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ABSTRACT

The study compared gifted achievers (N=50) and underachievers (N=50) with each other and with average ability achievers and underachievers. Subjects were obtained from the total standard 10 Afrikaans speaking cohort in the Orange Free State (Republic of South Africa). Ability/achievement discrepancy scores were calculated for the entire cohort, and students with the highest positive discrepancy scores were compared with students with the highest negative discrepancy scores. Also examined were academic achievement, study habits and attitudes, personality, school affect and academic self-concept, and a bibliographic self-report. Among findings were the following: gifted underachievers were more quilt prone and less self-assured, more casual, socially less controlled, emotionally less stable, more submissive, and less assertive than gifted achievers. Both average groups were more timid and less venturesome than the gifted groups with both groups of underachievers being more timid and less venturesome than achievers. Substantial differences between achieving and underachieving gifted pupils were found in all study habit and attitude variables except study time, suggesting less efficient study methods by underachieving students. Work methods of both gifted groups were superior to those of average students. Gifted underachievers had a less favorable attitude toward school and a poorer academic self-concept. (DB)

PERSONALITY AND OTHER CHARACTERISTICS OF THE UNDERACHIEVING GIFTED PUPIL

Subject category: Describing and identifying giftedness

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PERSONALITY AND OTHER CHARACTERISTICS OF THE UNDERACHIEVING GIFTED PUPIL

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1. INTRODUCTION

The aim of this paper is to compare the underachieving gifted pupil with the achieving gifted pupil as regards certain personality traits, study methods, school affect and academic self-concept. In order to get a beter perspective on the difference between the underachieving gifted pupil and the achieving gifted pupil, the difference between the underachieving average pupil and achieving average pupil will also be determined. These groups of pupils will be compared to determine the unique characteristics of the gifted underachiever.

Gifted pupils are described as more trustworthy under stress, emotionally more stable, above average in cooperation, social adjustment[1]; superior on dominance, creativity, affiliation, protectiveness, are better adjusted, superior on truthfulness, purposiveness and judgement, are more self-sufficient, independent and high on self-concept[2]. These pupils are also high on persistence, candidness, responsiveness, originality, curiosity and enthusiasm[3].

The authors express their thanks to prof. H.S. Steyn of the Statistical Consultation Services of the Potchefstroom University for his help with the statistical procedure.

Underachievers are characterized as having a lower level of personality adjustment and ego function, and as less adaptive[4]; they score lower than achievers on defence, endurance, dominance and aggression but higher on conformity[5]. Underachievers have weaker motivation for studying, tend to be less self-confident, and appear to have less capacity for working under pressure than achievers. Underachievers show a tendency to procrastinate and tend to rely upon external pressures to complete assignments[6].

Gifted underachievers are frequently described as lazy, indifferent, uncooperative, careless and negative toward attending and participating in school[7]; rebellious, having an inadequate self-image and selfpride; are characterized by a lack of confidence, socialization, learning intent[8]; lower self-concept and a weaker internal locus of control than achievers[9].

2. METHOD

2.1 Orientation

During the second half of 1980 all the Afrikaans-speaking standard 10-pupils in the Orange Free State participated in a test programme as part of a research project to identify those variables which influence academic achievement. An ex post facto research design was used in this project. The data obtained with this programme were used for the research on which this paper is based.

2.2 Subjects

The subjects were all the Afrikaans-speaking standard 10-pupils in the Oranje Free State in 1980. The whole population of 2 511 pupils was used in this study.

2.3 Measures used in the research programme

2.3.1 Academic achievement

Indices of academic achievement consisted of the achievement of the subjects in the Senior Certificate Examinations written at the end of 1980. The grade point average (GPA) of each subject was calculated and used as dependent variable.

2.3.2 Survey of Study Habits and Attitudes (SSHA) Form H

The SSHA was developed in the USA under the leadership of William F. Brown and Wayne H. Holtzman and it was adapted and standardized in the Republic of South Africa for use in South African schools The aim of the SSHA is to obtain an indication, in a systematic and standardized manner, of a pupil's habits and attitudes regarding his school-work.

