Reading Achievement and Reading Self-Concept in Year 3 Children

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The relationships between reading achievement and reading self-concept were investigated. Although the association between academic achievement and academic self-concept has been well established in the literature, only the recent development of instruments aimed at specifically measuring reading self-concept has enabled this area to be more extensively researched. The reading achievement and reading self-concept of 80, Year 3 children were measured using the Neale Analysis of Reading (3rd Edition; Neale, 1999) and the Reading-Self Concept Scale (Chapman & Tunmer, 1999). The findings of the present study supported a strong positive relationship between reading achievement and reading self-concept. This relationship was evident across all aspects (Accuracy, Comprehension and Rate) of reading and all components (Difficulty, Competence and Attitude) of reading self-concept. Reading rate was found to make the largest contribution to levels of reading self-concept. Further, although generally reported in the literature, no significant gender effects were found for either reading achievement or reading self-concept.

Learning to read is the principal learning activity undertaken by children in their first years of schooling (Chapman & Tunmer, 1995) and the development of literacy skills in children is a fundamental role of schools. The ability to read has an impact on the development of skills in all academic areas and the functioning of a person in society at large. For some children, the development of these skills is challenging and problematic. Children who have difficulties in learning to read often experience the “Matthew effect” (Stanovich, 1986). Stated simply, children who have early difficulties in learning to read often have diminished opportunities to engage in reading and related activities. Such children may also develop negative self-perceptions, meaning they aren’t as likely to want to read, making it even harder to acquire the skills to become proficient readers (Chapman & Tunmer, 1995; Nicholson, 2000). Thus, the early identification of children with poor reading performance and associated negative belief systems is essential before these uncorrected problems in reading become entrenched patterns of reading difficulty, typically coupled with a poor attitude to reading and school, with concomitant difficulties in all academic areas.

An important goal of education is the enhancement of children’s self-concepts as self-concepts have been shown to impact on academic behaviours, educational aspirations and subsequent academic achievement (Burnett, Craven, & Marsh, 1999; Marsh & Craven, 1997). Various theoretical models have explored the interplay between general or global self-concept and specific facets of self-concept such as academic, social, physical and emotional self-concept (Byrne, 1996b). Of special interest to educators has been the development of instruments to measure particular domains of academic self-concept, such as reading and maths, and sub-components within these domains. How children perceive themselves as readers and the relationship between these perceptions and reading achievement is a relatively recent area of research (Chapman & Tunmer, 1995; Chapman, Tunmer, & Prochnow, 2000; Shell, Colvin, & Bruning, 1995).

Self-concept - Definitions, Theories and Measurement

Shavelson, Hubner and Stanton in their seminal work (1976) suggested that self-concept definitions could be categorised along 17 different conceptual dimensions, whilst Strein (1995) reported at least 15 “self” terms used by various authors. Byrne (1996b) pointed out how throughout the literature the multiplicity of self terms are often used interchangeably. She noted that the implications of this definitional confusion can be observed in studies that lack a clear conceptualisation of the self term under study, and the development of poor quality measurement tools with weak construct validity. Purkey (1988) defined self-concept as “the totality of a complex, organized, and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence” (p.1). He sees self-esteem as feelings of personal worth and the level of satisfaction one has regarding one’s self or self-concept. Similarly, Huitt (1998) suggested that self-concept is the general view we have of ourselves, while self-esteem refers to how we measure or value particular components of self-concept. However, Shavelson et al. suggested that self-concept itself incorporates both descriptive and evaluative components and the work of Burnett (1994) supported this claim. Burnett proposed that self-concept encompasses both descriptive and evaluative beliefs about an individual’s characteristics, whereas self-esteem refers to global beliefs and feelings related to how an individual feels about him- or herself as a person.
The original Shavelson et al. (1976) model has been expanded and modified; specifically as the Marsh-Shavelson model (1985). The Marsh-Shavelson revision occurred in response to observations in the pattern of correlations arising from factor analyses of results from the Self Description Questionnaire (SDQ I, II, III; Marsh, 1992 b,c,d), which are considered the best validated and most reliable self-concept measures available for pre- and adolescent children (Byrne, 1996b). Marsh and Shavelson (1985) concluded that their research had demonstrated that self-concept was indeed hierarchically ordered, but more complex than originally proposed, suggesting that instead of one higher-order factor, general self-concept, the best model included three second-order factors, non-academic, math/academic and verbal/academic.

