SELF-EFFICACY PERCEPTIONS OF CHINESE PRIMARY-AGE STUDENTS WITH SPECIFIC LEARNING DIFFICULTIES: A PERSPECTIVE FROM HONG KONG

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In the field of specific learning difficulties research, interest has recently turned to affective and motivational issues as possible causal or exacerbating factors. In particular, studies have suggested that students with specific learning difficulties (SpLD) have diminished perceptions of their own capabilities as a result of persistent and frequent failure. Weakened beliefs in self-efficacy predispose the students to further poor outcomes through reduced confidence and effort. This study explores the perceptions of self-efficacy in both academic and non-academic domains revealed by Chinese primary-age students with learning difficulties. Data were collected by questionnaire (the Academic and Non-academic Self-efficacy Scale: ANASS) from 34 students identified with SpLD (individually interviewed; oral administration), and 167 students without learning problems (group administration; written form). Results indicate that the SpLD students had significantly weaker beliefs in their own efficacy in the academic learning domain, compared to the students making normal progress. The differences were most marked in their learning of both English and Chinese language skills. There was no difference between the two groups in self-efficacy related to the non-academic domain. An important finding in the study is that Chinese children with SpLD appear to have more positive beliefs in their self-efficacy than is implied for their counterparts in studies in other cultures. These findings are discussed in this paper, together with brief suggestions for practical implications and possible further research.

Within the general school population there are students who have significant problems in acquiring basic academic skills, even though they have normal intelligence and adequate opportunity. Over the past century these students have been given various classifications, including *word-blind*, *learning disabled*, *developmentally dyslexic* and *learning disordered* (American Psychiatric Association, 1994; Bannatyne, 1971; Hinshelwood, 1895; Kirk, 1962; Orton, 1928). Most recently these students are simply described as having a *specific learning difficulty* (SpLD) (Prior, 1996; Salili, 1999). This term is intended to differentiate them from other students that underachieve due to lack of ability, poor motivation, lack of opportunity to learn, and social or linguistic disadvantage.

The prevalence rate for students with specific learning difficulties is not high — probably in the order of 2% to 4% in English-speaking countries (American Psychiatric Association, 1994; McCoy, 1995). In countries where a language other than English is used the prevalence rate varies; but it is clear that these specific problems in learning basic academic skills do exist in other written languages, including those not utilizing a phonic or alphabetic code (Ho, Chan, Tsang & Lee, 2002; Leong & Joshi, 1997; Woo & Hoosain, 1984).

Students with Specific Learning Difficulties

Students with specific learning difficulties (SpLD) are, by definition, of at least average intelligence and are free from any significant cognitive or sensory impairment. They exhibit no primary emotional disorders and they have not suffered any marked degree of cultural or linguistic disadvantage. Like all

other students, students with SpLD have had normal opportunities to learn through exposure to conventional teaching methods—yet they exhibit extreme difficulty in acquiring adequate proficiency in reading, writing, spelling and computational skills (Lyon, 2002; Silver & Hagin, 2002). In addition, these students frequently exhibit other learning and adjustment problems in the domains of expressive and receptive language, problem solving, physical skills, self-management, motivation, and social adjustment (Fletcher, Lyon, Barnes, Stuebing, Francis, Olson, Shaywitz, S. & Shaywitz, B., 2002). Learning difficulties are frequently accompanied by secondary emotional problems (Westwood, 2004a).

For many years research in the field of specific learning difficulty (SpLD) tended to focus on academic, cognitive and perceptual factors associated with learning problems, rather than personal, affective and motivational dimensions. In recent years however, interest has developed in investigating these other correlates of SpLD and the literature in this field has expanded considerably (e.g. Baum & Owen, 1988; Bryan, 1998; Clever, Bear & Juvomen, 1992; Hampton & Mason, 2003; Klassen, 2002a; 2002b). One area of particular growing interest is the personal perception of self-efficacy held by students that have experienced repeated academic failure over a long period of time. These students may be expected to exhibit diminished beliefs about their own capabilities in learning situations, and such beliefs in turn are likely to reduce motivation and confidence.