The SSHA consists of four primary and three secondary scales, viz:

Delay Avoidance (DA) indicates the extent to which the pupil completes his tasks promptly, avoids postponing assignments and is disinclined to waste time unnecessarily.

Work Methods (WM) gives an indication of the pupil's use of efficacious study methods, his competence in carrying out assignments and the extent to which he tackles his school-work in the best way.

Study Habits (SH) combines the scores of DA and WM, in order to establish a norm for academic behaviour.

Teacher Approval (TA) provides a norm for the pupil's attitude towards the teacher and his approval of the teacher's conduct in the classroom.

Education Acceptance (EA) determines the measure to which the pupil accepts educational ideals, aims, practices and demands.

Study Attitudes (SA) combines the scores of TA and EA and provides a norm for the pupil's confidence in scholastic objectives.

Study Orientation (SO) is a compendium of all the aspects mentioned above and provides a collective norm for the pupil's study habits and attitudes.

2.3.3 The jr. sr. High School Personality Questionnaire (HSPQ)

The HSPQ, originally completed and developed in the USA by R.B. Cattell and H.A. Beloff, was adapted for South African conditions. The HSPQ measures fourteen separate personality dimensions or traits:

A	(Reserved vs warmhearted)	H	(Timid vs adventurousness)
B	(Intelligence : concrete-thinking vs abstract-thinking)	I	(Realistic vs sensitive)
		J	(Vigarous vs internally restrained)
C	(Emotionally unstable vs emotionally stable)	O	(Self-assured vs guilt-prone)
D	(Phlegmative vs excitable)	Q_2	(Group dependent vs self-sufficient)
F	(Submissive vs assertive)	Q_3	(Casual vs socially controlled)
F	(Serious vs carefree)	Q_4	(Relaxed vs tense)
G	(Expedient vs conscientious)		

2.3.4 School affect questionnaire

This questionnaire was developed by Venter[10] to obtain a measure of the school affect and academic self-concept of a pupil. This questionnaire consists of four subscales of which two measure school affect and two which measure academic self-concept. Four subscores and a total score (the sum of the four subscores) are obtained for the school affect questionnaire.

The subscales are:

School affect A: This subscale was developed by Venter[10] to obtain a measure of a pupil's general affect towards the school according to Bloom's[11] view of school-related affect. A pupil's view of his success in academic and non-academic tasks is taken into consideration.

School affect B: A school opinion questionnaire, described in Cohen[12] was used to obtain a measure of alienation from school.

Academic self-concept C: A questionnaire which was developed by Barker-Lunn[13] was used to obtain a measure of a pupil's view of himself in terms of school work.

Academic self-concept D: For academic self-concept D a questionnaire which was originally developed by Brookover[14] was used. With this questionnaire a measure of a pupil's view of the self in the context of the school, and in particular school learning, is obtained.

2.3.5 Bibliographical self-report for senior secondary pupils

This self-report is used in the Orange Free State to get information on a variety of biographical and personal aspects of a pupil. From this self-report information about the following study traits of a pupil as experienced by himself is obtained: Comprehension ability; Attentiveness; Study time, Memory and Study habits.

Comprehension ability was used with IQ to determine a discrepancy score for each pupil (see procedure below).

3. PROCEDURE

After the questionnaires had been scored the following procedure was followed:

Factor analysis was used to summarize the variables by a few factors. Memory and comprehension ability were grouped into one of these factors. As comprehension ability correlated higher with GPA than memory, it was decided to use it together with IQ to predict GPA.

An expected or predicted GPA was determined for each of the 2 511 subjects by calculating a regression equation with IQ and comprehension ability as independent variables or predictors with GPA as dependent variable. A discrepancy score, *actual* GPA minus *predicted* GPA, was calculated for each participant. A negative discrepancy score was defined as underachievement while a positive discrepancy score was defined as achievement at or above the expected level.