Academic Self-concept – Definitions, Theories and Measurements

Like self-concept, no precise definition seems to exist for academic self-concept. Ability self-concept, academic self-concept and self-concept of ability have all been used to describe self-perceptions of academic competence (Byrne, 1996b). Strein (1993, as cited in Byrne, 1996a) noted that academic self-concept reflects both descriptive and evaluative aspects of self-perception, and self-perceptions associated with academic self-concept focus on academic competence, rather than attitude. Boersma and Chapman (1992) defined academic self-concept 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 math. Academic self-concept is seen as a factor related to, yet distinct from, general self-concept or self-esteem. (p.1)

In a revision of the Shavelson et al. (1976) model, suggested by Song and Hattie (1994, cited in Marsh & Hattie, 1996), they proposed that academic self-concept be divided into achievement self-concept (perceived actual achievement), ability self-concept (perceived capabilities for achievement), and classroom self-concept (confidence in classroom activities).

The age at which children develop differentiated self-concepts about academic areas has been debated (Marsh, 2002). Young children are sometimes perceived as being incapable of accurately assessing their academic performance and hold positive and undifferentiated self-concepts. However, research has suggested that self-concepts are clearly differentiated even among Kindergarten and Grade 1 children across a variety of academic domains (Eccles, Wigfield, Harold & Blumfield, 1993; Marsh, Craven & Debus, 1991). In response to the need to assess the self-concepts of children of different ages, researchers have utilised many age-appropriate formats, including pictorial and questionnaire formats (Harter, 1982; Marsh 1992 b, c, d). However, few instruments exist specifically aiming to measure academic self-concept. Until relatively recently, the lack of appropriate instruments meant measurement of specific areas within the domains of academic self-concept such as reading and maths self-concepts was problematic.

The Relationship Between Academic Achievement and Academic Self-Concept

The positive relationship between academic achievement and self-concept has been clearly established (Byrne, 1986; Marsh, 1992a; Marsh, Smith & Barnes, 1985, Marsh & Yeung, 1997, Mujis, 1997). However, considerable variation has been reported in the strength of this relationship. Likely factors contributing to the range of self-concept and achievement correlations include variations in defining self-concept and academic achievement, the report formats used in measurement instruments, and the indicators used to measure academic achievement (Byrne, 1996a). The work of Marsh and associates has added substantially to the understanding of the relationship between self-concept and academic achievement. What has been consistently demonstrated is that academic achievement is correlated substantially more with academic self-concept than with general or non-academic self-concept. Furthermore, subject-specific self-concepts correlate higher with their corresponding academic achievement scores than with non-matching academic achievement scores, suggesting the content and specificity of self-concept-achievement correlations (Marsh, 1992a, 2002).

Does academic self-concept determine academic achievement or is academic self-concept a consequence of academic achievement? Research into the causal ordering or predominance of academic self-concept and academic achievement is motivated by theoretical and practical implications. Both the skill development and self-enhancement models explain the relationships between self-concept and achievement (Helme & van Aken, 1995; Marsh, 2002; Pajares & Schunk, 2001; Skaalvik & Valas, 1999). According to the skill development model, self-concept is the result of past achievement and emerges as a consequence of
academic achievement (we feel good about ourselves because we do well). Therefore, achievement is predominant over self-concept implying that the way to enhance academic self-concept is to develop stronger academic skills. In contrast, the self-enhancement model suggests that self-concept beliefs are a cause of pupil achievement (we do well because we feel good about ourselves). Thus, self-concept is predominant over achievement suggesting that changes in self-concept will lead to subsequent changes in academic achievement. This important, but unresolved question of causality has implications for where educational interventions should be aimed: increasing children’ competencies or enhancing children’ self-concepts.

Logically, it seems more likely that a reciprocal relationship exists between achievement and self-concept, a view supported by current researchers (Marsh & Yeung, 1997). Enhancing a pupil’s self-concept will have limited effects unless accompanied by corresponding efforts, strategies and opportunities to increase academic skills. Another confounding factor is that external variables such as socio-economic status may affect, and have a stronger influence on both academic achievement and self-concept than these variables alone (Mujis, 1997). Mixed results in the area of causal relations can also be explained with reference to a developmental perspective, which suggests that the causal ordering of academic self-concept and achievement changes with age (Chapman et al., 2000).

