

Comparison of Class VII and VIII Students' Academic Self-Concept: Insights from Sindh Province of Pakistan

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Abstract

With the realization that students' self-concept has a major influence on their academic achievement, the development of students' positive self-concept has been receiving an increasing attention. This study was conducted to explore the self-concept of students of two different classes (Class 7 and 8) in three different subjects in Sindh context of Pakistan. The instrument used was a rating scale developed to measure the self-concept of students under three domains (science, mathematics and other subjects). The collected data were analyzed using Kolmogorov-Smirnov test to explore the normality of score. Then, through descriptive analysis, the mean scores of each class in each subject were computed followed by independent t-test and Mann-Whitney test. The results showed that, on average, class 8 students hold higher self-concept, the significance being high in mathematics and science. The difference in their self-concept across three different domains are presented and discussed with their future implications.

Keywords: *Self-concept, Sindh, Academic, Developing context*

Introduction

One of the major goals of education is to develop self-esteem of students which, in turn, depends on their self-concept or their perceptions about self in the academic, social and physical dimensions (Baudson et al., 2016). Academic self-concept of students is given greater attention with the realization that this domain and student academic achievements are reciprocally related and mutually reinforcing (Marsh & Martin, 2011). Self-concept is also considered to be a predictor of both academic achievement and academic options (Marsh & Yeung, 1997; Nagengast et al., 2011). Some authors, therefore, give even more importance to learners' self-concept than specialized skills as the later get outdated over time (Marsh et al., 2017).

Student's self-concept is mainly formed by social comparison, a frame of reference which a student uses to compare himself or herself with other students and groups (Marsh et al., 2000). Literature also reports a variety of other factors that shape or reshape the self-concept of students. School environment mainly shaped by the relationship between teachers and students is

found to be the most influential factor in developing students' self-concept (McFarland et al., 2016).

Studies suggest that a person has divergent self-concept for each academic domain and, therefore, self-concept of individuals vary across contexts and cultures (Marsh & Hau, 2004). Consequently, more studies on self-concept of students across cultures have been suggested to examine how cultural differences influence the development and formation of self-concept (Baudson et al., 2016). Moreover, the early adolescent years have been identified as a critical turning point for many youth when their self-concept constantly remains in flux (Ellis, Marsh, Craven, 2005). Thus, to understand how students' self-concept varies across context with a focus on early adolescent years, this study explores the self-concept of students at middle level in an urban city of Pakistan. It specifically investigates the difference of self-concept between the students of the two different classes and seeks how the self-concept of students varies from class to class. The findings develop an understanding of how different or same is the self-concept of students in this region when they move from one class to another.

Academic Self-concept

Self-concept is viewed as an individual's perception of himself or herself formed through experience (Marsh et al., 2017). Labenne and Greene (1969) believe that, "self-concept is the person's total appraisal of his appearance, background and origin, abilities and resources, attitudes and feelings which culminate as a directing force in behavior" (p.10). In this sense, an individual has a set view of who he/she is. Such perception of an individual is shaped by his/her interaction with outer world and how do other people think and say about him or her. Our self-concept is higher if the people think and say well about us and vice versa (Purkey & Novak, 1996).

Generally, self-concept consists of three major dimensions, namely, academic, social and physical. Academic self-concept is about one's abilities and competencies in various academic domains such as mathematics and language (Marsh, 1990). Literature shows that students' self-concept works as either facilitating or impeding factor in their academic achievements. According to Githua & Mwangi (2003), "learners' perception of their ability in an academic subject is a critical goal in itself and a means of other desirable outcomes in education" (p.490). Studies suggest that a positive academic self-concept has a positive influence on achievement-related behaviors of students such as giving more time for studies and completing tasks on time (Trautwein et al., 2009). In this connection, Marsh, Hau & Kong (2002) discuss three models of academic self-concept and achievement. The first model is self enhancement model where high self-concept leads to high achievement. On the contrary, the second model i.e. the skill development model suggests that high achievement leads to high self-concept. The third model is reciprocal affects model. According to this model, both academic achievement and self-concept are reciprocally related and mutually reinforcing. Whereas positive academic self-concept leads to higher academic achievements, high academic achievement, in turn, enhances academic self-concept, thus, fostering one leads to a positive reciprocal effect on the other (Marsh & Martin, 2011).

