The link between academic self-concept, self-efficacy and demonstration of special abilities

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Abstract:

Providing children with an opportunity to participate in an inclusive enrichment programme can lead to significant changes in academic self-concept and in teachers' recognition of children with special abilities. Within this paper the links between the classroom environment, children's academic self-concept and demonstration of behaviours are explained from Bandura's theoretical perspective. The term "special abilities" is used in this paper, rather than the current term "gifted and talented" because this was the terminology used by the teachers who participated in the research study described below. Special abilities has been defined as an interaction between the three traits of above average ability, a high level of task commitment and a high level of creativity (Renzulli, 1986). Prior to outlining the details of the research study, the dimensions of academic self-concept and self-efficacy are introduced as these constructs contribute significantly to behaviour performance.

Academic self-concept

An important feature recurring within the definition of self-concept, applicable to both academic and non-academic areas, is the manner in which an individual's self-concept is explained as a result of *interactions and experiences with others.* This emphasis on the role of interactive experiences highlights the developmental nature of self-concept (Mendaglio and Pyryt, 2003) and reinforces the fact that self-concept is learned and acquired over time. This being the case, teachers have an important role in the formation of children's self-concept because as Fox (1993) states, "(T)he classroom is one of the major challenges in pupils' lives so the feedback that teachers give (children) will shape their whole conception of themselves" (p.68).

Academic self-concept is a dimension of self-concept. It is defined as "… a relatively stable set of attitudes and feelings reflecting self evaluation of one's ability to successfully perform basic school related tasks such as reading, writing, spelling and maths" (Boersma and Chapman, 1992, p.1). Much of the literature in the area of self-concept shows a causal link between academic self-concept and academic performance (Boersma and Chapman, 1992; Meyer, 1991; Chapman, 1988; Chapman and Wilkinson, 1988; Marsh, Parker & Barnes, 1985). Lyon and MacDonald (1990) provide correlational evidence demonstrating that academic self-concept makes a significant contribution in predicting academic achievement. However, correlations in themselves do not prove causation and, as Strein, Cain, Edelman and Schwalb (1989) explain, it is not clear "… to what degree academic self-concept causes achievement, is an outgrowth of it or whether the relationship is reciprocal" (p.8). In other words, while there may be a definite link between academic self-concept and achievement, it would be over simplistic to assume that there are not other significant variables which contribute to this relationship.

Self-efficacy

Bandura (1986) explored the link between self-concept and behaviour and in doing so introduced a dimension of self-concept known as *self-efficacy*. Self-efficacy is defined as "… an individual's belief in his or her ability to perform a behaviour in a given situation" (Bandura, 1986, p.86). Bandura explained that an individual's perception of self-efficacy influences:

- whether a behaviour will be initiated
- how much effort will be expended
- whether a behaviour will be continued in the face of obstacles

Bandura specified four principal sources of information which influence one's perception of self-efficacy. These are

- performance accomplishment   (occurring from personal mastery experiences)
- vicarious experiences   (based on social comparisons)

- verbal persuasion   (leading someone, through suggestion, into
                               believing s/he can or cannot cope successfully
                               with tasks)

- emotional arousal   (when an individual is in an environment where
                               s/he is not made to feel tense or afraid)

Bandura stresses that it is the interactive as well as the independent sources of information which influence an individual's perception of self-efficacy. To explain the link between self-concept, self-efficacy and behaviour, Bandura presents a model of determinism. In this model Bandura introduces three variables which work in interaction with one another. These are described as cognitive personal, environmental and behavioural. Cognitive/personal variables can be defined as "… traits, states or cycles of arousal which are learned or unlearned" (Gage and Berliner, 1991, p.327). They can be described as constructs within the affective domain which deal with feelings/emotions and attitudes, such as self-concept, locus of control, self-efficacy. Environmental variables are factors within the environment which can influence an individual's behaviour such as a child's subject choice at school, class size, enrichment opportunities and use of specific pedagogical approaches. According to Bandura cognitive/personal variables, environmental variables and the demonstration of behaviour work in interaction with one another and each operate together to produce change. Bandura likens the connection between each of the variables to a triangle (as below) with each variable being connected to the others and each being an interacting determinant of each other.

Cognitive / personal

Environmental   Behavioural
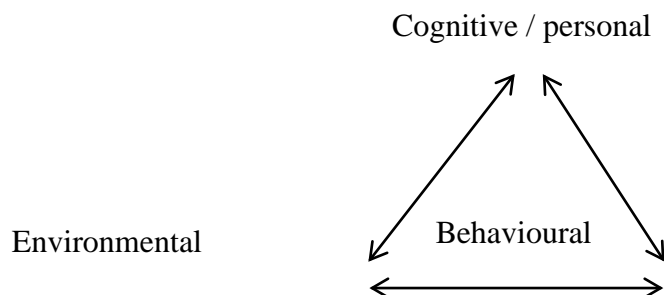
A most important feature of Bandura's model of determinism is that the variables can act **bi-directionally** so that each can produce change or be the product of change. In other words, according to Bandura's theory, cognitive/personal variables such as self-concept, environmental variables such as enrichment opportunities and demonstration of behaviour can shape and affect each other. Based on Bandura's model it seems logical that intervention within the classroom environment could be a powerful catalyst in producing change in an individual's self-concept, which could in turn produce change in the behaviour an individual demonstrates. With these reciprocial links in mind, a curriculum model, known as Renzulli's Enrichment Triad (Renzulli, 1977) is described below. Within the field of gifted education this Triad model is well- known for providing a framework for teachers in relation to planning and designing differentiated programmes for learners.