Self-efficacy

Maddux and Gesselin (2003, p.219) have defined self-efficacy in these terms, *Self-efficacy beliefs are beliefs (accurate or not) about one's competencies and one's ability to exercise these competencies in certain domains and situations.* These writers suggest that self-efficacy is an evaluation of how well one can mobilize one's cognitive, physical and emotional resources to accomplish specific goals. The concept of self-efficacy therefore embraces all the beliefs that individuals have about their own capability to carry out particular tasks successfully and to execute specific courses of action necessary to produce desired outcomes (Bandura, 1997; 1999).

An individual's self-efficacy beliefs tend to be domain-specific rather than general. For example, one may feel efficacious in relation to writing an essay but incompetent in solving mathematical problems. Or one may feel efficacious in relation to non-academic pursuits but much less capable in academic tasks. According to Klassen (2002a) personal estimates of self-efficacy are really a form of metacognition or self-awareness; and self-efficacy is closely bound up with an individual's capacity to identify the causes of his or her successes and failure (*attributional style*) (Tabassam & Grainger, 2002).

Our perceived self-efficacy is a major factor in determining our willingness to take on challenges in life. Self-efficacy determines how much effort people will put in to a task, how long they will carry through a task if it is difficult, and ultimately the degree of success achieved (Klassen, 2002b; Rathus & Nevid, 1986). Positive self-efficacy beliefs can have a beneficial impact on academic performance (Lee, 1998). Bandura (1996, p.812) has remarked, *The stronger the perceived self-efficacy, the higher the goal challenges people set for themselves and the firmer their commitment to them*. High perceived self-efficacy in a particular domain such as school learning is important because it enhances a student's motivation and is therefore a causal factor in future academic achievement (Csikszentmihalyi & Rathunde, 1998; Grasha & Kirschenbaum, 1986; Pressley & McCormick, 1995). In contrast, approaching a task with low self-efficacy feeds a self-perpetuating cycle of learned helplessness, usually resulting in poor outcomes (McCabe, 2003).

Schunk and Pajares (2002) have pointed out that, compared with students that doubt their learning capabilities, those who feel efficacious for learning participate more readily, work harder, persist longer when they encounter difficulties and achieve at a higher level. Academically underachieving students (such as those with SpLD) have their self-efficacy beliefs constantly weakened because they see other students with less ability being more successful.

Self-efficacy in students with learning disability

There is already evidence to suggest that students with specific learning difficulties commonly develop negative beliefs in their own capabilities. Studies have shown that students with SpLD tend to have lower scholastic self-efficacy than students without SpLD (Baum & Owen, 1988; Clever et al., 1992; Tabassam & Grainger, 2002). Furthermore, those SpLD students with the highest IQs appear to have

the lowest perceptions of academic self-efficacy (Hampton & Mason, 2003), possibly because they are more keenly aware of their weaknesses.

Klassen (2002b) provided an elegant review of the research and theories relating to the self-efficacy of SpLD students. When students experience frequent failure their perceived self-efficacy as learners tends to be seriously undermined. As a result, they may be unwilling to take risks or to put in the amount of effort necessary for improvement (Cosden, Brown & Elliott, 2002). In extreme cases, they feel completely helpless to improve their situation and easily become passive learners (Craske, 1988; Hampton & Mason, 2003). Students with low perceived self-efficacy are reported to be much less strategic in their approach to learning and much more teacher dependent (Sewell & St George, 1999). Recently, Burden (2004) has commented that how students with learning disability feel about themselves as learners can impact significantly on how they perform.

It must be noted, however, that not *all* SpLD students have negative self-efficacy beliefs. A few students with SpLD appear instead to have unrealistically positive beliefs about their own capabilities — for example believing themselves able to complete particular tasks easily only to find later that the tasks are much too difficult (Klassen, 2002a). These inaccurate estimates of self-efficacy may develop from faulty analysis of task requirements or from lack of self-knowledge — two weaknesses known to be common among students with learning difficulties (Klassen, 2002b).

