Title: The relationship between perception and academic achievement of teenage pupils in the Gifted Education Programme (GEP) in Singapore

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Source: ERA - AARE Joint Conference, Singapore, 25-29 November 1996

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THE RELATIONSHIP BETWEEN PERCEPTION AND ACADEMIC ACHIEVEMENT OF TEENAGE PUPILS IN THE GIFTED EDUCATION PROGRAMME (GEP) IN SINGAPORE

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Abstract: This study hypothesizes that intellectually gifted adolescents in the Gifted Education Programme (GEP) in Singapore who had greater preference for perception would tend to perform less well academically owing to an inability to focus and a tendency to be easily distracted by elements in the classroom environment. Subjects were all secondary one GEP pupils in three independent schools (N=239). Academic performance was captured in terms of overall end-of-year examination results. Results of linear regression indicate a significant but negative correlation between academic achievement and perception scores. Implications of the study, together with contributions from teachers of the subjects, are discussed with respect to the perceptive trait of the gifted pupils.

Descriptors: Singapore, GEP, intellectually gifted adolescents, perception, academic achievement, distractions.

Strand: Gifted Education
Introduction
Intellectually gifted pupils in Singapore are blessed with supportive parents who are ever concerned with their development and academic attainment. In addition, these pupils have been provided with an enriched and challenging curriculum by the Ministry of Education. It appears that the necessary environmental conditions for the flourishing of talents and gifts, namely, those nurturing factors of the home and school, are in existence for gifted pupils in Singapore. It is thus worthwhile to examine the effects of the remaining personal factors, like perceptiveness, on school achievement. This paper reports on a study which hypothesized that intellectually gifted adolescents in the Gifted Education Programme (GEP) in Singapore who had greater preference for perception would tend to perform less well academically.

Definitions

Academic achievement
Academic achievement in this paper refers to the results which each GEP pupil obtained at the end-of-year examination. As all GEP pupils sit for the same examination papers which are standardized by the GE Branch, mean subject scores will give an indication of the overall academic performance of the pupil.

Perception
Perception is defined as the ability to perceive, or to know. It is the process whereby stimuli and knowledge in the outer world are transmitted to the brain via the senses of sight, hearing, taste, smell, touch and intuition (Myers and Myers, 1993). While in the state of activation, perception allows a person to become aware of things, people, ideas and occurrences.

Literature
Human beings experience and respond to the world around them primarily through the sensory representational systems. It is through the perceptive channels that knowledge is fed to the conscious, sub-conscious or unconscious mind. While sense perception allows a person to know through the powers of the senses, intuitive perception enables the person to know by way of insight. It is generally agreed that most people have a dominant sense. It seems that some individuals experience life exclusively through their eyes; others rely heavily on their ears: they see "nothing", take notice of nothing and are neither aware nor interested in the visuals; yet others are alert to the slightest sound. These individuals often appear to be inattentive when their respective dominant perception faculty is not stimulated (Adler, 1992).

Genius ... is the capacity to see ten things where the ordinary man
sees one, and where the man of talent sees two or three, plus the ability to register that multiple perception in the material of his art. Ezra Pound 1935

(From Atkinson, 1993, Ciba Foundation Symposium 178: The Origins and Development of High Ability, p. 1)

Gifted children have always been known to be intuitive, perceptive and creative in addition to being intellectually precocious (Davis & Rimm, 1994; Walberg & Herbig, 1991). In the literature, perceptive gifted adolescents are reported to be capable of "seeing several points of view simultaneously Õ and getting to the core of an issue" (Lovecky, 1993, p.41) as they have exceptional reasoning ability. These pupils are also known to grasp patterns and to find hidden meanings in information perceived by interpreting beneath the surface of things.

In fact, some researchers in the field have noted that gifted pupils possess "supersensitive nervous systems" which cause them to be highly perceptive, "hyperactive" and "highly distractible" (Silverman, 1993a; Whitmore, 1980) although it is well known that the gifted have greater concentration powers (Silverman, 1993b, p. 65). They are said to have focused attention and intense concentration only "when they are interested" (Silverman, 1993a, p.13). For Lovecky (1993), giftedness is partly characterized by divergent thinking, excitability, sensitivity, perceptiveness and entelechy.