Students' academic self-concept is formed both by his own performance as well as through social comparison called frame of reference (Marsh et al., 2000). The two types of social comparison include contrast and assimilation. The contrast effect suggests that a student feels

more negatively about his or her abilities when surrounded by students with high abilities (Marsh, 1987). The same student will have higher academic self-concept in a group with low achievements. It is because a student compares and contrasts his or her achievement with schoolmates or classmates. Assimilation effect refers to a situation where a student being a member of a group of high-achieving students feels positive about his or her abilities. With almost a similar sense, Shaalvik & Shaalvik (2002) use external comparison and internal comparison as frames of reference through which students compare themselves with others. In external comparison a student compares his or her own performance with the perceived performance of the other, who may be a comparison group or a comparison person. Similarly, in internal comparison, a student may compare his or her achievements in different class subjects at a given time.

Self-concept of individuals is said to change over time, being relatively high during childhood and decreasing at the start of adolescence (Orth & Robins, 2019). The lower the grade the higher the self-concept and vice versa (Onetti et al., 2019). As students transit to higher grades, they display a decrease in their self-concept. Some of the reasons in this regard are considered to be reduced teacher support, changing classroom rules and limited appreciation of developmental needs (Lester & Cross, 2015; Onetti et al., 2019). As Bear et al. (2018) found, in contexts where social support is a norm even in middle school, such as in China, the school climate shields students from the negative effects of the transition and, thus, leads to their positive self-concept. This is supported by McFarland et al. (2016) who found that when teachers demonstrate affection for students, it positively contributes to their self-concept. Conflicts, on the other hand, negatively influences self-concept of students. The same authors found that female teachers, compared with male teachers, exhibit reduced conflicts with boys and therefore, make school experience more joyful for them. It suggests that a positive school climate leads to positive self-concept of students and vice versa. Chmielewski et al. (2013) found a negative effect of high track on academic self-concept of students in some countries. Students in low tracks demonstrated higher academic self-concept compared with their counterparts in high tracks. These authors associate such outcomes with teacher behaviour. Teachers in low tracks provide a deliberate attention on boosting students' academic self-concept through being more supportive, and encouraging students for their minor efforts. Teachers in high tracks, on the other hand, are more demanding who maintain more competitive atmosphere. Some studies relate the high self-concept to high academic achievements and greater engagement in schools. Karababa (2022), for example, reported from Turkey that students who are more engaged in schools show greater academic achievement which in turn results in their higher level self-esteem.

Students' self-concept is also influenced by classroom instructions and teachers' feedback strategies (Van der Beek et al., 2017) suggesting a major role of teachers in the development of students' self-concept. Holenstein et al. (2022) indicate that

teachers' feedback contributes to student achievement, and students' achievement, on the other hand, influences their self-concept. In this way, teachers' feedback is positively related to students' self-concept. Such support of teachers helps in developing a positive climate for students and students with a positive view of their school climate tend to have higher self-concept (Coelho et al., 2020). Literature also suggests that teachers who extend greater support to their students are more likely to enhance their confidence in their learning abilities and thus reduce the fear of failure (Selçuk et al., 2021).

The self-concept of students may vary from dimension to dimension. “Even within the academic components of self-concept, the different dimensions are very distinct” (Marsh, Chessor, Craven, & Roche, 1995, p. 290). Some studies have shown a difference in self-concept on the basis of gender. In the domains of mathematics and science, for example, boys have been found with higher self-concept compared with girls. Girls, on the other hand, are reported with higher self-concept in language domain (Dai, 2001). However, Kombe et al. (2016) strongly reject the notion that mathematics is a male domain. In their study, girls scored higher than boys in the domain of mathematics. Similarly, Jansen et al. (2014) found male students demonstrating higher self-concept in the subjects of physics and chemistry compared to their female counterparts. Studies also suggest that female students usually underestimate their ability. As found from Arab context, girls showed higher achievement but modest self-concept compared to their male counterparts who demonstrated lower achievement but higher self-concept (Abu-Hilal et al., 2014). This can be supported by findings of (Selçuk et al., 2021) who found boys to be more achievement oriented and less dependent compared with girls because of different socializations, as culturally girls are socialized to be compliant and dependent whereas boys are expected to be competitive and assertive. An interesting finding in relation to the comparison of self-concept of boys and girls comes from Coelho et al. (2020) who found that, during school transition, boys display less decrease in academic self-concept compared to girls who, on the other hand, display less decrease in emotional self-concept.