Improving self-efficacy in students with SpLD

Sewell and St George (1999), drawing heavily on the work of Bandura (1997), indicate that beliefs concerning one's self-efficacy can be developed via four main influences (i) through direct experience of personal success (ii) by observation of others achieving successfully through their own efforts rather than innate ability (ii) constructive and positive feedback from others (iv) self-persuasion regarding one's own capability. The writers suggest that deliberate feedback and persuasion from others (e.g. from teachers) is the *least effective* method of modifying learners' beliefs about their own efficacy but it remains one of the most frequently used. The most effective method for improvement is likely to be closely related to teaching methods and curriculum activities. Good teaching should ensure that students experience frequent success rather than failure, and are thus motivated and willing to take on challenging tasks. For this reason, effective teaching is likely to play the key role in bringing about the development of positive self-efficacy in learners. Experience of success as a result of personal effort is the main influence responsible for building positive self-efficacy beliefs. In recent years interest has been shown also in other methods for strengthening self-efficacy in students with SpLD. These students are notoriously poor at developing and applying effective learning strategies or task-approach skills; and it has been found that strategy instruction (*cognitive training*) can enhance self-efficacy for learning (Cole & Chan, 1990; Firth, 2003; Sewell & St George, 2000). Schunk (1995), reviewing relevant literature on strategy training, concludes that self-efficacy correlates positively with the effective use of learning strategies, and therefore, self-efficacy may be increased by teaching students to use effective task-approach strategies — such as developing mental plans of action for writing stories, completing projects, or solving mathematical problems. In one specific example, McCabe (2003) recommends increasing students' self-efficacy for test taking by directly teaching effective test-taking strategies. It is now believed that strategy training can help counteract some of the maladaptive passivity and helplessness common in SpLD students by enhancing their awareness of their own capabilities (Pressley & McCormick, 1995).

Focus of the present study

The study reported here set out to examine the self-efficacy beliefs of a sample of Chinese students of primary school age with identified SpLD. Their perceptions were compared with those of a group of students of a similar age range making normal progress in school learning. It was hypothesized that compared with students that are learning normally these students would display evidence of lowered levels of perceived self-efficacy.

Method

Subjects

The two groups of students in this study comprised (i) a sample of 34 students identified with SpLD, and (ii) a random sample of 167 students of corresponding ages (Primary 3 to Primary 6 levels) without learning difficulties (NLD). The students in both samples were distributed across classes in fifteen primary schools (four schools for the NLD sample and 11 schools for the SLD sample) in Hong Kong. The schools were invited to participate in the study if they had any students on roll assessed and

identified as having a specific learning difficulty by an educational psychologist. Table 1 (next page) summarises the demographic details relating to both samples.

It must be noted that English was the second language for all subjects; the children's first language being either Cantonese or, in a few cases, Putonghua.

Instrument

A 16-item questionnaire, *Academic and Non-academic Self-efficacy Scale (ANASS),* was developed by the writers specifically for this study. The instrument was prepared first in English and then translated into Chinese. The items in the questionnaire cover key aspects of self-efficacy related to academic tasks appropriate for students of primary school age, and items related to non-academic pursuits and interests. The content of the questionnaire was influenced to a small degree by Bandura's (1990) well-known *Multidimensional Scales of Perceived Self-efficacy* and also by a Chinese adaptation of the *General Self –Efficacy Scale* of Zhang & Schwarzer (1995); but the items were determined chiefly by the writers' own perceptions of self-efficacy in children of primary school age, drawing on key domains of self-efficacy as summarised by Maddux & Gosselin (2003).

The questionnaire embodies a 6-point Likert-type rating scale for each item, with 1 indicating weak ability in an area identified in a given statement and 6 indicating strong ability. The actual items in the questionnaire are found in Table 2. The stem for each item asked, *How good are you at…(a specified area of learning, performance or skill acquisition)?*

Prior to the study, feedback on the content and suitability of the questionnaire was obtained from relevant professionals (educational psychologists, counsellors, and teachers). As a result, some modification was made to the wording of several items in the Chinese version.

