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AGE, GENDER, AND ACHIEVEMENT EFFECTS ON ACADEMIC SELF-CONCEPT OF HIGH SCHOOL CHILDREN[#]

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This study investigated the gender, achievement, and age effects on academic self-concept of high school children and also to provide additional evidence concerning the reliability and validity of the indigenously developed Academic Self-Concept Scale (Ahmed, 1986). The results indicated that there were no significant gender differences. There was a strong positive relationship between achievement and academic self-concept. There were significant differences between different age groups within the same grade. The findings indicated promising evidence for validity and reliability. The utility of academic self-concept in education is discussed

A positive self-concept is widely valued as a desirable educational goal and is frequently posited as a mediating variable that facilitates the attainment of other desired outcome such as academic achievement. In education the importance of non-cognitive variables to achievement has been well documented (Bloom, 1976; Marsh, 1990). During the last two decades, educational researchers have become increasingly aware of the impact that an individual's self-concept has had on classroom behavior and achievement. During the school years, children's self-concept become organized along both academic and nonacademic lines (Byrne & Shavelson, 1986). Self-concept, whether used as an outcome or as a mediating variable that helps explain achievement outcome is a critical factor in education and educational research (Villar, Michael, & Gribbons, 1995). Various studies suggested that there may be many facets to the construct of self-concept e.g., Shavelson, Hubner, and Stanton (1976), maintained that there are seven aspects of self-concept. According to them, self-concept is viewed as organized, multifaceted, hierarchical, stable (in general, unstable situationally), developmental (increasingly differentiated with age), evaluative, and differentiable from

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other constructs. It was posited that general self-concept is at the apex of hierarchical structure. At the second level there are two more specific components, academic self-concept and nonacademic self components, with latter including social, emotional, and physical self-concept. A growing body of literature (e.g., Byrne, 1984; Hansford & Hattie, 1982; Marsh, 1986, 1987; Marsh, Byrne, & Shavelson, 1988; Shavelson & Bolus, 1982) indicates that academic self-concept is clearly differentiable from general self-concept and that academic self-concept is more highly correlated with academic achievement and other academic behaviour than is general self-concept. Many recent studies (Craven, Marsh, & Debus, 1991) also support the multidimensional and hierarchical facets of self-concept as proposed by Shavelson et al. (1976). Bloom (1976) and Messick (1979) have argued that noncognitive variables are important aspects of academic achievement, while the role of cognitive ability and previous learning opportunities should in no way be underestimated, measurement of noncognitive characteristics such as self-concept may also aid in the attempt to comprehend students' achievement behaviour. Academic self-concept in particular appears to be a potentially valuable construct for educators to consider in their attempt to understand individual students' level of achievement. The relationship between self-concept and achievement has been well documented (Caracosta & Michael, 1986; Marsh, 1990, 1992). Lyon (1993) suggested that measures of academic self-concept are more relevant to the academic setting than measures of general self-concept.

The purpose of the present study was two fold: (i) to find out the achievement, age, and gender effects on academic self-concept of high school students; and (ii) to provide additional evidence regarding the internal consistency reliability and validity of an indigenously developed Academic Self-Concept Scale (ASCS).

METHOD

Sample

The subjects participating in this study were 256 ninth grade high school students from federal government schools in Islamabad, Pakistan. At the time of investigation, all the subjects were regular students. The subjects belonged to families from lower middle to upper middle socioeconomic status. The sample consisted of 38.28 per cent boys and 61.72 per cent girls. The mean age of the girls was 14.82 (SD = 1.17) and for boys it was 15.09 (SD = 1.08) years. At the time of testing the

students were in the tenth month of their academic year, preparing for their annual examination. As the curriculum and allocation of school marks were same for both sexes, their most recent school results showed the marks with a mean of 143.73 (SD = 21.81).

Instrument

An indigenous Academic Self-Concept Scale (ASCS) developed by Ahmad (1986) was used. ASCS consists of 40 items on 5-point scale ranging from 1 (almost false) to 5 (almost true) and results in total scores ranging from 40 to 200, with higher scores indicating higher academic self-concept. Initial internal consistency reliability (cronbach alpha) of .89 has been reported for this scale. Evidence of convergent and discriminant validity are reported with measure of high school marks as (r =.37; p <.01) and with Students' Problem Check List (SPCL), as (r =.39; p <.01). Alpha coefficient reliability of .88 have been found for the present sample.