Another interesting factor influencing the self-concept of students is parent’s academic background. While studying the self-concept of students, Rüschenpöhler and Markic (2020) found that students whose parents lack any chemistry capital demonstrate higher self-concept in chemistry. On the contrary, students with low self-concept in chemistry were those whose parents possess high capital in chemistry.

Although there is a good amount of knowledge leading to our understanding on the self-concept of students, there is also a realization that the self-concept of individuals vary across contexts and cultures (Marsh & Hau, 2004). Majority of the existing research on self-concept, similar to many other concept and theories, appears to come from western or developed context. A need of examining self-concept of students in different context has been felt to understand the way cultural differences shape the self-concept of learners (Baudson et al., 2016). Research also shows a high self-concept of individuals in their early years which gradually decreases over time (Orth & Robins, 2019), constantly remaining in flux at the early adolescent years (Ellis, Marsh, Craven, 2005). Against this backdrop, this study explores the self-concept of class 7 and 8 students in an urban city of Pakistan with a focus on three subjects, namely, science, mathematics and others.

Research Design

It was a cross sectional survey study where a one-time data was collected from two groups (class 7 and class 8 students). Survey method was used keeping in view the purpose of the study as this method explains the statistical relationship between numbers of variables (Moser & Kalton, 1996). Moreover, survey method enables researchers to collect data from a large sample at a time. The researchers in this study had to personally visit the respondents to collect data at one time. Consequently, survey method suited the purpose and process.

Three secondary schools that were convenient for the researchers considering the resource and time factor were approached (Bryman, 2004). One of them showed willingness to allow the students to participate in the research. Since one of the objectives of the research was to understand the self-concept of students in their early adolescent period, the students of class 7 (n=31) and class 8 (n=32) were taken as samples. Thus, 62 students participated in the study. All the participants were female. The age range of students in class 7 was from 12 to 14 while in class 8, it was 13 to 15.

The instrument used in this research was a rating scale developed to measure the self-concept of students under three subscales (science, mathematics and other subjects). These subscales have been adapted from academic subareas of self-concept posited by Shavelson, Hubner and Stanton (Marsh, 2005). There were eighteen statements, six under each subscale. The responses to the set statements ranged from 1 to 8 on a Likert scale; 1 representing ‘very false’ and 8 representing ‘very true’. This instrument was adapted from Marsh, Trautwein, Ludtk, Baumert & Koller (2007) who used a four point scale, disagree to agree response format to measure the self-concept of students. It consisted of cognitive items such as ‘I am good at’, where other students being as frame of reference. As examples, table 1 shows one variable under each category.

Table 1. Categories of the Instrument with Examples

Category	Variable	Data about
Science	Compared to others my age I am good at science classes	Each category measures the perceived self-concept of students in the category
Mathematics	Work in Mathematics classes is easy for me	
Other subjects	I learn things quickly in all other subjects	

The research instrument (rating scale) was directly administered by the researchers in the classrooms as it was a small scale survey making self-administration possible for researchers (Moser & Kalton, 1996). The measurement scales were explained to the respondents and they were directed to circle one variable against each statement according to their best knowledge.

The presence of many researchers in school and engaging students for the whole period were the ethical issues which might be disturbing school routine activities. However, consent had been taken from school before going there. Moreover, we also got permission from the class teacher and involved students with their knowledge (Robson, 2002). Similarly, we allowed the students not to mention their names if they want.

Although possible efforts were carried out to collect reliable data, it depends on how correctly students have responded about themselves because if they camouflaged, it will distort data (Labenne & Greene, 1969). Finally, the findings may not be generalized to the target population as without any population frame, only two classes had been taken through convenient sampling procedure.