Subsequent work with the ANASS indicated an overall internal consistency coefficient of 0.88 for the total scale, which is acceptably high reliability for this type of instrument. Correlations between the total score on ANASS and the Academic Subscale score and Non-Academic Subscale were 0.93 and .94 respectively. Later factor analysis (principal component method with varimax rotation) suggested a four-factor solution for ANASS, namely, 1. a main factor associated with the learning of oral and written Chinese language, accounting for 37.1% of the variance; 2. a factor associated with learning practical and technical skills, accounting for a further 10% of the variance; 3. a factor clearly associated with the learning of oral and written English language, adding a further 7.1% to the variance; 4. a weaker factor associated with personal application of practical skills together with the learning of mathematics. This final factor contributed only 6.3% to the variance. For further information on technical aspects of ANASS see Yuen, Westwood & Wong (2004).

Procedure

In the participating schools the students with SpLD and the students without learning difficulties (NLD) all completed the *Academic and Non-academic Self-efficacy Scale (ANASS).* The students without learning difficulties completed a group-administered written form of the questionnaire. For the SpLD students the questionnaire was administered orally and individually to avoid any possibility that a student might not be able to read and understand the items. The oral administration was conducted by the students' own teacher, a student counsellor in the school, or by the research assistant engaged for this project.

Results

Demographics

Table 1 provides information on the sample of students with no learning difficulties (NLD) and the selected group of students with specific learning difficulty (SpLD) surveyed in this study. In the NLD group the 167 students were fairly evenly distributed across four levels (Primary 3 to Primary 6 inclusive). The sample contained slightly more boys than girls, but the imbalance was not significant. In the SpLD sample the 34 students were not so evenly spread across the year levels, with more students in Primary 3 than in any of the upper primary classes. Gender imbalance is very noticeable in the SpLD sample, with over seven boys to every girl student. This imbalance mirrors the reportedly much higher prevalence of males in the SpLD population as a whole (Prior, 1996).

Originally the SpLD sample (n = 39) contained 5 students from Primary 1 and Primary 2 classes, but these subjects were excluded from the data analysis reported here because they were younger than any students in the comparison NLD sample.

Table 1
Demographics of the Students without Learning Difficulties (NLD) and Students with Specific Learning Difficulties (SpLD)

	Students without learning difficulties (NLD) (n= 167)		Students with specific learning difficulties (SpLD) (n= 34)	
Demographic	*n*	%	*n*	%
Gender				
Male	86	51.5	30	88.2
Female	77	46.1	4	11.8
No Response	4	2.4		
Grade*				
P.3	37	22.2	14	41.2
P.4	41	24.6	9	26.5
P.5	43	25.7	6	17.6
P.6	45	26.9	5	14.7

*One student without learning difficulties did not report his grade.

Self-efficacy

Table 2 summarizes the mean ratings for the two groups NLD and SpLD based on responses to the sixteen items in the *Academic and Non-academic Self-efficacy Scale (ANASS)*. The items were each rated using a 6-point scale where a high rating indicates high perceived self-efficacy in the given skill, task or performance. A mean rating of 4.5 or above can be taken to represent a reasonably strong personal belief concerning self-efficacy in the context of each given situation. A mean rating below 3.0 suggests weak perceptions of efficacy.

Inspection of Table 2 shows that both the NLD and the SpLD students rated their beliefs at above 3.7 in almost all items, with no ratings below 3.0. The NLD students obtained mean ratings well above 4 in 15 out of the 16 items (93.75%) while the SpLD students rated themselves above 4 in 10 items (62.50%). Separate analysis of the group mean scores representing the subtotals on the two subscales ('Academic Self-Efficacy', and 'Non-Academic Self-Efficacy') indicates that the SpLD students had significantly lower confidence in their own capabilities in academic domain when compared with the NLD group ($F = 9.45$, $p < .01$). In the non-academic self-efficacy domain the two samples performed virtually identically.

In terms of responses to separate items within the ANASS, the NLD and SpLD students differed significantly in only 2 out of the 16 items. The items in which the SpLD students expressed lower self-efficacy were: *Item 5 "How good are you at learning Chinese reading skills?"* (NLD group mean 4.51; SpLD mean 3.65. $F = 14.09$, $p < .001$); and *Item 11 "How good are you at learning English conversation skills?"* (NLD group mean 4.08; SpLD group mean 3.24. $F = 9.23$, $p < .01$).