Reading Self-Concept

**Conceptualisation**

Numerous studies have examined the influence on a pupil’s reading of affective factors such as motivation (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997), attitudes (McKenna, Kear & Ellsworth, 1995), expectancies, attributions and learned helplessness (Butkowsky & Willows, 1980), and self-efficacy (Shell et al., 1995). However, surprisingly little attention has been given to children’s reading self-concepts. Chapman and Tunmer (1997) defined reading self-concept as “the combination of three interrelated components: (1) perceptions of competence in performing reading tasks; (2) perceptions that reading activities are generally easy or difficult, and (3) attitudes felt towards reading.” (p. 280). This conceptualisation of reading self-concept incorporates the key aspects of self-concept, self-efficacy and reading motivation. Chapman and Tunmer also noted that the relationship between these subcomponents changes with age and reading ability. Further, Quandt and Selznick (1984), in one of the first examinations of reading self-concept, highlighted that self-concept is a construct, not a behaviour, but is evidenced by a number of behaviours.

**Measurement of Reading Self-Concept**

The development of instruments such as the Academic Self Description Questionnaire I & II (Marsh, 1990), the Perception of Ability Scale for Children (Boersma & Chapman, 1992) and the Burnett Self Scale (Burnett, 1994) enabled the examination of the reading component of academic self-concept. However, these scales only include a subscale with a few items measuring reading self-concept; as such, they measure reading self-concept in a limited way.

The Reading Self-Concept Scale (RSCS) by Chapman and Tunmer (1999) and the Reader Self-Perception Scale (RSPS) by Henk and Melnick (1995) appear to be the only published scales devised specifically to measure the reading sub-component of academic self-concept. The RSPS differs from the RSCS as it is based on Bandura’s self-efficacy model and learning theory, while the RSCS is based on a multidimensional, hierarchical view of self-concept. The RSCS measures three components of reading self-concept: perceptions of competence, perceptions of difficulty and attitudes toward reading. Chapman and Tunmer (1995) believe these three subscales clearly measure separate, but related aspects of reading self-concept. The RSCS appears to be a superior instrument for measuring reading self-concept as it: (a) has strong psychometric properties, (b) is firmly based on current self-concept theory, (c) is a recent Australasian instrument, and (d) enables the measurement of how children feel about reading in general, as well as their perception of themselves as readers. Byrne (1996b) saw the RSCS as an instrument with potential value for gathering more precise information about a child’s self-perception of reading competency.

**Age, Gender and Reading Self-Concept**

Many studies have examined the role of age in relation to how children view reading and themselves as readers. Eccles et al. (1993) found first graders reported higher estimates of their reading competence than fourth graders, suggesting that increasing realism with age, in conjunction with an optimistic bias among young children, may explain their results. Chapman and Tunmer (1995) studied 771 children over 5 year levels and found that, with increasing age, young children’s perceptions of competence and difficulty became more consistent with their actual levels of achievement. Chapman et al. (2000) examined the relationship between academic self-concept and measures of reading related performance in beginning
school children and found that differences in reading self-concepts between competent and less competent readers appeared within the first two months of schooling. By the end of the 2nd year of schooling, poorer readers had significantly lower reading self-concepts. Chapman et al. concluded that self-perceptions in specific subjects such as reading may develop before more generalised academic self-concepts. McKenna et al. (1995) surveyed attitudes towards reading for recreational and academic purposes, based on a large stratified sample of American children in grades 1 – 6, finding that attitudes towards recreational and academic reading became more negative over the six grades. Pumfrey (1997) suggested that the costs/benefits ratio of reading is a function of the alternatives available. Therefore, the increase in competing leisure options as readers mature may explain this trend in declining attitudes towards reading with age.

The academic performance of boys in schools, particularly in the area of literacy, is of growing concern to researchers and educators (Alloway & Gilbert, 1997a). Studies have typically found that boys have more negative attitudes to reading and possess more negative reading self-concepts than girls (Marsh, Smith, et al., 1985; Marsh et al., 1991; McKenna et al., 1995). A greater understanding of this problem is essential to planning appropriate strategies to counteract this trend. Girls are consistently reported as possessing more positive attitudes to reading than boys (Baker & Wigfield, 1999; McKenna et al., 1995), including better self-concepts in reading and in schooling in general (Marsh, 2002). A study by Eccles et al. (1993) also found that girls, aged 7-10 years, held more positive competence beliefs and positive values for reading activities than boys.