After collection of data and given codes to the scales (ranging from 1 to 8, ‘very false’ to ‘very true’), they were entered into computer using SPSS (statistical packages for social science) program. The entered data were revisited for cleaning purposes to ensure that nothing was

missing and data had been entered correctly. The negative statements in the questionnaire were reverted to make them positive. First, Kolmogorov-Smirnov test was used to explore the normality of score in an objective manner. Then, through descriptive analysis, the mean scores of each class in each subject were computed. Finally, independent t-test and Mann-Whitney tests were used in order to compare two groups (class 7 and 8).

Data Analysis

The results of this investigation served two main purposes; comparing the overall and subject-wise self-concept of class 7 and class 8 students. Table 2 shows the result of Kolmogorov-Smirnov test according to which the distribution of scores for both classes was normal in science and other subjects. In mathematics, the distribution of score is normal for class 7 and non-normal for class 8. Furthermore, in overall, the distribution of scores is normal for class 8 and non-normal for class 7.

Table 2. Kolmogorov-Smirnov test: Normality of Distribution

Subjects	Class	Kolmogorov-Smirnov Test
Science	7	D (31) = .96; p = .200
	8	D (32) = .123; p = .200
Maths	7	D (31) = .123; p = .200
	8	D (32) = .188; p = .006
Other subjects	7	D (31) = .072; p = .200
	8	D (32) = .134; p = .152
Overall	7	D (31) = .180; p = 012
	8	D (32) = .144; p = .200

Since, in science and other subjects the distribution of scores was normal, independent t-test was used to compare the means of the two classes in these subjects and to look at the difference more objectively and statistically as shown in Table 3 below.

Table 3. Result of Descriptive and Inferential Analysis

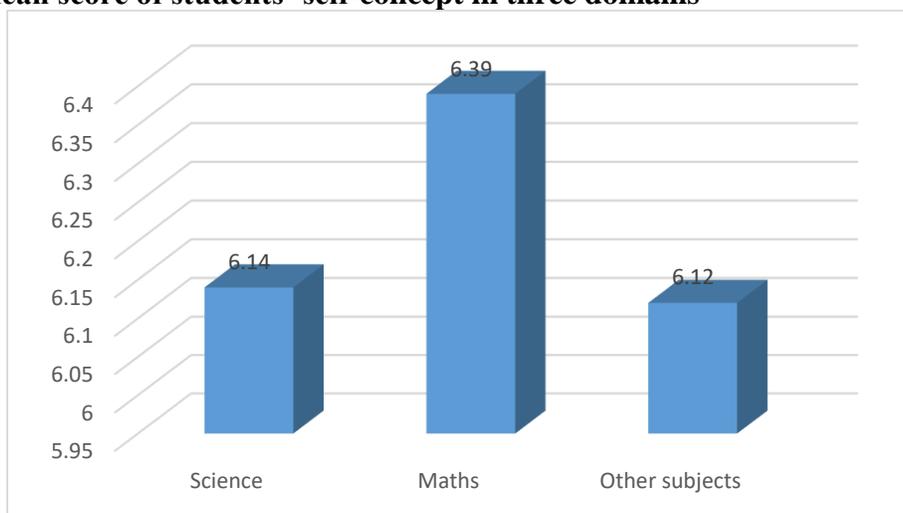
Subjects	Cl	M	SD	t-test	Mann-Whitney test
Science	7	5.51	.900	t (61) =5.79; p=.000	Mann-Whitney U(176.000)=P=.0001
	8	6.77	.83		
Maths	7	5.80	1.06	t (61) =1.89; p=.064	Mann-Whitney U(183.000)=P=.0001
	8	6.98	.94		
Other subjects	7	5.87	.97	t (61) =1.89; p=.064	Mann-Whitney U(183.000)=P=.0001
	8	6.37	1.14		
Overall	7	5.72	.77	t (61) =1.89; p=.064	Mann-Whitney U(183.000)=P=.0001
	8	6.70	.77		

As the table shows, on average, class 8 showed higher self-concept in science (M=5.51; SD=.900) than class 7 (M=6.77; SD=.83) with significant difference in scores [t (61) =5.79; p=.000]. In other subjects, though, the self-concept of class 8 students was higher (M=6.37; SD=1.14) than class 7 (M=5.87; SD=.97), the difference was not significant [t (61) =1.89; p=.064].