Despite the differences mentioned above, it is important to note that in general the students in both groups responded to the questionnaire in a fairly positive manner. It can be concluded therefore that on the *Academic and Non-academic Self-efficacy Scale* both groups exhibit generally positive views of their own efficacy.

Table 2
Academic and Non-academic Self-Efficacy: Comparing Students without learning difficulties (NLD) with those having Specific Learning Difficulties (SpLD)

	Students without learning difficulties NLD (*n*= 167 , 83.1 %)		Students with Specific Learning Difficulties SpLD (*n*= 34 , 16.9 %)		
Items & Subscales	Mean	SD	Mean	SD	F-value
How good are you at ….					
1. Learning mathematics	4.33	1.35	3.97	1.55	1.91
2. Building models from cardboard or plastic	4.13	1.45	4.15	1.79	0.01
3. Learning science	4.72	1.11	4.53	1.38	0.73
4. Learning a new card game or board game	4.80	1.18	4.44	1.24	2.53
5. Learning Chinese reading skills	4.51	1.19	3.65	1.37	14.09 ***
6. Drawing pictures	4.46	1.53	4.56	1.56	0.11
7. Learning Chinese writing skills	4.20	1.40	3.77	1.63	2.53
8. Finding things that get lost	4.43	1.37	4.21	1.51	0.71
9. Learning computer skills	4.92	1.13	4.53	1.66	2.79
10. Playing sport	4.78	1.30	5.03	1.11	1.10
11.Learning English conversation skills	4.08	1.47	3.24	1.48	9.23 **
12. Repairing toys or models if they get broken	3.78	1.59	4.16	1.75	1.54
13. Learning English spelling skills	4.08	1.43	3.68	1.65	2.12
14. Singing a new song	4.27	1.41	4.09	1.73	0.41
15. Learning Putonghua conversation skills	4.03	1.44	3.82	1.53	0.57
16. Chatting with a new classmate	4.81	1.24	4.50	1.71	1.56
Subscales					
Academic	35.11	6.57	31.18	7.50	9.45 **
Non-academic	35.43	7.07	35.47	7.00	0.00
Total score of ANAS	69.60	13.11	66.19	13.45	1.89

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Discussion

It is not surprising to find that the students with SpLD held relatively weaker beliefs than the students without learning problems in the items representing the Academic Self-Efficacy subscale. This finding accords with previous studies suggesting that beliefs about self-efficacy are less positive in students who have experienced much difficulty in school learning (Baum & Owen, 1988; Clever, Bear & Juvomen, 1992; Hampton & Mason, 2003; Schunk & Pajares, 2002; Tabassam & Grainger, 2002). The result is also entirely in keeping with the many studies that have found students with SpLD to have a lower *academic self-concept* (a concept in which academic self-efficacy is a major dimension) than students who are achieving normally (Zeleke, 2004). By contrast, it is reassuring to note that in this study the students with SpLD were very similar indeed to the NLD students in the way they perceived their own capabilities in non-academic domains.

The mean scores of the SpLD group are slightly lower than the NLD group in 12 items from the 16 in the scale. However, in only two specific items, as indicated above, did the mean differences between SpLD and NLD students reach statistical significance. From these two items it is clear that students with SpLD in this study perceive themselves less efficacious than NLD students in certain areas of language and literacy in both Chinese and English. This finding accords completely with the very frequently reported weakness among students with learning disabilities across a broad range of language skills (e.g. Lyon, Fletcher, & Barnes, 2003; Silver & Hagin, 2002). The finding also supports

the notion that literacy difficulties are evident in Chinese language as well as in English (Hanley & Huang, 1997).

What is surprising in the results from this study is that the SpLD students overall were not reporting very low-level beliefs about their own capabilities. The fact that their group mean scores across all items were above 3.0 on the 6-point scale suggests that the majority of SpLD students held fairly positive perceptions of self-efficacy in both academic and non-academic domains. However, a few of them were less positive in their responses to some items, as reflected in the standard deviations reported in Table 2. The general finding that the majority of the SpLD students have positive self-efficacy beliefs is not in keeping with much of the overseas research evidence that would tend to predict poor self-efficacy in such students.

