

**Does All Cream Rise?
The plight of unsupported gifted children**

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Abstract

In a ten year longitudinal study, 37 Finnish students, who had been identified as potentially gifted at pre-school using the German, Breuer-Weuffen Differentiation Test (BWDT), were again assessed against their peers for evidence of academic excellence. The students, who had received no specific support within the Finnish comprehensive school system, were found to be significantly better than their Control Group peers in their final school grades, as well as in perceptions of their own Scholastic Competence. This suggests that this method of early identification of giftedness was successful in predicting later academic excellence. The BWDT purports to measure verbo-sensor motor status, which represents an amalgam of the five language-related differentiation abilities; optical, phonemic, kinesthetic, melodious and rhythmical. Further analyses identified patterns of potential long-term underachievement.

Key words: Identification, Giftedness, Breuer-Weuffen Differentiation Test

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It is a truism to state that we are living in a rapidly changing world, in as much as there is little dispute that everything from climate to our knowledge of the basic structure of human life is all in a state of rapid flux. Consequently, we are all familiar with the term “knowledge explosion” and how it has come to typify the era in which we currently live. The reality of that explosion is that, at the moment, the quantum of the world’s knowledge is doubling every three years, and for those children who are born today, the careers that they may follow probably haven’t even been invented yet. However, in spite of such extraordinary advances in the human state, we still have over half of the world’s population who have insufficient food, and huge numbers of children die from totally preventable causes. As educators with a social conscience, how then can such problems be addressed and how can the benefits, which seem to flow to so many in the western world, be distributed more evenly?

While there is no simple solution to these inequities, possibly one of the few potential answers lies in the development of even more human talent across a wider pool of society. In such a way, the potential to expand the gains that have already been made is dramatically increased, not just for the western world but for humanity as a whole. Therefore, any possible solution lies in the development of our most precious natural resource, namely the expertise and talent of people. If we are to develop innovative and creative solutions, which also maintain the pace of growth in a humane and responsible environment, then our society must increasingly develop those persons who possess exceptional ability, regardless of background, to the limit of their potential.

While this is a laudable aim, which is espoused by virtually every educational authority, the reality is generally quite different. Putting aside such inevitable issues as funding and resources, and even discounting the philosophical objections based on potential elitism, a significant problem exists in the area of identification. This is because, in order to achieve this aim, individuals need to be challenged in their area of potential expertise from an early age, while also experiencing a considerable degree of self-determination and support (cf. Harter, 1992; Deci & Ryan, 1992). This means that they need to be identified at a fairly early age and, to date, there have been limited measures available for such identification and any such measures have been considered somewhat problematical (Torrance & Caropreso, 1999). Consequently, if the aim is to produce highly capable adults who can make invaluable contributions to society, then there is a need to identify and nurture as early as possible those children who have such potential. In an attempt to address this need, the first aim of this ten-year longitudinal study was to consider one method that appeared to make such identification possible at a very early age.

The charges of elitism which are often leveled at those programs that cater for children with exceptional talent, generally take the form of claims that such children will inevitably cope well with academic life, which could be described as the “cream always rises to the top” argument. “Not so”, argue the researchers of gifted education. They cite the high incidence of gifted underachievement, the failure of many gifted students to complete their education, the fact that many teachers claim to have never, or rarely taught a gifted student, and the consequent loss to the broader community of such lack of identification and support. Nevertheless, the criticisms are valid to some extent in that there has been no longitudinal research that has followed potentially gifted students who have received no specific support over their school career to determine whether such lack of support had any detrimental effects on their ultimate performance. However, the second, and perhaps more important aim of this study was to do just that.

The setting for this study is Finland, which has a tradition, which is common to other Scandinavian educational traditions, whereby the emphasis is on equal rights to free basic education for all. There is also a guarantee that education beyond this level is available according to individual abilities and special needs. Despite this, the reality is that the emphasis is more on the equality of educational outcomes rather than equality of educational opportunity and the pursuit of individual excellence. This has meant that there has been virtually no organized support available for gifted students.

Phase 1

The first phase of this longitudinal study (1989-1992) identified children (age 6) who exhibited potential academic giftedness ($n=37$) from within a wider preschool population ($n=211$). This was done using the German-based Breuer-Weuffen Differentiation Test (BWDT) (Breuer & Weuffen, 1986). This test purports to measure verbosenso-motor status (VSM), which represents a combination of the five language-related differentiation abilities, namely, optical, phonemic, kinesthetic, melodious, and rhythmical. VSM has been shown to be highly correlated with later cognitive development and, in particular, with the acquisition of written language (Ruoho, 1990; Breuer & Weuffen, 1986). This potentially academically gifted sample undertook a series of other tests (Raven's Matrices and Goodnow's Draw-a-Man-test) which produced parallel results. Then, after five months at school, their self perceptions about their ability to undertake various reading, writing and math tasks were assessed and found to be significantly higher ($p<.05$) than a group of their peers ($n=22$). As well, data gathered from classroom teachers after the children had completed first grade, showed significantly higher results for the potentially gifted group than for their peers ($n=18$) in terms of teacher perceptions of skill development in areas such as language, memory, physical development, and learning. In short, by any measure, they were potentially academically gifted. However, the question remained as to whether this would continue without direct academic support, so it was the role of Phase 2 to answer this question.