In the context of this paper underachieving means achieving at a level below the expected or predicted level of achievement. Achieving means achieving at or above the expected or predicted level of achievement.

Subjects with an IQ of 120 and above were classified as gifted pupils. By using the BMDP9R-computer programme[15] 269 gifted pupils were selected. The discrepancy scores for each of these 269 gifted pupils were then determined. In order to ensure that only true underachievers and achievers would be compared, potential participants were selected from the extreme range of discrepancy scores. The 50 pupils in the top discrepancy scores (i.e. the 50 gifted pupils with the highest positive discrepancy scores) were defined as gifted achievers. The 50 gifted pupils with the highest negative discrepancy scores were defined as gifted underachievers.

To ensure a better perspective on the gifted underachiever, the *gifted* underachiever was compared with the *average* underachiever. The same procedure as described above was used to identify the underachieving average pupil and achieving average pupil. Average pupils were defined as pupils

with an IQ between 95 and 105. There were 564 pupils who were in this range. The 50 pupils with the highest positive discrepancy scores were defined as achieving average pupils. The 50 pupils with the highest negative discrepancy scores were defined as underachieving average pupils.

Four groups of subjects were obtained in this way, viz:

(a) an underachieving gifted group; (b) an achieving gifted group;

(c) an underachieving average group; (d) an achieving average group.

The mean ($\bar{X}$) and standard deviation(S) were obtained for each of these groups as well as for the total group of 2 511 S_s on the twenty-nine variables reported in tables 1 and 2.

For each of these variables the following were determined:

* The difference between the averages of the achieving gifted and underachieving gifted groups on a variable. This is denoted by $\bar{X}_2 - \bar{X}_1$.
* The difference between the averages of the achieving gifted and underachieving gifted groups for a given variable divided by the standard deviation (S_T) of that particular variable obtained from the total population(2 511 subjects). This is denoted by $Z_{\bar{X}_2 - \bar{X}_1}$ and is defined as the standard difference between the achieving and underachieving gifted S_s.
* The difference between the averages of the achieving average group and the underachieving average group on each one of the variables ($\bar{X}_4 - \bar{X}_3$).
* The difference between the averages of the achieving and underachieving average groups on each one of the variables divided by the standard deviation of that particual variables calculated by using all 2 511 subjects. This is denoted by $Z_{\bar{X}_4 - \bar{X}_3}$ and is defined as the standard difference between the achieving and underachieving average S_s.

* Lastly the difference between $Z_{\bar{X}_2} - \bar{X}_1$ and $Z_{\bar{X}_4} - \bar{X}_3$ was determined and denoted by A.

The aim of the analyses was threefold: *Firstly* by comparing the difference between the achieving and underachieving gifted groups ($\bar{X}_2 - \bar{X}_1$) with the standard deviation of the whole population (S_T) on a measure, one could get an idea of the relative size of the difference. A difference of more than half a standard deviation is *labelled* as a *substantial difference*.

[The *educational* significance of the differences was used in the analyses and not the *statistical* significance. The whole population was used and the calculation of the statistical significance are thus inappropriate.]

$\bar{X}_2 - \bar{X}_1$ for attentiveness (0,55 in table 2) is for example more than the half of 0,69. The conclusion is made that there is a "substantial difference" between underachieving and achieving gifted S_s as far as attentiveness is concerned.

Secondly $Z_{\bar{X}_1} - \bar{X}_2$ is used to compare the influence of a particular variable with the influence of the other variables on achievement and underachievement of gifted S_s. The following is an example of the reasoning followed: $Z_{\bar{X}_2} - \bar{X}_1$ for attentiveness is 0,80. $Z_{\bar{X}_2} - \bar{X}_1$ for study time is 0,07. It is therefore concluded that attentiveness has a greater influence on underachievement than study time when gifted underachievers are compared with gifted achievers.