The Relationship Between Reading Achievement and Reading Self-Concept

Few studies have examined directly the relationship between reading achievement and reading self-concept, in part because of the lack of suitable measures of reading self-concept. Chapman and colleagues have carried out considerable work in this area and have consistently found that reading performance and reading self-concept are positively correlated (Chapman & Tunmer, 1995; Chapman & Tunmer, 1997; Chapman et al., 2000). Children with higher self-concepts generally perform better at reading than those with negative self-concepts. Marsh and colleagues, in research using the SDQ instruments, have also consistently found positive correlations between reading achievement and reading self-concept (Marsh, Smith, et al., 1985).

Many studies have demonstrated the link between related affective aspects of reading such as attitudes and motivation. Typically, positive attitudes towards reading are linked to higher attainments in reading. Conversely, negative attitudes to reading are linked to lower attainments in reading. However, there are examples where children’s attitudes to reading and their reading attainments are not positively correlated (Pumfrey, 1991, 1993, as cited in Pumfrey, 1997). Baker and Wigfield (1999) also noted a lack of conclusive evidence that children’s motivational profiles related positively to their reading performance. Therefore, children highest in motivation did not always achieve the highest reading scores, nor did those with the lowest reading scores always exhibit the lowest motivational levels. Only girls in Baker and Wigfield’s study showed a consistent and significant correlation between motivation and achievement.

Research Issues and the Present Study

Previous studies have examined the nature of the relationship between academic self-concept and academic achievement. The modified Shavelson et al. (1976) model of self-concept suggests there are domain specific self-concepts, in areas such as reading and maths. Reading self-concept has been the focus of some studies but psychometrically robust instruments have been developed only recently (Chapman & Tunmer, 1995). More detailed investigation of the nature of reading self-concept and its relationship to reading achievement is needed. The present study investigated the relationship between reading self-concept and reading skills in Year 3 children, including the examination of gender differences. The study also explored the links between reading self-concept and reading achievement; specifically the nature of this relationship with regard to the subscales of the RSCS (Chapman & Tunmer, 1999) and the components of the Neale Analysis of Reading Ability 3rd Edition (Neale Analysis; Neale, 1999).
**Research Questions and Research Hypotheses**

**Research Question 1**  
Are there gender differences in reading achievement?

**Research Hypothesis 1**  
It is predicted that girls will perform significantly better than boys on measures of reading achievement.

**Research Question 2**  
Are there gender differences in reading self-concept?

**Research Hypothesis 2**  
Girls will have a higher reading self-concept than boys.

**Research Question 3**  
What is the relationship between reading achievement and reading self-concept, and specifically what is the relationship between the components of reading self-concept (Difficulty, Competency and Attitude) and the components of reading achievement (Accuracy, Comprehension, Rate)?

**Research Hypothesis 3**  
There will be a significant positive relationship between reading self-concept and reading achievement, including significant relationships between all components of reading self-concept (Difficulty, Competency and Attitude) and all aspects of reading achievement (Accuracy, Comprehension, Rate).

**Method**

**Participants**

The participants in this study were 80 primary school children (Females = 47, Males = 33). They were enrolled in Year 3 (4th year of schooling) at three primary schools located in the western and southwestern metropolitan regions of Sydney. The schools drew from a lower range of socio-economic backgrounds and were involved in the Priority Schools Funding Project (PSFP, NSW DET). Fifty three per cent of the participants reported they spoke English at home while 47% reported they spoke a language other than English at home (Vietnamese, Khmer, Mandarin, Cantonese, Samoan, Arabic).

**Measures**

*The Neale Analysis of Reading Ability 3rd Edition*

The Neale Analysis (Neale, 1999) is an individually administered, standardised test of reading ability developed in Australia, with sound reliability and validity. It consists of graded passages read aloud by the pupil followed by comprehension questions, and assesses three aspects of reading: rate, accuracy and comprehension. The Neale Analysis features norms, including reading ages for children aged 6 to 12 years.