Phase 2

A major deficiency in much research in the area of giftedness is its lack of theoretical underpinning. Most gifted research is simply observational or philosophical, generally with a lack of empirical data (Heller & Schofield, 2000), particularly of a longitudinal nature. Torrance and Caropreso (1999) have argued the need for a set of criteria for identification for this population which is theory driven, in order that clear, theoretically sound, program specifications and appropriate instructions for the handling of potentially gifted children can be developed. In practice, as Torrance and Carapreso (1999) have stated, assessment procedures are pointless when the system is not prepared to guide and instruct students identified as being gifted according to assessment outcomes. Early research identified high levels of Planning and Simultaneous Processing as being defining factors of a gifted population (Schofield & Ashman, 1986, 1987; Schofield, 1994), while Sternberg's triarchic theory (Sternberg, 1997) has also sought to provide a cognitive perspective, but such research has been extremely limited and inevitably only targets older children. Although not the original aim of

this study, it is possible that the BWDT could provide another dimension to this theoretical underpinning and represent a starting point for the development of support programs within specific ability domains. As such, it would be invaluable. Against this possibility, is the reality that any process of identification of giftedness in pre-school age children has generally been considered to be problematic (Torrance & Caropreso, 1999).

Whether the reality of the numbers of gifted individuals in our population is 5%, 2% or even 40%, it is clear that these numbers do not translate into highly productive gifted adults, so the question remains as to what happens. One possible answer lies in the area of self-concept. If an individual develops a belief that the abilities that they possess are of limited value, then it is likely that they will do little to develop those abilities, which may result in a decline in performance in those areas. This seems to be one of a range of possible explanations for the common phenomenon of gifted underachievement. In this study, it was considered possible that, after nine years of the Finnish comprehensive school system, the potentially gifted students had experienced a loss in academic self-concept, which was not commensurate with their actual ability and performance. If this was the case, it could be argued that this was because they had received no specific support to develop their perceived potential.

Harter (1999) has argued that, for most children, there is a strong correlation between their academic self-concept and their sense of Global Self Worth, in that the school environment and school achievement generally figure so strongly in the lives of children. Where such a strong correlation exists, it has been interpreted as an indication of the importance and relevance of school in the child's life. In this study, it was considered possible that school was not considered to be challenging and relevant for those in the potentially gifted group. If they were truly gifted but had not received any specific support aimed at extending students with high academic ability, then these children had probably experienced boredom and frustration throughout their school career, making school and academic pursuits relatively valueless (cf. Harter, 1996).

Consequently, this second phase study had three major goals. In the first instance, it sought to determine whether, after nine years in Finnish comprehensive school with no specific support mechanisms, those children who had been identified as being potentially gifted in pre-school, realized that potential in terms of improved academic performance beyond that of their peers. A second goal, which was also directly linked with the first, was to determine the efficacy of the BWDT as a means of early identification for gifted children. Finally, the study sought to determine whether the academic self-concept of the potentially gifted sample differed from that of the control group, whether gender differences existed, and whether the correlation between academic self-concept and Global Self-Worth was stable across groups.

Method

Subjects

The Experimental group consisted of 37 potentially gifted children who were selected from a population of 208 six-year-old children from the Joensuu Daycare Centre in Finland. All 208 children were tested using the German based BWDT (Breuer & Weuffen, 1986). The Control group consisted of the remaining 171 students in the Centre. When the target popula-

tion was in ninth grade, an attempt was made to trace all 208 students and to examine their school grade history. However, only 34 subjects from the Experimental group and 131 subjects from the Control group were located. Because testing was being undertaken at the end of the last year of compulsory schooling and because grades had already been finalised and there was no enforcement of attendance, only 31 questionnaires from the Experimental group and 110 from the Control group were finally returned.

Instruments

Harter's (1983) Revised Perceived Competence Scale for Children (SCSC), which was translated into Finnish by the second author, was used because it provided a differentiated analysis of self-concept through its six sub-scales. The appropriateness of this instrument as a useful tool for a gifted population had also been recommended in the literature (cf. Hoge & Renzulli, 1993; Colangelo & Assouline, 1995). Reliabilities of the translated scale were similar to those obtained by Harter. Grade reports, which yielded a grade point average (GPA), on all students were also obtained with the permission of the school authorities.