Procedure

Prior permission were taken from school authority to conduct the research. All the subjects were contacted in group during school hours. They were told that the questionnaire was designed to know the students feelings about themselves and their studies. It was also made clear that there was no right or wrong answer to it. A strong emphasis was put on the need for honest responses. Questionnaire containing the relevant measure and general demographic characteristics were administered in group, separately for boys and girls. Subjects were asked to rate each item on a 5-point scale ranging from "Almost true" to "Almost false", showing how accurately each item described them.

RESULTS AND DISCUSSION

The purpose of the study was to examine the effects of achievement, gender and age effects on academic self-concept of high school students, and also to provide further evidence regarding the internal consistency reliability and validity of an indigenously developed ASCS. In this investigation, the academic self-concept was treated as a unidimensional construct because of the nature of the available instrument, although a research (e.g., Marsh, Byrne, & Shavelson, 1988), clearly demonstrates that academic self-concept is a

multidimensional construct and that there is a particularly clear separation between verbal and mathematical components of academic self-concept.

The internal consistency reliability estimate (Cronbach alpha) of the test score for the present sample is .88, suggesting that measurement error is a minimal consideration in the use of this measure, and is a reliable measure for the total sample. The *t*-test was applied to see whether gender differences existed on academic self-concept.

Table 1

Gender effects on ASCS scores

Gender	*n*	*M*	*SD*	*t*	*p*
Girls	159	143.90	22.41		
				.17	.86
Boys	97	143.45	20.90		

Table 1 shows that there were no significant differences between boys and girls. The results of other studies of gender variations in self-concept of school children have been less conclusive; the findings range from no gender differences (Chapman & Boersma, 1983) to boys scoring higher than girls (Chiam, 1987), or girls scoring higher than boys (Brookover, Paterson, & Thomas, 1962). In educational system of Pakistan, the ninth and tenth grades are very crucial in determining the future educational programmes and objectives. Therefore at this stage students, both boys and girls tend to make serious individual efforts to obtain good grades. During late adolescence, gender differences in academic self-concept scores become less apparent because at this stage both boys and girls tend to make serious individual efforts to achieve their educational and occupational goals (Maqsud, 1992).

The correlation between academic self-concept scores and school achievement (marks) indicated a significant and positive relationship, $r = .44$, $p < .000$. Several studies (Marsh, 1990, 1992) have documented the relationship between self-concept and achievement for high school students. This statistic is indicative of moderate relationship between ASCS and school achievement. It can also be interpreted as external validity of the scale, thus reflecting favorably on the theoretical significance of construct of academic self-concept underlying the scale,

in relation to the criterion of school achievement, thus providing further support for the concurrent validity of the indigenously developed ASCS. To provide further evidence for the predictive validity of the ASCS, the scores on ASCS were related to annual examination marks, collected one month later. The result indicated a significant positive relationship, $r = .37, p < .01$.

Table 2

ANOVA summary data

Source	*df*	*SS*	*MS*	*F*	*p*
Between Group	4	5560.23	1390.06		
				2.94	.02
Within Group	240	113485.57	472.86		
Total	244	119045.80			

Table 3

Means and standard deviations for different age groups

Age Groups	*n*	*M*	*SD*
13	14	153.93	19.54
14	90	148.23	20.51
15	79	141.14	20.17
16	47	138.55	27.25
17	26	138.07	19.25

Table 2 presents the age differentiation on academic self-concept scores within the same grade students. ANOVA revealed that the effect of age has significant effect on total scores of academic self-concept i.e., the academic self-concept scores of students is effected by different age brackets within the same grade, with younger students having relatively high academic self-concept score as compared to the older one's. Table 3 shows that as the age increases the mean academic self-concept scores

of students decreases, within the same grade. It appears that the older students either get late admission in school as compared with their age mates or they were detained once or more in the same class because they were educationally poor. Therefore, they have poor academic self-concept as compared to their younger one's of the same grade.

Table 4

High and low achievers in relation to ASCS scores

Groups	*n*	*M*	*SD*	*t*	*p*
High achievers	51	455.43	98.11		
				6.16	.000
Low achievers	53	339.47	93.67		

Result in Table 4 suggests a significant difference between high and low achievers on academic self-concept scores i.e., high achievers reported greater academic self-concept than lower achievers regardless of age and gender. The academic self-concept in particular appears to be a potentially valuable construct for educators to consider in their attempt to understand individual student's level of achievement. Uses of scores obtained from ASCS is of considerable importance for purpose of early identification of students experiencing academic difficulties. The results of this investigation provide additional evidence for the reliability, and validity of ASCS. Since validation is an ongoing dynamic process, further research should be continued. Further research should also be carried out to see the quadratic age effect in the development of academic self-concept.

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