*The Reading Self-Concept Scale*

The RSCS (Chapman & Tunmer, 1999) is a 30 item self-report questionnaire designed to assess a range of reading self-perceptions. Three sub-components of reading self-concept are measured: (a) perceptions of competence in reading (beliefs regarding ability and proficiency in reading tasks), (b) perceptions of difficulty with reading (beliefs that reading activities are hard or problematic), and (c) attitudes toward reading (feelings toward and affinity for reading). The RSCS is the only Australasian instrument to specifically measure reading self-concept as a single measure and, in addition, to also explore sub-components within the domain of reading self-concept.

**Procedure**

An information letter was issued to all Year 3 children at three schools. The letter contained an explanation of the nature of the research study and sought consent from parents/caregivers for their child to participate in the study. Children with signed consent forms comprised the testing sample. Participants were assessed individually, firstly on the Neale Analysis and then the RSCS. Children were withdrawn from class and the assessment took place in a room free from distractions, taking approximately 30 minutes.

*Design and Data Analysis*
The design of the present study was based on bivariate data analysis. The identification and strength of possible relationships, or correlations between the two variables, reading achievement and reading self-concept, were explored. For Hypotheses 1 and 2 on gender differences, independent groups t-tests were conducted. A correlational analysis was conducted to test Hypothesis 3, that there is a significant positive relationship between all components of reading self-concept and reading achievement.

Results

Descriptive Statistics

Neale Analysis of Reading

The mean scores, as Reading Ages in years and months, standard deviation and range for each aspect of the Neale Analysis are shown in Table 1. The mean chronological age of the sample was 8 years 6 months and, therefore, the mean reading age for accuracy was appropriate for chronological age, with the mean reading age for comprehension at 4 months below age expectations, and the mean reading age for rate 9 months higher than age expectations.

Table 1

Neale Analysis of Reading – Mean Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Age Equivalent</th>
<th>Standard Deviation</th>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>8.50</td>
<td>8 y 6 m</td>
<td>1.76</td>
<td>6.00 – 13.00</td>
</tr>
<tr>
<td>Comprehension</td>
<td>8.16</td>
<td>8 y 2 m</td>
<td>1.71</td>
<td>6.00 – 13.00</td>
</tr>
<tr>
<td>Rate</td>
<td>9.26</td>
<td>9 y 3 m</td>
<td>1.85</td>
<td>6.00 – 13.00</td>
</tr>
</tbody>
</table>

N = 80

Reading Self-Concept Scale

The mean scores for each subscale of the RSCS and the total scale is shown in Table 2. The possible range for each scale was 1-5. The highest scores were for the Attitude subscale (M = 4.49) and the lowest scores for the Difficulty subscale (M = 3.34). The means of the original sample compiled by Chapman and Tunmer (1995) in the development of the RSCS are also included in Table 3. The values and pattern of values for both samples are similar.

Table 2

Reading Self-Concept Scale Subscale Mean Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Mean from Original Sample (N = 771)</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence</td>
<td>3.66</td>
<td>3.77</td>
<td>.83</td>
<td>1.70 – 5.00</td>
</tr>
<tr>
<td>Difficulty</td>
<td>3.34</td>
<td>3.16</td>
<td>.76</td>
<td>1.50 – 4.80</td>
</tr>
<tr>
<td>Attitude</td>
<td>4.49</td>
<td>4.06</td>
<td>.57</td>
<td>1.50 – 5.00</td>
</tr>
<tr>
<td>Full Scale</td>
<td>3.83</td>
<td>3.66</td>
<td>.60</td>
<td>1.67 – 4.90</td>
</tr>
</tbody>
</table>

N = 80

Table 3

Neale Analysis of Reading – Mean Scores by Gender

<table>
<thead>
<tr>
<th></th>
<th>Accuracy</th>
<th>Comprehension</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Females</td>
<td>47</td>
<td>8.23</td>
<td>1.56</td>
</tr>
<tr>
<td>Males</td>
<td>33</td>
<td>8.90</td>
<td>1.98</td>
</tr>
</tbody>
</table>