Results of studies conducted on gifted adolescents with the Myers-Briggs Type Indicator (MBTI) showed that the majority of the gifted school population were of the perceptive personality, particularly the intuitively perceptive type (Myers & McCaulley, 1985; Chew, 1994, 1995). It appears that intuition and perception are common traits of both intellectually gifted adolescents and eminent or creative adults. In contrast to an estimated 25% of the general population who are intuitive, 88% of creative writers, 96% of scientists, 96% of mathematicians and 100% of practicing architects were reported to have the intuitive-perceptive personality (Myers & McCaulley, 1985, p. 216-218).

Persons with the perceptive attitude, according to Myers and McCaulley (1985, p. 14), tend to suspend their judgment as long as they can help it. A deficit in making judgment in due course often results in procrastination or inaction. In MBTI terminology, judgment refers to decision making. The perceptive trait, or the ability to perceive "multitudinous relationships", has also been postulated to cause decision making difficulties in gifted adolescents (Silverman, 1993b). When no decision is made, no action follows, no task is executed and nothing is achieved. This study proposes that gifted pupils with greater preference for perception, and hence lesser preference for judgment, on the MBTI will achieve lower academic performance.
Method
Subjects were 239 secondary one (equivalent to grade seven) 13-year-olds in the Gifted Education Program (GEP) in three independent schools hosting the GEP. There were 148 boys and 91 girls altogether.

The MBTI (Form G), a 126-item forced choice was used to measure the preferences of the subjects with regard to Jung’s psychological type of perception, sense perception and intuitive perception. It must be noted that high scores on the MBTI do not necessarily imply excellence in the function. However, it is stated in the MBTI Manual that it is reasonable to expect from those who report clear preferences a likelihood to develop and to use the skills, traits and habits related to the preferred psychological function (Myers & McCaulley, 1985, p. 58). For example, a person who reports high MBTI scores for intuitive perception is likely to use his intuition more frequently than another person who reports a low preference score, although the quality of his intuition cannot be inferred from the magnitude of the preference score. The internal consistency of the MBTI, measured by slit-half coefficients for gifted seventh (secondary one) to ninth graders (secondary three) are .84 for the sensing-intuition or SN index and .82 for the judging-perception or JP index (Myers & McCaulley, 1985, p.167).

The first author of this study personally administered the MBTI to all subjects in lecture theatres in all three schools. Each session took about an hour and thirty minutes. Subjects were told that these were not achievement tests and therefore did not have right or wrong answers. They were told that the tests merely indicate their psychological preferences just like their preferences for the use of the right or left hand. They were also informed that results would be kept strictly confidential for research purposes and would be made available to the individual pupil upon request. As all necessary instructions were given on the cover of the question booklet, the first author only needed to ensure that subjects did not discuss their answers while completing the MBTI.

All answers were coded by hand using stencils before they were entered into the computer for analyses. The overall or end-of-year academic achievement of the subjects in percentages, was obtained from the GEP coordinator in each school. Simple linear regression analyses were employed to study the relationships between the dependent variable of academic achievement and the independent variables of perception, sense perception and intuitive perception using SAS programmes.

Results
Results of the study are summarized in two tables. The distribution of MBTI types of the subjects, restrained to variables in this study, are
given in Table 1 below.

Table 1
Distribution of MBTI types in the sample (N=239)

<table>
<thead>
<tr>
<th>PERCENTAGE</th>
<th>All subjects</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBTI type</td>
<td>(N=239)</td>
<td>(n=148)</td>
<td>(n=91)</td>
</tr>
<tr>
<td>Perceiving</td>
<td>55.65</td>
<td>56.76</td>
<td>53.85</td>
</tr>
<tr>
<td>Judging</td>
<td>44.35</td>
<td>35.24</td>
<td>46.15</td>
</tr>
<tr>
<td>Intuitive</td>
<td>60.25</td>
<td>54.73</td>
<td>69.23</td>
</tr>
<tr>
<td>Sensing</td>
<td>39.75</td>
<td>45.27</td>
<td>30.77</td>
</tr>
</tbody>
</table>

Like gifted school samples reported in other studies (Chew, 1994, 1995; Chiang, 1992; Myers and McCaulley, 1985), the present study reported greater percentages of the perceiving and intuitive MBTI types.

The associations of the dependent variable of academic achievement with the independent variables of perception, intuitive perception and sense perception, given in terms of correlation coefficients or beta weights, are shown in Table 2.

