

# Academic self-concepts in adolescence: Relations with achievement and ability grouping in schools

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## Abstract

The effects of ability grouping in schools on students' self-concept were examined in a sample of 23 secondary schools with a range of structured ability groupings. Measures of general self-concept, academic self-concept, and achievement were collected from over 1600 students aged 14–15 years and again two years later. Students' academic self-concept, but not their general self-concept, was related to the extent of ability grouping in the school attended. Subject-specific facets of academic self-concept were not related to the number of years of ability grouping students had experienced in English, mathematics and science; however, they were related to students' position in the grouping hierarchy, with students in high-ability groups having significantly higher self-concepts in all three subjects than students in low-ability groups. Students' intentions to learn in future were more strongly affected by self-concept than by achievement.

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## 1. Introduction

Students' self-perceptions form an important part of their adjustment during childhood and adolescence. Academic self-concepts represent students' perceptions of their competence, interest and enjoyment of subjects in school. According to multi-dimensional models of self-concept, academic self-concept is one of several different facets of the self that contribute to an individual's general self-concept, together with social, emotional and physical self-concepts (Byrne & Shavelson, 1986; Marsh, 2005; Marsh, Byrne, & Shavelson, 1988). Hierarchical, multi-dimensional models make an important distinction between general self-concept, which refers to an individual's global self-perceptions, and academic facets of self-concept, which refer to an individual's perceptions of their academic competence.

Self-concept may be differentiated from self-esteem, although the terms have been used interchangeably. Self-concept is defined broadly to include cognitive, affective and behavioural aspects whereas self-esteem refers to a smaller, evaluative component of an individual's self-perception (Byrne, 1988, 1996). Self-esteem is considered to be «an individual's positive or negative attitude toward the self as a totality» (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995, p. 141) and as such has cognitive and affective components. Conceptually, self-esteem is closely related to self-worth, so people with high self-esteem see themselves as having worth, whereas people of low self-esteem may be dissatisfied with themselves.

Academic self-concept is related to achievement during the secondary phase of education (Hattie, 1992; Ireson, Hallam, & Plewis, 2001; Marsh, Byrne, & Yeung, 1999), whereas relationships between general self-concept and academic

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achievement are weak (Byrne, 1988; Hansford & Hattie, 1982). This is consistent with a hierarchical, multi-dimensional model of self-concept, as several facets of self-concept contribute to an individual's general self-concept. There is support for reciprocal effects between self-concept and attainment with each affecting the other over time (Guay, Marsh, & Boivin, 2003; Hattie, 1992; Marsh et al., 1999; Skaalvik & Hagtvet, 1990).

It is argued that academic self-concept is formed through processes of social comparison, which come into play as students compare their ability with those of others in their frame of reference, the 'Big-Fish-Little-Pond Effect' (Marsh & Parker, 1984). An analysis in 26 countries found that students in selective schools with high average achievement tend to have lower academic self-concepts than students in non-selective schools (Marsh & Hau, 2003). Students also compare themselves with others in their class (Chapman & Tunmer, 1997; Craven, Marsh, & Print, 2000; Kulik & Kulik, 1982). In schools with streaming, where students are placed into classes according to ability and remain in those classes for most subjects, the class provides a stronger frame of reference than the school (Wong & Watkins, 2001).

### 1.1. Ability grouping in school

Evidence on the effects of ability grouping in school is not always consistent with social comparison theory (Gamoran & Berends, 1987; Lacey, 1974; Oakes, 1985). Oakes (1985) found that for students in low-ability groups the self-concept becomes more negative as they progress through school, a view supported by Hallam and Deathe (2002). These conflicting findings indicate that further research is needed to clarify relationships between ability grouping in schools and students' self-perceptions.

When considering the effects of ability grouping within schools, it is important to note that there is a considerable variety of structured grouping patterns in schools in different countries. In many US high schools, students are assigned to different tracks and this affects the courses they take. In England and in some other European countries there is no comparable system of tracking, and all students in state maintained schools follow the same national curriculum. The most common form of ability grouping in England is *setting* (regrouping) in which students are grouped on the basis of their attainment in particular subjects, such that an individual student could be in high-ability groups (sets) for some curriculum subjects and lower ability groups (sets) for others.

To date, there is limited evidence of the effects on self-concepts of the extent of ability grouping in schools as a whole. Ireson et al. (2001) found that academic self-concept and general self-concept were more positive in schools with moderate levels of ability grouping, as opposed to schools with higher levels. The effects of setting on subject-specific facets of self-concept were mixed. In English, setting was associated with lower self-concepts of students in high-ability groups and with higher self-concept of students in low-ability groups, consistent with social comparison theory. In mathematics and science, academic (school) self-concept was unaffected by setting. It appears, therefore, that the effects of ability grouping may vary from one subject to another and that different facets of self-concept are sensitive to different aspects of ability grouping in the school as a whole and in specific subjects.

### 1.2. Gender differences in self-concept

Gender differences in academic and other facets of self-concept have been reported in some studies, with girls and boys of secondary school age having different beliefs about their competence in different activities (Eccles, Wigfield, & Schiefele, 1998; Ireson et al., 2001; Marsh, 1989; Wigfield, Battle, Keller, & Eccles, 2001). General self-concepts may be similar, yet, according to multi-dimensional models, they may be composed from different profiles, which are frequently related to stereotypically masculine or feminine facets of self-concept.

Course choice may be influenced by self-perceptions, such that students with low academic self-concepts are less likely to take more advanced courses when they have a choice (Marsh & Yeung, 1997). This suggests that, in addition to achievement, students' self-perceptions influence the choices they make, which in turn affect their future education and careers.

### 1.3. Aim of the present study – Hypotheses

As this brief review indicates evidence on the relationships between ability grouping, self-concept, gender and achievement is not entirely consistent. Moreover, ability grouping has generally been treated as a unitary variable and there have been very few studies investigating how much ability grouping is required to produce effects. The aim of this study, therefore, was to estimate the effects of ability grouping on students' general self-concept and academic facets of self-concept. It achieved this in two ways: first, by estimating the effects of ability grouping in the school as a whole on students' general self-concept and academic (school) self-concept and, second, by estimating the effects of ability grouping in three subjects on subject-specific facets of self-concept.

The English education system provides a good context for this research, due to the diversity of ability grouping practices employed in secondary schools. Schools have control over the extent of ability grouping as they determine the number of subjects that are taught in sets and the year groups in which setting is introduced. Some secondary schools introduce setting in most subjects in the first year whereas others delay setting until much later. This variety of arrangements offers a natural laboratory in

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