RSCS Reliability Estimates in the Present Sample

Reliability tests using Cronbach’s alpha were carried out on the subscale and full scale scores to determine the internal consistency of the scales. According to Chapman and Tunmer (1995) the RSCS has
good internal consistency, with a Cronbach alpha coefficient reported of .84 for the full scale, and subscale reliabilities of .79 to .81 (Attitude), .63 to .82 (Competence) and .70 to .80 (Difficulty). In the current study, the full scale reliability estimate for the total sample was .87, and therefore similar to that reported by Chapman and Tunmer, with similar subscale reliability estimates. The highest reliability estimates were for the Competence subscale (.78), followed by the Attitude subscale (.75) and the Difficulty subscale (.73). As all alpha coefficients reached acceptable levels (> .7) the analysis proceeded using these subscale and full scale scores as variables.

**Gender Differences in Reading Achievement and in Reading Self-Concept**

A summary of gender differentiated means for the Neale Analysis are presented in Table 3. An independent-samples t-test was conducted to determine the effects of gender on reading achievement (Table 4). These results indicate that no significant differences were found for gender and reading achievement.

A summary of means obtained for males and females for the RSCS is presented in Table 5. An independent-samples t-test was conducted to determine the effects of gender on reading self-concept, with results (Table 6) indicating no significant gender effects for any aspect of reading self-concept.

**Table 4**

<table>
<thead>
<tr>
<th>t-test for Equality of Means</th>
<th>t</th>
<th>df</th>
<th>Sig. (2 – tailed)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy#</td>
<td>-1.684</td>
<td>78</td>
<td>.096</td>
<td>-.67</td>
</tr>
<tr>
<td>Comprehension#</td>
<td>- .924</td>
<td>78</td>
<td>.358</td>
<td>-.36</td>
</tr>
<tr>
<td>Rate#</td>
<td>-1.526</td>
<td>78</td>
<td>.131</td>
<td>-.64</td>
</tr>
</tbody>
</table>

# Equal variances assumed; (p > .05)

Table 5

**Reading Self-Concept Scale Subscale Mean Scores by Gender**

<table>
<thead>
<tr>
<th>Competence</th>
<th>Difficulty</th>
<th>Attitude</th>
<th>Full Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Females</td>
<td>47</td>
<td>3.60 .77</td>
<td>3.37 .79</td>
</tr>
<tr>
<td>Males</td>
<td>33</td>
<td>3.75 .87</td>
<td>3.30 .72</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>3.66 .83</td>
<td>3.34 .76</td>
</tr>
</tbody>
</table>

Table 6

<table>
<thead>
<tr>
<th>t-test for Equality of Means</th>
<th>t</th>
<th>df</th>
<th>Sig. (2 – tailed)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty#</td>
<td>.389</td>
<td>78</td>
<td>.698</td>
<td>.07</td>
</tr>
<tr>
<td>Competence#</td>
<td>-.763</td>
<td>78</td>
<td>.448</td>
<td>-.14</td>
</tr>
<tr>
<td>Attitude#</td>
<td>.463</td>
<td>78</td>
<td>.644</td>
<td>.06</td>
</tr>
<tr>
<td>Total Scale</td>
<td>-.041</td>
<td>78</td>
<td>.968</td>
<td>-.01</td>
</tr>
</tbody>
</table>

# Equal variances assumed

The Relationship Between Reading Achievement and Reading Self-Concept

The relationship between reading achievement and reading self-concept was investigated. As there were no significant gender effects, respondents were no longer treated as separate gender groups for analysis.
Correlations between reading achievement and reading self-concept are shown in Table 7. These results indicate that there were strong positive correlations between all scales of the RSCS and all areas of the Neale Analysis, with high levels of reading achievement associated with high levels of reading self-concept. This relationship was strongest for perceptions of difficulty and accuracy in reading ($r = .52$, $N = 80$, $p < .001$). This relationship was weakest, although still significant at the .05 level, between attitudes towards reading and reading comprehension ($r = .26$, $N = 80$, $p < .02$). These findings led to the formulation of a qualitative research question.

