown to have higher ASCs than their peers in special classes (Begley, 1999) and attending mainstream school does not decrease the ASC of students with intellectual disabilities (Cunningham & Glenn, 2004). Similarly, a more recent study (Huck, Kemp, & Carter, 2010) found that students with intellectual disabilities had relatively high ASCs. Hence, taken together these findings suggest that further research in the processes involved in ASC formation and the factors influencing the level of ASC is warranted. There is a particular need for more research on representative samples of students with intellectual disabilities who are being educated in more or less integrated schools; this would enable investigation of potential moderators of the BFLPE.

1.3. Moderators of the BFLPE

The BFLPE is robust and considered to be common across cultures, countries, and age groups (Nagengast & Marsh, 2012). Analysis of PISA data indicated that school-average achievement is negatively associated with ASC in the whole sample ($B = -0.49$) and in 38 of the 41 countries included in the overall analysis (Seaton, Marsh, & Craven, 2009). This generalizability implies that research on the BFLPE should focus on investigation of potential moderators, rather than further simple replications of the pure effect. Several moderators of the BFLPE, at both individual and social levels (Marsh, Trautwein, Lüdtke, & Köller, 2008; Seaton, Marsh, Yueng, & Craven, 2011) have been uncovered, but thus far the observed moderation effects have tended to be weak. Although it has been demonstrated that some individual characteristics may moderate the BFLPE — e.g., a study of relationships between personality factors and BFLPE showed that neuroticism strengthens the BFLPE, whereas narcissism decreases it (Jonkmann, Becker, Marsh, Lüdtke, & Trautwein, 2012) — it is considered much more promising theoretically to investigate school and classroom characteristics which may moderate the BFLPE (Liem, Marsh, Martin, McInerney, & Yeung, 2013). In the studies reported here we examined the extent to which students' emotional integration into their school and their social integration with peers moderated the BFLPE.

Emotional integration into one's school, defined as the student's sense of well-being in school (Ventz, Zubriggen, & Eckart, 2014), is conceptually close to the more established construct of school emotional engagement (Fredricks, Blumenfeld, & Paris, 2004). Students' level of emotional integration is manifested in their affective responses in the classroom, e.g., joy, sorrow or anxiety. Positive well-being at school and a liking for school may be based on the student's experiences of school (e.g., previous academic successes, good relationships with peers and teachers), or the characteristics of the institution (e.g., an interesting curriculum); however, none of these factors should be confused with school emotional engagement. School emotional engagement is defined as students' general attitude towards their school and usually is not differentiated into domains and spheres of activity (Fredricks, Blumenfeld, & Paris, 2004). It is therefore recommended that school emotional engagement should be measured using rather general instruments which do not consider specific spheres of school life, student's interests or student's values (Fredricks, Blumenfeld, & Paris, 2004).

The concept of social integration has a long theoretical tradition, especially within special education (Boutot & Bryant, 2005), although it has also been used in general education (Rubin, 2012) and educational psychology (Wölfer, Bull, & Scheithauer, 2012). In the context of student life, the term 'social integration' may refer to participation in school life — for instance interactions with peers and school personnel and involvement with student organizations (Hurtado & Carter, 1997) — or to relationships with peers, friendships and social acceptance (Stinson & Antia, 1999). The latter, more specific meaning, according to which the extent of social integration is measured primarily in terms of informal peer relationships, is more commonly used in educational psychology and this is the sense in which the term is used in this paper.

School satisfaction has three important components, emotional integration into the school, social integration with one's peers and academic achievement, which influence students' self-images and self-esteem (Voelkl, 1997). Usually academic achievement is positively correlated with emotional engagement with school (Fredricks, Blumenfeld, & Paris, 2004; Gillen-O'Neel & Fuligni, 2013) and peer relationships (Pietarinen, Soini, & Pyhältö, 2014): a pattern suggesting that students