So the question arises, do primary-school-age Chinese students with SpLD really have stronger self-efficacy beliefs than their counterparts in other cultures? Or did the students in this study simply respond to the questionnaire in a way that would present them in the most positive light in the interview situation? The answer to that question is impossible to determine from the data; but it is true that in *Chinese society* saving face and not being thought of by others as in any way inadequate is a strong motivating force. For example, a child *when faced with the question,* How good are you at playing sport? *may state that he or she is* very good at sport even though the reverse may actually be true. Self-worth theory suggests that most individuals will act in ways to protect their own self-image (Covington, 1992) and this may have influenced children's responses in this study. A second possibility is that the students with SpLD are not fully aware of their own capabilities (or lack of) and their mainly positive self-evaluations here may actually represent a distorted perception of self, together with a poor judgment of the demands of the particular tasks, skills or performances described in the questionnaire (Klassen, 2002b). Further research involving direct observation of the children in a range of academic and non-academic tasks would be needed to determine if this is the case.

The practical implications from this study relate to improving the literacy skills of the SpLD children in their first language (Chinese) and to enhancing the development of oral performance in their second language (English). This study reveals that students with SpLD hold diminished beliefs concerning their own capabilities in these two key areas compared with the self-efficacy beliefs of students making normal progress. This is easily understandable since lack of success in a particular area of learning almost always undermines an individual's confidence. Any remedial intervention must seek to increase the students' self-efficacy by first helping them to experience success and empowerment in their performance in these language areas. This success will only be possible if high quality remedial teaching is available and is delivered with sufficient intensity, precision, and frequency to make a difference to the students' progress.

In recent years much more attention has been given in the Hong Kong school system to the identification of students with SpLD and to the provision of intensive educational support for them (Education Department, 2002; Hong Kong Specific Learning Difficulties Research Team, 2001). Outside the school system, remedial tuition is also available for students with learning problems through organizations such as *Pathways* and from private tutors. It is important that all those involved in teaching students with SpLD are aware of the need to enhance students' own perceptions of self-efficacy, along with improvements in academic attainment. As indicated in the introduction to this paper, *strategy training* is one of the promising ways of helping students gain greater control and confidence in their own learning — so high quality cognitive instruction for SpLD students should include relevant strategy training as a top priority (Pressley & McCormick, 1995). Another approach that may help to strengthen students' beliefs concerning self-efficacy is *attribution retraining* (Cole & Chan, 1990). This method helps students to understand better the causes of their successes and failures in learning, and in particular helps them to appreciate the relationship between their own efforts and positive results they achieve (Westwood, 2004b).

There are several acknowledged limitations in the present study. First, the sample of SpLD students is relatively small, although large enough to justify statistical analyses. Second, a different adult (teacher, counsellor or research assistant) administered the self-efficacy questionnaire individually to each SpLD student, resulting in possible variations in administration and interpretation. Detailed printed instructions were given to all personnel before implementation to try to standardize the procedure as much as possible, but variations may have occurred. Third, while the reliability of ANASS instrument in terms of internal consistency is very acceptable, the concurrent and predictive validity of the

questionnaire are not yet fully established, although the items do appear to have adequate content and construct validity. Finally, and related to the previous point regarding validity, it is still not known if the primary school children in the study gave responses to the questionnaire that present themselves to the interviewer in the best light. This point was discussed in the paper and the need to investigate children's efficacy and efficacy beliefs in a range of academic and non-academic tasks through direct observational techniques must be emphasized again here.

Further studies are also needed to investigate the results after students with SpLD receive effective remedial teaching, cognitive training and attribution retraining over a significant period of time — does this raise their level of self-efficacy? It will be of interest also to investigate self-efficacy in an older age group — does diminished self-efficacy become a greater problem when SpLD students reach secondary school and become increasingly aware of their failures?

There is also a need to carry out further research work with *ANASS* to establish concurrent validity by comparing it with other existing scales for measuring self-efficacy, and also to determine its temporal reliability.

Enhancing students' self-efficacy remains an exciting challenge for all teachers. It is now recognized that effective remedial intervention must address affective factors within the learner as well as attempting to build basic academic skills (Sewell & St George, 1999). What students think about their own capabilities influences their response to academic tasks.

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