Renzulli's Enrichment Triad Model

Renzulli's Enrichment Triad is one of the most widely used models for catering for children with special abilities. There are three qualitatively different stages of enrichment within the model. Type I enrichment tasks are based on "general exploratory activities" which can reinforce children's current interests or stimulate their enthusiasm in a new topic area. An important component of Type I enrichment is that it "… capitalizes on differences in children's interest and learning styles" (Renzulli, 1994, p.212). Type II enrichment focuses on enhancing children's process skills in areas such as metacognition, research, written and oral communication. Type II enrichment tasks can be planned systematically by the teacher or they can develop as an outcome of children's special interests. A major advantage of Renzulli's Enrichment Triad is its potential for inclusiveness, in that Type I and II enrichment activities can be used with all children in the class. Type III enrichment is for children demonstrating special ability behaviours. In Type III enrichment, children take on the role of first hand investigators and they can apply their knowledge, thinking and creative skills to an area of personal research. Type III investigations aim to empower the learner because the child has a major role in planning and designing his/her personal research. According to Renzulli, the Enrichment Triad Model is designed to help students gain personal knowledge about their own abilities, interests and

preferred learning styles. This is particularly relevant in relation to the areas of self-concept and self-efficacy because the acquisition of such knowledge can both reinforce and enhance children's confidence in their academic self-worth and in a positive belief about their own abilities.

There is a strong metacognitive component within Renzulli's model which gives children opportunities to gain knowledge and awareness of their own cognitive processes. Such cognitive awareness is a powerful factor influencing academic self-concept (Mendaglio and Pyryt, 2003) because it can strengthen children's feelings of academic competence and promote confidence in aspiring to achieve higher academic goals. The model can be structured so that children have opportunities to work with peers and mentors who provide scaffolding for the learner. Scaffolding occurs when there is graduated assistance during learning from someone who is experienced and knowledgeable, such as a teacher or mentor (Smith, 1998). Scaffolding usually develops during paired activities such as peer tutoring, peer problem solving, a team investigation or when working with a mentor. According to Vygotsky (1978) children's cognitive development is enhanced when scaffolding occurs, because their level of potential can be developed as they are guided by others who are more capable. Interestingly, research by Stanley, Siegel, Cooper & Marshall (1995) found that significant increases occurred in the number of children identified as gifted when scaffolding was incorporated as part of an identification process.

Current New Zealand research

In the field of gifted education there is a growing concern that some ethnic and socio-economic groups are overlooked when children are nominated for participation in enrichment programmes. While much has been written about American and British concerns relating to under-representation in gifted programmes of children from culturally diverse and low socio-economic backgrounds, this concern has relevance in the New Zealand context as well. Moltzen (1996) states that "… under-representation of culturally different children in programmes for the gifted is an internationally recognized phenomenon and New Zealand is no exception" (p.417). Such under-representation is of major concern because, as most experienced New Zealand

teachers are aware, "… gifted and talented children are found in every ethnic and socio-economic group" (Strip and Hirsch, 2000, p.8).

The processes of identification for children with special abilities have changed markedly in New Zealand over the last 20 years with the values of a multi-faceted approach now being more widely recognized. Although a teacher observation scale for identifying children with special abilities has been developed in New Zealand (McAlpine and Reid, 1996), a multicultural scale was not included. The authors highlight the challenges they encountered in their efforts to develop a scale for ethnic minority groups, however they urge New Zealand teachers to "… consider the backgrounds of minority children … and exercise cultural sensitivity in their observations" (p.3). Unfortunately however, this is not as easy as it seems because, as Davis and Rimm (1998) explain, children from different ethnic groups and lower socio-economic groups can actually be disadvantaged by teacher selection since teachers may have lower expectations for these children. In relation to this area of under-representation, Renzulli warns against pre-selection strategies for the identification of minority ethnic groups. Instead Renzulli and Reis (1991) recommend that *a change in direction* is needed in identification so that more children are given more opportunities to demonstrate their potential. They suggest flexibility between identification and programming so that children at risk of underachieving can have the opportunity to demonstrate their potential.