Thirdly $A = (Z_{\bar{X}_2} - \bar{X}_1) - (Z_{\bar{X}_4} - \bar{X}_3)$ was calculated in order to determine the difference in influence of a particular variable on underachievement or achievement with gifted S_s compared to the same difference as regards average S_s. The values obtained for A for the different variables were compared to determine which variable has the greatest influence on underachievement in gifted S_s relative to underachievement in average S_s.

The following example illustrates this point: A for work methods is 0,39. A for attentiveness is 0,22 and A for delay avoidance is 0,19 (table 2). From these figures one can conclude that work methods is the factor that has the greatest influence in producing underachievement when gifted S_s are compared to average S_s.

4. RESULTS AND DISCUSSION

4.1 Personality factors (Table 1)

Gifted underachievers differ substantially from gifted achievers on the following personality factors: factor O (self-assured vs guilt-prone) $\bar{X}_2 - \bar{X}_1 = -1,99$ $S_T = 3,36$ and factor Q3(casual vs socially controlled) $\bar{X}_2 - \bar{X}_1 = 1,56$ $S_T = 2,78$.

The differences between the two gifted groups reveal that gifted underachievers are more guilt-prone and less self-assured (factor O) and more casual and socially less controlled (factor Q3) than gifted achievers.

In terms of the standard differences (A) between the gifted and average groups, a comparison with the average groups shows that large differences exist between the gifted and average pupils on factors B (less intelligent and more concrete-thinking vs more intelligent and abstract-thinking) A = -0,53, C (emotional stability), A = 0,46, E (submissiveness vs assertiveness) A = -0,39, H (timid vs venturesome) A = 0,44, I (realistic and independent vs sensitive and dependent) A = -0,47, O(self-assured vs guilt-prone) A = 0,46 and Q3 (casual vs socially controlled) A = 0,47.

TABLE 1 : PERSONALITY FACTORS : MEANS, STANDARD DEVIATIONS AND DIFFERENCES BETWEEN ACHIEVING AND UNDERACHIEVING GIFTED AND AVERAGE SUBJECTS

	Underachieving gifted (Group 1)		Achieving gifted (Group 2)		Underachieving average (Group 3)		Achieving average (Group 4)		Total of 2 511 S_s (Group T)		$\bar{X}_2 - \bar{X}_1$	$Z_{\bar{X}_2 - \bar{X}_1} = \frac{\bar{X}_2 - \bar{X}_1}{S_T}$	$\bar{X}_4 - \bar{X}_3$	$Z_{\bar{X}_4 - \bar{X}_3} = \frac{\bar{X}_4 - \bar{X}_3}{S_T}$	A**
	$\bar{X}_1$	S_1	$\bar{X}_2$	S_2	$\bar{X}_3$	S_3	$\bar{X}_4$	S_4	$\bar{X}_T$	S_T					
HSPQA	10,98	4,57	10,93	3,49	10,51	3,36	10,37	3,77	9,70	3,53	-0,05	-0,01	-0,14	-0,04	-0,03
HSPQB	8,48	1,18	8,98	0,89	6,92	1,22	8,15	1,20	7,98	1,38	0,50	0,36	1,23	0,89	-0,53
HSPQC	10,14	2,41	11,62	3,72	10,42	3,76	10,32	3,32	10,57	3,41	1,48	0,43	-0,10	-0,03	0,46
HSPQD	9,00	3,67	8,98	3,26	9,31	3,31	8,76	3,29	9,12	3,29	-0,02	-0,01	-0,55	-0,17	-0,16
HSPQE	9,06	2,86	8,29	2,68	9,89	2,79	7,87	2,68	8,54	3,20	-0,77	-0,24	-2,02	-0,63	-0,39
HSPQF	10,37	3,73	9,67	2,74	9,96	3,45	8,83	3,59	9,33	3,45	-0,70	-0,20	-1,13	-0,33	-0,13
HSPQG	12,33	3,02	13,00	2,44	11,54	3,16	13,00	2,83	12,36	3,09	0,67	0,22	1,46	0,47	-0,25
HSPQH	9,75	3,85	11,06	4,32	9,62	3,83	9,17	4,09	9,56	3,97	1,31	0,33	-0,45	-0,11	0,44
HSPQI	12,20	4,31	12,89	4,26	9,85	3,69	12,66	3,92	10,86	4,50	0,69	0,15	2,81	0,62	-0,47
HSPQJ	7,88	2,75	7,62	2,95	7,39	2,75	7,96	3,01	8,11	3,16	-0,26	-0,08	0,57	0,18	-0,26
HSPQO	11,43	3,06	9,44	3,86	10,67	3,04	10,23	3,34	10,32	3,36	-1,99*	-0,59	-0,44	-0,13	0,46
$HSPQ_2$	9,14	3,16	9,67	3,21	8,92	2,72	9,23	3,02	9,81	2,92	0,53	0,18	0,31	0,11	0,07
$HSPQ_3$	11,02	3,16	12,58	2,67	11,29	2,78	11,55	2,33	11,59	2,78	1,56*	0,56	0,26	0,09	0,47
$HSPQ_4$	9,51	2,61	9,49	3,31	9,42	3,49	9,21	3,32	9,83	3,20	-0,02	-0,01	-0,21	-0,07	-0,06