Table 7
Reading Self-Concept Scale Correlations with Reading Achievement

<table>
<thead>
<tr>
<th>Neale Analysis of Reading</th>
<th>RSCS Scales</th>
<th>Neale Analysis of Reading</th>
<th>RSCS Scales</th>
<th>Neale Analysis of Reading</th>
<th>RSCS Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Competence</td>
<td>Difficulty</td>
<td>Attitude</td>
<td>Full Scale</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>.30**</td>
<td>.52**</td>
<td>.28*</td>
<td>.45**</td>
<td></td>
</tr>
<tr>
<td>Comprehension</td>
<td>.40**</td>
<td>.48**</td>
<td>.26*</td>
<td>.47**</td>
<td></td>
</tr>
<tr>
<td>Rate</td>
<td>.29**</td>
<td>.48**</td>
<td>.34**</td>
<td>.44**</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.  **p < .01. Pearson product-moment correlation coefficient

Table 8
Regression of Reading Achievement on Reading Self-Concept

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>8.373</td>
<td>3</td>
<td>2.791</td>
<td>10.518</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>20.168</td>
<td>76</td>
<td>.265</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>28.541</td>
<td>79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9
Coefficients for Reading Achievement and Total Reading Self-Concept Score

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.938</td>
<td>.343</td>
</tr>
<tr>
<td>Accuracy</td>
<td>.02622</td>
<td>.057</td>
</tr>
<tr>
<td>Comprehension</td>
<td>.09972</td>
<td>.056</td>
</tr>
<tr>
<td>Rate</td>
<td>.09259</td>
<td>.036</td>
</tr>
</tbody>
</table>

Qualitative Research Question

What are the relative contributions of each aspect of reading achievement to reading self-concept?

A standard multiple regression was conducted and the results are presented in Tables 8 and 9. These results reinforce the significance of the relationship between the three aspects of the Neale Analysis and the RSCS ($p < .001$). Further, it shows that 29 percent of the variance in reading self-concept was explained by the Neale Analysis ($R^2 = .293$).

The influence of the three aspects of the Neale Analysis on the RSCS is shown in Table 11. These results indicate that the Rate and Comprehension aspects of the Neale Analysis make the strongest contributions to explaining reading self-concept (Rate: $\beta = .285$; Comprehension: $\beta = .284$). Accuracy made less of a contribution ($\beta = .077$), and of the three predictor variables, only Rate made a statistically significant unique contribution to the equation ($p = .013$).

Summary of Results

Significant relationships were found between all aspects of reading achievement (Accuracy, Comprehension, Rate) and all components of reading self-concept (Difficulty, Competence, Attitude). With
respect to gender effects, no significant relationships were found with either reading achievement or reading self-concept. Twenty nine percent of the variance in reading self-concept was explained by reading achievement. Reading Rate was found to make a significant unique contribution to reading self-concept.

**Discussion**

**Gender Differences in Reading Achievement**

No significant gender differences were found in reading achievement. However, research into gender differences in reading achievement commonly suggests that girls generally achieve greater success in reading than boys (Alloway & Gilbert, 1997a, b; Marsh, Smith, et al., 1985) and that boys are over-represented in referrals to remedial reading programs (Vogel, 1990). Flynn and Rahbar (1993, 1994) suggested that a referral bias exists in the identification process of reading difficulties in boys, with boys significantly more likely to be identified with reading difficulties than girls if teacher-ratings are used rather than test results, possibly reflecting the influence of boys’ inappropriate classroom behaviours on teacher judgements. Therefore, because the current study used test results only, it is less surprising there were no gender differences in reading achievement.

The lack of a significant gender difference in reading achievement may also have been a result of the low socio-economic status (SES) of the sample population in the present study. Van Davy (1995, as cited in Alloway & Gilbert, 1997b), in an analysis of NSW, Year 3 Basic Skills Test for Literacy, found that the SES of children’s families was a strong predictor of overall literacy performance, and that gender differences in higher SES groups was greater than in lower SES groups. Therefore, SES may act as a confounding factor in literacy performance, reducing the gap between male and female reading achievement scores.

Another possible explanation for the lack of a gender difference in the present study may lie in the high percentage of non-English speaking background (NESB) children in the sample population. Reading is usually viewed as a gender marked activity, associated with and favoured by girls and women (Millard, 1997). Literacy teaching in schools runs counter to dominant social constructions of masculinity (Alloway & Gilbert, 1997a); however, it is possible that children from minority cultures hold perceptions of reading and masculinity that differ in ways from those held by the dominant culture. Therefore, cultural differences might explain the similarities in reading achievement between girls and boys found in this study.