Results

A 2x7 between subjects multivariate analysis of variance (MANOVA) was performed on the six self-concept sub-scales and GPA. Independent variables were grouping and gender. Grouping effects are detailed in Table 1. Significant differences were found between the Experimental and Control groups in both GPA and perceived Scholastic Competence (see Table 1), with the Experimental group being higher on both measures. The correlation coefficient between measured pre-school verbosenso-motor status (VSM) as measured by BWDT and GPA was significant ($r = 0.42$, $p < .001$). This result was ten years after the base-line measurement. These results indicated that measured VSM status at preschool provided a robust indicator of performance in a broad range of academic areas, throughout the Finnish comprehensive school system.

Table 1:
Post hoc Scheffé test on dependent variables GPA and scholastic competence for experimental and control groups

		Mean	S.D.	p	η^2
GPA	Experimental group {1}	8.63	.83		
	Control group {2}	7.87	.67	.000***	.99
Scholastic Competence	Experimental group {1}	2.96	.54		
	Control group {2}	2.58	.52	.000***	.93

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Academic Achievement between Groups by Gender

Given that girls have traditionally outperformed boys academically (e.g., Heller, 1992), the effect of gender in this study was also examined. Table 2 shows results of this comparison. When interpreting these results, it should be remembered that the Scheffé test is considered to be extremely conservative.

It was to be expected that the girls in both groups outperformed the boys, while the girls in the Experimental group outperformed both the boys and the girls in the Control group. The boys in the experimental group performed significantly better than the boys in the Control group but were not significantly better than the girls in the Control group. In summary, a high level VSM score in pre-school appears to be highly predictive of future academic success. At the same time, the boys in both groups seemed to be performing at a lower academic level than might be expected or desired, although such differences were in line with previous research.

Table 2:
Post hoc Scheffé test on dependent variable GPA by study group and gender

Group	Gender	Mean	S.D.	{1}	η^2	{2}	η^2	{3}	η^2
Experimental group									
	Girls {1}	8.883	.61						
	Boys {2}	8.338	.73	.383	.58				
Control group									
	Girls {3}	8.151	.85	.013*	.84	.892	-		
	Boys {4}	7.606	.86	.000**	.99	.009**	.89	.003**	.91

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Self-concept Sub-scales

Further analysis of the Scholastic Competence subscale differences between groups by gender found that much of the overall significant difference between the Experimental and Control groups, was largely attributable to the girls. It was considered possible that this reflected the “un-cool” nature of high academic achievement among boys, which then affected both their GPAs and their perceived Scholastic Competence. Both of these results signal that there are major problems for those boys who have been identified as having high academic ability.

Of even more concern was the correlation between the Scholastic Competence and Global Self-worth sub-scales for the Experimental group. Harter (1996) found that there was a reasonably high correlation between these two sub-scales for older children and adolescents, and that the correlation was even stronger for those students for whom scholastic competence was considered important. This should be especially the case for gifted students (Harter, 1996). However, while a significant correlation between these sub-scales was found in the Control group ($r=0.47$, $p<.01$), the correlation for the Experimental group was non-significant ($r=0.15$, $p>.05$). According to Harter (1996), this result suggests that students find

school to be of relatively little importance and virtually valueless for their sense of self. That this should be the case for those who have the capacity to excel academically is of considerable concern.

Discussion

In summary, three major findings emerge from these analyses. The first is that early identification of gifted students was possible using the BWDT and that such identification was valid in that students so identified continued to display evidence of high academic ability throughout their school career. Secondly, it appears that for boys who were identified as gifted, the social pressures to under-perform were just as powerful as for their non-gifted peers. In other words, half of the gifted population was under-performing. The third finding was that, whether they were under-performing or not, the gifted students did not appear to value their academic ability as an aspect of their overall self. The implication which can be drawn from this is, that in an educational system which emphasizes uniformity, high ability is neither valued nor nurtured. Consequently, while gifted students may survive without such nurture, they will almost certainly not develop to the limits of their potential, so that the world is inevitably the poorer.

On a more positive note, practitioners can take heart that early identification now seems possible, despite previous research which has suggested that this is extremely problematic (Torrance & Caropreso, 1999). Use of the BWDT should allow children to receive appropriately deep and stimulating environments from the point of their earliest contact with formal education. The results from the BWDT appear to be readily translated into practical curriculum requirements in terms of either strengths or deficits (Ruoho, 1995). However, this is an area which needs to be explored more fully.

Finally, to answer the question posed in the title of this paper: yes, cream does rise, but without some form of treatment and separation, then it quickly turns sour, and when that occurs, the whole vat of milk is spoiled. The world cannot afford to waste any portion of the greatest of its natural resources, namely the expertise and talent of its population.

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