* "Substantial difference" i.e. difference between achieving and underachieving subjects are more than standard deviation ± 2.

** $A = (Z_{\bar{X}_2 - \bar{X}_1}) - (Z_{\bar{X}_4 - \bar{X}_3})$

TABLE 1 : PERSONALITY FACTORS : MEANS, STANDARD DEVIATIONS AND DIFFERENCES BETWEEN ACHIEVING AND UNDERACHIEVING GIFTED AND AVERAGE SUBJECTS

	Underachieving gifted (Group 1)		Achieving gifted (Group 2)		Underachieving average (Group 3)		Achieving average (Group 4)		Total of 2 511 S_s (Group T)		$\bar{X}_2 - \bar{X}_1$	$Z_{\bar{X}_2 - \bar{X}_1} = \frac{\bar{X}_2 - \bar{X}_1}{S_T}$	$\bar{X}_4 - \bar{X}_3$	$Z_{\bar{X}_4 - \bar{X}_3} = \frac{\bar{X}_4 - \bar{X}_3}{S_T}$	A**
	$\bar{X}_1$	S_1	$\bar{X}_2$	S_2	$\bar{X}_3$	S_3	$\bar{X}_4$	S_4	$\bar{X}_T$	S_T					
HSPQA	10,98	4,57	10,93	3,49	10.51	3,36	10,37	3,77	9,70	3,53	-0,05	-0,01	-0,14	-0,04	-0,03
HSPQB	8,48	1,18	8,98	0,89	6,92	1,22	8,15	1,20	7,98	1,38	0,50	0,36	1,23	0,89	-0,53
HSPQC	10,14	2,41	11,62	3,72	10,42	3,76	10,32	3,32	10,57	3,41	1,48	0,43	-0,10	-0,03	0,46
HSPQD	9,00	3,67	8,98	3,26	9,31	3,31	8,76	3,29	9,12	3,29	-0,02	-0,01	-0,55	-0,17	-0,16
HSPQE	9,06	2,86	8,29	2,68	9,89	2,79	7,87	2,68	8,54	3,20	-0,77	-0,24	-2,02	-0,63	-0,39
HSPQF	10,37	3,73	9,67	2,74	9,96	3,45	8,83	3,59	9,33	3,45	-0,70	-0,20	-1,13	-0,33	-0,13
HSPQG	12,33	3,02	13,00	2,44	11,54	3,16	13,00	2,83	12,36	3,09	0,67	0,22	1,46	0,47	-0,25
HSPQH	9,75	3,85	11,06	4,32	9,62	3,83	9,17	4,09	9,56	3,97	1,31	0,33	-0,45	-0,11	0,44
HSPQI	12,20	4,31	12,89	4,26	9,85	3,69	12,66	3,92	10,86	4,50	0,69	0,15	2,81	0,62	-0,47
HSPQJ	7,88	2,75	7,62	2,95	7,39	2,75	7,96	3,01	8,11	3,16	-0,26	-0,08	0,57	0,18	-0,26
HSPQ0	11,43	3,06	9,44	3,86	10,67	3,04	10,23	3,34	10,32	3,36	-1,99*	-0,59	-0,44	-0,13	0,46
$HSPQ_2$	9,14	3,16	9,67	3,21	8,92	2,72	9,23	3,02	9,81	2,92	0,53	0,18	0,31	0,11	0,07
$HSPQ_3$	11,02	3,16	12,58	2,67	11,29	2,78	11,55	2,33	11,59	2,78	1,56*	0,56	0,26	0,09	0,47
$HSPQ_4$	9,51	2,61	9,49	3,31	9,42	3,49	9,21	3,32	9,83	3,20	-0,02	-0,01	-0,21	-0,07	-0,06