A New Zealand research study was designed to translate Renzulli and Reis's (1991) flexible identification proposal into practice and to look at whether this had any effects on children's academic self-concept (Rawlinson, 1998). Approximately 200 Year 4, 5 and 6 children and seven teachers took part in the Auckland study. Over half the children involved were of Pacific Island descent. An enrichment package, written around a thematic approach, was designed and based specifically on the three key enrichment components from Renzulli's Enrichment Triad. Four of the teachers in the study were asked to incorporate the enrichment package into their class programme over an eight week period. This meant that all children in these classes were given the opportunity to participate in the three stage enrichment programme. Three teachers and their classes were control schools so that instead of working with the enrichment

package, these children worked on the regular class programme which their teachers planned for them. It is important to emphasize that, although the children in the control group were not working with the enrichment package, these children were participating in high quality teaching/learning programmes over the course of the same school term. At the beginning and again at the end of the school term when the intervention took place, all children in the treatment and control classes completed a Perception of Ability Scale for Students (PASS). This questionnaire is unique in that it focuses specifically on children's academic self-concept as distinct from their general self-concept. Also, all teachers in the study were asked to complete an adapted version of the Renzulli, Smith, White, Callahan & Hartman Special Abilities Scale (1977). This scale was completed both at the beginning and at the end of the school term within which the enrichment package was used.

Some interesting results emerged from this research study in relation to children's academic self-concept and teacher's recognition of children with special abilities. All children who participated in the enrichment programme showed significant increases in their academic self-concept, unlike the children in the control group. Interestingly, Pacific Island children made significant gains in the area of academic self-concept; this did not occur for the group of children in the control group. Also, following the enrichment programme, there was a significant increase in teachers' recognition of children with special abilities, particularly for the Pacific Island children. This was not the case for those in the control group.

Some points to consider

An inclusive enrichment programme
The inclusive nature of the enrichment package may provide an explanation for the significant increases in children's academic self-concept and for the teachers' recognition of special abilities. In this study the enrichment package was designed so that it formed an integral part of the class programme, an approach which Vialle (1999), Moltzen (1998), Renzulli (1986), and Feldhusen (1986) strongly recommend. Children were not pre-selected, withdrawn or put in a position where they had to draw attention to themselves in order to participate in enrichment tasks. As Landvogt

(1991) states "… inclusion in special programmes and acknowledgement of ability may be a way of encouraging children who have already become disillusioned either with their own perceived capability or with a system to which they are expected to conform" (p.8). In this research study most children in the treatment group did not pursue tasks to a Type III enrichment level, however the opportunity for participation was created for them. This opportunity for inclusion may have been all that was needed to strengthen the children's academic self-concept which in turn may have enhanced their confidence to demonstrate their special abilities.

The direction of the identification process

In this research study the direction of the identification process was changed as Renzulli and Reis (1991) recommended, so that the focus of intervention was on the classroom environment rather than on behavioural pre-requisites or rigid identification criteria. In other words identification was embedded in the classroom environment so students' special abilities and qualities could surface (Ministry of Education, 2000). In accordance with Bandura's (1986) notion of bi-directionality, such environmental intervention may have been the catalyst to produce the significant change in academic self-concept for the children in the treatment group.

Teachers' self-efficacy

This study identified a significant increase in teachers' recognition of children with special ability. The construct of self-efficacy may have relevance here. Although measures of teachers' self-efficacy were not taken it is possible that the significant increase in teacher's recognition of children with special abilities may have been influenced by an increase in teachers' self-efficacy as a result of their successful work with these children. According to Bandura (1986) self-efficacy can be enhanced by successful performance and positive emotional arousal. All teachers in the study were fully involved in the delivery of the enrichment programme. The teachers made the decisions about when to adjust and adapt the enrichment programme so that it supported the children in the class if special abilities were shown. In this research the classroom teachers were acknowledged as professional educators who were experienced in working with children with a range of abilities. McAlpine (1996) emphasises the importance of teachers being given this professional responsibility.

Moltzen (1998) makes a strong case in support of catering for children with special abilities in the regular classroom. He explains that it is usually the child's classroom teacher who has the opportunities to be most perceptive and responsive to individual interests and abilities on a regular basis. While there is certainly a place for withdrawal programmes for children with special abilities and while Braggett and Moltzen (2000) describe such programmes as popular supplementary provision for gifted and talented children, it should be emphasised that these programmes are just that - supplementary. If "… **all children** have the right to an education that acknowledges and respects their individuality and that offers them maximum opportunities to develop their strengths and abilities" (Ministry of Education, 2001 p.16) then it is essential that **all teachers** have the opportunity to plan and cater for children with special abilities within their classrooms.

Conclusion

The link between academic self-concept, self-efficacy and demonstration of behaviour has been presented in this paper. In the research described, changing the direction of the identification process resulted in significant changes in children's academic self-concept and teacher recognition of children with special abilities. Vialle (1999) states that when catering for groups of children who are under-represented in gifted and talented programmes "… the emphasis should be shifted from identification and provision to identification *through* provision" (p.252). If "… giftedness is a condition which can be **developed**" Renzulli (1986, p.60) then surely it is our responsibility to create a learning environment which gives as many children as possible the chance to develop and demonstrate their special abilities. Providing more inclusive enrichment programmes in our schools could be a promising approach.

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