Table 2
Correlation coefficients of academic achievement with perception, intuitive perception and sense perception of secondary one GEP pupils (N=239)

Academic Achievement
MBTI Variables

Perception 0.257***
Intuitive Perception 0.063
Sense Perception 0.038

Note: *** p < .001

It appears, from Table 2, that the academic achievement of intellectually gifted pupils is significantly and negatively correlated to their preference for perception on the MBTI.
Discussion
Compared to the MBTI types of the general school population (Lim, 1993), the GEP pupils in this study appeared to have the MBTI profiles of the minor school population, namely, that of the perceptive and intuitive types. This finding is in line with the MBTI polarities reported of creative and eminent adults (Myers & McCaulley, 1985) as intuitive perception appears to be an essential mental faculty for scientific innovation and artistic or creative production.

The results of the study indicate a statistically significant but negative correlation between academic achievement and perception ($r = -0.26$, $p < .001$); and no significant correlation between academic achievement and intuitive perception, or sense perception. This means that the higher the perception score a gifted pupil in the GEP secondary one cohort had on the MBTI, the lower his or her academic achievement in school.

These perceptive pupils are those who are curious, spontaneous, adaptable and open-minded. In MBTI terminology, the higher the perception preference scores, the clearer the preference for perception, and the more likely it is for the perceptive person to develop skills associated with perception. That these pupils turned out to be low academic achievers is indeed an interesting phenomenon.

The above finding might be interpreted from several perspectives. From the perspective of the classroom and its learning environment, the negative significant correlation of academic achievement with perception might be taken to indicate a possible lack of stimulants for the acute senses of the perceptive gifted pupils in the teaching-learning process. This is not unexpected as lessons in the GEP classroom tend to be of higher cognitive levels, focusing on abstractions and theories (Thaver, 1995). When pupils with preferences for perception are not stimulated in their dominant sense, they might be "lost" and would be unable to bridge the gap or formulate the link between theory and real life applications. They might feel that learning is meaningless and they become bored and distracted as a result. They might not be motivated to learn and eventually turn away from studies even though they are attending classes and handing assignments to their teachers.

Another interesting explanation is that the perceptive gifted pupil who has keener senses than the average person, is highly attuned and attracted to people, sound, color or any other agents in the environment, takes note of "information" almost simultaneously and is invariably distracted by a new sight, a new sound, a new smell, or a grin on the face of classmate. The thoughts of the perceptive pupil are diverse, wandering, dispersed and attracted to external stimuli as his mental energy is dissipated in noticing change agents in the immediate
environment. Such pupils are not likely to be able to concentrate on learning in the classroom; they may "suffer" in their academic studies in the long run.

The "inability to focus" trait of perceptive pupils in the GEP has also been noted by teachers. Among the teachers who had been interviewed, it was generally observed that the "more perceptive", or "very perceptive", pupils were usually "very sharp" but "often not on-task". Some teachers complained about having pupils whose "minds wander and were not with them most of the time", pupils who invariably missed the teachers' instructions, in effect, pupils who daydreamed. Feedback from other teachers indicates that many of these pupils performed below the level expected of them; the teachers said that they "could have done better" in many cases.

The sharing of the finding that the academic achievement of gifted pupils was negatively associated with perception scores on the MBTI elicited interesting comments from yet another teacher of the gifted. She said that the more perceptive pupils were the "more burdened ones".

These pupils, being more perceptive than the average pupil, were "more bothered" and "more disturbed by other things in life" other than academic attainment. They usually had many "out-of-school" interests and activities, having many friends and "relationships" was but one of them. For these pupils, energy was channeled into various fields of activities to fuel their interests; the remaining energy could hardly warrant the achievement of good academic grades. The reasons why gifted pupils who were clearly perceptive scored lower academically deserve the attention of parents, teachers and gifted pupils themselves. Further research is needed to ascertain the causes.

Conclusion
For this empirical study, it may be interpreted in MBTI terminology that the more perceptive pupils are those who tend to lack the judging attitude. These are the pupils who tend to be more indecisive, procrastinating and less action or achievement oriented. As such, the finding that GEP pupils with higher perception scores achieved lower academic scores is not surprising. To help these pupils, teachers and parents must learn to help them attain an intricate balance between preferences for perception and judgment as both are equally important psychological functions.

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