* "Substantial difference" i.e. difference between achieving and underachieving subjects are more than standard deviation ÷ 2.

** $A = (Z_{\bar{X}_2 - \bar{X}_1}) - (Z_{\bar{X}_4 - \bar{X}_3})$

The difference between the two average groups and the two gifted groups (on factor B) indicates that the average groups are more concrete-thinking than the gifted groups. Comparing the gifted underachiever with the two average groups it becomes clear that as a group the gifted underachievers are more abstract-thinking ($\bar{X}$ = 8,48) than both the average underachievers ($\bar{X}$ = 6,92) and average achievers ($\bar{X}$ = 8,15).

The difference between the gifted and average groups on factor C (A = 0,46) shows that the gifted pupils are emotionally more stable than the average pupils. The difference between the two average groups on factor C is smaller than the difference between the two gifted groups ($Z_{\bar{X}_4 - \bar{X}_3}$ =-0,03 vs $Z_{\bar{X}_2 - \bar{X}_1}$ = 0,43).

" .is not only indicates that gifted underachieving pupils are emotionally less stable than gifted achievers ($\bar{X}_2 - \bar{X}_1$ = 1,48) but also that the gifted underachievers are emotionally less stable than the average underachievers ($\bar{X}_1$ = 10,14 vs $\bar{X}_3$ = 10,32).

With reference to factor E (submissiveness vs assertiveness) the difference between the gifted groups is smaller ($Z_{\bar{X}_2 - \bar{X}_1}$ = -0,24) than the difference between the average groups ($Z_{\bar{X}_4 - \bar{X}_3}$ = -0,63). Underachieving average pupils are thus less submissive and more assertive than achieving pupils. This is in contrast to the gifted underachiever who is more submissive and less assertive than the gifted achiever.

In the same way it can be concluded that:

* both average groups are more timid and less venturesome than the gifted groups while both gifted and average underachievers show the same characteristics by being more timid and less venturesome than the gifted and average achievers (factor H).

* the average groups are more sensitive and less realistic than the gifted groups. While both the underachieving groups reveal the same characteristics the gifted underachievers are less sensitive and more realistic than the average underachievers (factor I)
* while the average groups are less guilt-proned and more self-assured than the gifted groups, the difference between the two gifted groups is larger in comparison with the difference between the two average groups. A comparison between the four groups reveal that the gifted underachievers are more guilt-prone and less self-assured than any of the other three groups (factor O)
* the gifted groups are more controlled and less casual than the average groups; while the underachieving average pupils are less controlled and more casual than the gifted underachievers (factor Q_3).

4.2 Study habits and attitudes (Table 2)

Substantial differences between achieving and underachieving gifted pupils are found in all study habit and attitude variables except study time. It is concluded that underachieving gifted students use less efficient study methods than achieving gifted students but that they devote more or less the same time to study.