On the other hand, Whitney test was conducted for mathematics and overall sum which had been shown non normal in Kolmogorov-Smirnov test. As a result, on average, the self-concept of class 8 students in mathematics was higher (M=6.98; SD=.94) than class 7 (M=5.80; SD=1.06) and there was a significant difference in their self-concept of mathematics [U(176.000)=P=.0001]. Finally, the overall self-concept of class 8 students in the three academic subscales was higher ((M=6.70; SD=.77) than class 7 (M=5.72; SD=.77) and there was significant difference between their overall self-concept [U(183.000)=P=.0001].

Another interesting result emerging from this research as shown in Figure 1 below is that, in general, students showed higher self-concept in mathematics (M=6.39) compared with science (M=6.14) and other subjects (M=6.12). Their self-concept for the subject for science and other subjects is almost same.

Figure 1. Mean score of students’ self-concept in three domains



Discussion

This study set out to explore the difference in the self-concept of class 7 and class 8 students in three different domains, namely, science, mathematics and other subjects. The results showed that, class 8 students held significantly high self-concept compared with class 7 in general and in science and mathematics subjects. Although class 8 students demonstrated high self-concept in other subjects as well, the difference was not significant.

Apparently simple, these results merit serious debate when compared with the existing research on students’ self-concept. Our existing understanding suggests that students hold high self-concept in the early years, there being a reducing trend in self-concept at the start of adolescence (Orth & Robins, 2019). If this is true, the self-concept of students at class 7 will be high

compared with that of students at class 8 given that the self-concept decreases as students move to upper grade. The result of the current research contradicted the previous research showing high self-concept for the students of class 8 compared with their counterparts at class 7. One plausible explanation for this surprising finding comes from Bear et al. (2018) who found that, in China, students maintain their high self-concept even at adolescent mainly because of the social support they receive from teachers which shields their self-concept from the negative effects of transition to higher grades. Since Asian contexts share similar cultural norms, students increased self-concept at higher graders would be because of the social support extended to them even at higher grades. The affection teachers demonstrate for students positively contributes to their self-concept (McFarland et al., 2016).

Another interesting result is the high self-concept of students in mathematics compared with science and other subjects. In mainstream literature (see, for example, Dai, 2001), girls are reported holding high self-concept in language domain compared with mathematics. Although, language domain was not explicitly measured in this research, the other subjects included items for language where students showed lower self-concept compared with mathematics, thus, contradicting the findings of the existing research. This result supports Kombe et al. (2016) who found girls scoring higher than boys in mathematics which rejects the notion that mathematics is a male domain. Since high self-concept leads to high achievement, girls scoring high in mathematics support their high self-concept in this domain (Marsh & Yeung, 1997; Nagengast et al., 2011).

Conclusion

With the realization that self-concept of students and their academic achievements are reciprocally related (Marsh & Martin, 2011), an increasing attention has been paid on this concept across the globe. However, self-concept of students has surprisingly received little attention in Pakistan. This study has gone some way towards understanding the self-concept of students at their early adolescent stage in three academic subjects in an urban city of Pakistan. The study found that class 8 students hold significantly higher self-concept in general and in both science and mathematics compared with students of class 7. Since this result contradicts the existing research which shows a decrease in the self-concept of students as they move to higher grades in the ladder (Orth & Robins, 2019), the current research raises more questions than it answers. If sustained social support helps students to maintain their high self-concept as reported from Chinese context (Bear et al., 2018), we need to understand whether students receive sustained social support in this region leading to their high self-concept at higher level. If so, this will be a significant contribution in improving student achievements through identifying the ways to extend sustained social support to students.

Another way to prove whether students of class 8 really hold high academic self-concept compared with class 7 students would be to compare their academic achievements or results with the understanding that high self-concept leads to high academic achievement (Trautwein et al., 2009). If students of higher grade demonstrate higher achievement, it will verify their high self-concept.

To conclude, this study has merely scratched the academic self-concept of students raising more questions that require further research. If we develop a deeper understanding of the factors and ways influencing self-concept of students, we will be able to contribute to the enhanced achievement of students with the fact that higher self-concept leads to higher academic achievement.

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