When comparing the values of $Z_{\bar{X}_2} - \bar{X}_1$ for the different study habit variables it is clear that the largest difference between the achieving and underachieving gifted students is to be found in study habits which is the combination of scores on the work methods and delay avoidance scales. The standard differences between achieving and underachieving gifted pupils were also high on the two latter variables (work methods : 1,07 and delay avoidance : 1,14).

A comparison of the values for A (i.e. the comparison of the differences between the gifted and average achievers) reveals that the greatest difference is in study time (A = -0,72). This means that the value of $Z_{\bar{X}_2} - \bar{X}_1$ for study time for gifted pupils is relatively low ($Z_{\bar{X}_2} - \bar{X}_1 = 0,07$) and for average pupils it is relatively high ($Z_{\bar{X}_4} - \bar{X}_3 = 0,79$). There is thus a negligible difference between achieving and underachieving gifted pupils but there is a considerable difference between achieving and underachieving average children as far as the time they spend on studying is concerned. Comparing the average time that the four groups of pupils study (see $\bar{X}$ in table 2) it is clear that, of the four groups, the underachieving average pupils study far less than the other three groups. The negligible differences between the gifted underachiever and gifted achiever reveal that study time is not a cause of underachievement among gifted underachievers.

Although the work methods of the two gifted groups are better than that of the average groups ($Z_{\bar{X}_2} - \bar{X}_1 = 1,07$ vs $Z_{\bar{X}_4} - \bar{X}_3 = 0,69$), the work methods of gifted underachievers are relatively less effective than that of the gifted achievers. Thus although gifted underachievers and gifted achievers spend more or less the same time on studying, the work methods of the gifted underachievers are less effective.

4.3 School affect and academic self-concept (Table 2)

There are substantial differences between the achieving and underachieving gifted pupils in school affect A ($Z_{\bar{X}_2} - \bar{X}_1 = 0,92$), academic selfconcept C ($Z_{\bar{X}_2} - \bar{X}_1 = 1,28$), academic self-concept D($Z_{\bar{X}_2} - \bar{X}_1 = 1,81$) and total affect ($Z_{\bar{X}_2} - \bar{X}_1 = 1,38$). This means that gifted underachievers tend to have a less favourable attitude towards the school (school affect A), evaluate themselves lower in terms of success at school (academic self-concept C) and in terms of their peers (academic self-concept D).

The largest difference relative to the school affect and academic self-concept of the average groups is in academic selfconcept C (A = 0,56), indicating that the average pupils as a group evaluate themselves lower in terms of success at school than the two gifted groups. In comparison with the two average groups, the gifted underachievers evaluate themselves higher in terms of success in school than average underachievers ($\bar{X}_1$ = 9,88 vs $\bar{X}_3$ = 8,78) but lower than the average achievers ($\bar{X}_1$ = 9,88 vs $\bar{X}_4$ = 11,10).

4.4 Comparison between study habits, personality factors, school affect and academic self-concept

When comparing the values obtained for the standard differences on all the variables, it becomes obvious that the greatest differences between underachieving and achieving gifted pupils lie in their study habits, school affect and academic self-concept variables. Personality factors obviously do not play such an important part in causing underachievement in gifted pupils.

The greatest difference on all variables between the underachieving and achieving gifted groups relative to the average groups (A - values) are in self-concept C (the pupil's view of himself in terms of school work) and personality factor B (concrete-thinking vs abstract-thinking).

5. CONCLUSION

The results presented in this paper indicate that there are large differences between gifted underachievers and gifted achievers concerning school affect and academic self-concept. The gifted underachievers have less favourable attitudes towards school and evaluate themselves low in

terms of success at school and in terms of their peers. While gifted underachievers and gifted achievers do not differ largely in terms of personality traits, there are very large differences between the two groups concerning their study habits and attitudes. Gifted underachievers spend the same time on studying but use poorer study methods and have poorer study habits than gifted achievers. This means that gifted underachievers must not be expected to study longer or more but must be helped to improve their study habits and methods.

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TABLE 2 : STUDY METHODS, SCHOOL AFFECT AND SELF-CONCEPT : MEANS, STANDARD DEVIATIONS AND DIFFERENCES BETWEEN ACHIEVING AND UNDERACHIEVING GIFTED AND AVERAGE SUBJECTS

	Underachieving gifted (Group 1)		Achieving gifted (Group 2)		Underachieving average (Group 3)		Achieving average (Group 4)		Total of 2 511 S_s (Group T)						
	$\bar{X}_1$	S_1	$\bar{X}_2$	S_2	$\bar{X}_3$	S_3	$\bar{X}_4$	S_4	$\bar{X}_T$	S_T	$\bar{X}_2 - \bar{X}_1$	$Z\bar{X}_2 - \bar{X}_1 = \frac{\bar{X}_2 - \bar{X}_1}{S_T}$	$\bar{X}_4 - \bar{X}_3$	$Z\bar{X}_4 - \bar{X}_3 = \frac{\bar{X}_4 - \bar{X}_3}{S_T}$	A**
Attentiveness (Self report)	3,10	0,58	3,65	0,72	3,14	0,61	3,54	0,68	3,22	0,69	0,55*	0,80	0,40	0,58	0,22
Study habits (Self report)	2,76	0,85	3,51	0,65	2,82	0,90	3,36	0,72	3,11	0,78	0,75*	0,96	0,54	0,69	0,27
Study time	4,09	0,95	4,15	0,83	3,83	0,97	4,53	0,65	4,11	0,89	0,06	0,07	0,70	0,79	-0,72
Delay avoidance (DA)	17,10	6,48	27,28	8,88	18,19	8,18	26,64	8,58	21,24	8,93	10,18*	1,14	8,45	0,95	0,19
Work methods (WM)	20,6	6,53	30,09	8,33	19,04	6,51	25,10	7,86	22,02	8,86	9,49*	1,07	6,06	0,68	0,39
Study habits (SH)	37,00	11,43	57,37	15,89	37,23	12,55	51,75	15,21	43,08	15,97	20,37*	1,28	14,52	0,91	0,37
Teacher approval (TA)	24,11	7,52	30,54	7,71	23,50	7,29	29,37	8,80	24,53	9,51	6,43*	0,68	5,87	0,62	0,06
Education acceptance (EA)	22,33	6,53	29,74	7,14	21,35	7,05	28,19	6,41	24,05	8,09	7,41*	0,92	6,84	0,85	0,07
Study attitudes (SA)	45,69	12,34	60,28	13,47	44,85	13,02	56,31	11,09	48,40	15,81	14,59*	0,92	11,46	0,72	0,20
Study orientation (SO)	81,00	14,73	94,33	12,66	79,71	19,14	92,48	11,24	82,86	19,31	13,33*	0,69	12,77	0,66	0,03
School affect A	6,51	2,11	8,66	1,24	6,24	2,05	7,63	2,06	6,89	2,34	2,15*	0,92	1,39	0,59	0,33
School affect B	32,48	4,72	34,56	4,88	31,10	3,81	32,78	5,08	31,82	5,17	2,08	0,40	1,68	0,32	0,08
Academic self - concept C	9,88	2,67	14,01	3,27	8,78	2,35	11,10	3,02	10,30	3,22	4,13*	1,28	2,32	0,72	0,56
Academic self - concept D	19,56	3,31	26,54	2,48	16,44	2,81	22,60	3,28	20,20	3,86	6,98*	1,81	6,16	1,60	0,21
Total affect	68,30	8,97	83,78	8,82	62,56	6,87	73,96	9,95	69,12	11,23	15,48*	1,38	11,40	1,02	0,36

* "Substantial difference" i.e. difference between achieving and underachieving subjects are more than standard deviation + 2

** $A = (Z\bar{X}_2 - \bar{X}_1) - (Z\bar{X}_4 - \bar{X}_3)$