Finally, the teachers of the children in the present study were in their first few years of teaching and as such are likely to be current in their understanding and knowledge of the interplay between gender and reading achievement. Pedagogical practices to counter gender differences in reading achievement may already be in place, contributing to better reading performance for boys.

**Gender Differences in Reading Self-Concept**

Gender was not found to have a significant effect on participants’ reading self-concept scores. This was not surprising considering the non-significant finding for gender and reading achievement. Girls are generally reported to have higher reading self-concept scores than boys and demonstrate more positive attitudes to reading. Marsh, Smith, et al. (1985) and Hay, Ashman and van Kraayenoord (1998) concluded that higher levels of reading achievement can logically explain higher reading self-concept scores for girls. Therefore, in the present study, similar reading achievement scores between boys and girls translated into similar reading self-concept scores. Some other explanations are also worth exploring.

In general, girls are more positive about reading due to internalised expectations of reading success (Eisenberg, Martin, & Fabes, 1996, as cited in Baker & Wigfield, 1999). The lack of gender differences in relation to reading self-concept may have been influenced by specific socialisation practices of the cultures in this sample. Byrne (1996b) noted that “one’s self-perceptions are very closely linked to the cultural context within which he or she was socialised” (p. 50). Clearly, cultural background may influence reading self-concept results when analysed for gender differences.

**The Relationship Between Reading Achievement and Reading Self-Concept**

Reading achievement was positively correlated with reading self-concept; more competent readers held more positive reading self-perceptions and attitudes towards reading than less competent readers. More specifically, there were significant correlations between all aspects of the Neale Analysis and all scales of the RSCS, (Chapman & Tunmer, 1995). This finding is consistent with previous research into the relationship
between academic achievement and academic self-concept (Hay, Ashman & van Kraayenoord, 1997; Marsh, 1992a; Marsh, Smith, et al., 1985), and reading achievement and reading self-concept (Chapman & Tunmer, 1995; Chapman & Tunmer, 1997; Chapman et al., 2000). Unique to this study was that this relationship held true when reading achievement incorporated three distinct skills and when reading self-concept was also measured across three components. The results of this study support the notion that reading self-concept consists of clearly differentiated sub-components that are all influenced by different skills comprising reading achievement.

Stanovich (1986) suggested that the timing of when self-perceptions interact with reading performance needed to be identified. The present findings indicated that this interaction was clearly established by the 4th year of schooling. Children at this age had a well-defined concept of their reading ability, which was commensurate with their actual reading achievement. Nicholls and Miller (1984, cited in Chapman & Tunmer, 1995) suggested that children do not make the link between task difficulty and ability until approximately 8 years of age when they develop normative concepts of ability. The children in this study, who were experiencing difficulties in reading, clearly believed that reading was more difficult, that they had less ability and they felt more negative about reading than their more able peers. This suggests that discernible patterns of perceptions of difficulty and competence, negative attitudes and poor performance are firmly established by 8 years of age.

The link between reading achievement and reading self-perceptions is important because of the consequent effect of these factors on motivation. Reader’s self-perceptions clearly influence their subsequent reading behaviours, habits and attitudes (Henk & Melnick, 1995). Children who experience difficulty in reading and feel bad about themselves as readers are less likely to want to read, and are more likely to avoid reading related activities. Therefore, opportunities to acquire further skills are diminished and compound with negative belief patterns, described by Stanovich (1986) as “negative Matthew effects” (p.360). Spear-Swerling (1994, cited in Chapman & Tunmer, 1997) suggested “once children have entered the ‘swamp’ of negative expectations, lowered motivation, and limited practice, it becomes increasingly difficult for them to get back on the road to proficient reading” (p. 101). Marsh (2002) noted that self-concept and academic achievement are reciprocally related and mutually reinforcing. Ideally, both achievement and academic self-concept need to be targeted in reading programs, as aiming to improve one alone will have less optimal effects.

Children experiencing difficulty in learning to read often don’t expect to do well and develop patterns of behaviour that contribute to their difficulties. Many of these children exhibit behaviours that suggest an orientation of learned helplessness (Butkowky & Willows, 1980). These researchers found that poor readers displayed low self-concepts of ability, didn’t expect to do well on reading tasks and reacted badly to failure. The work of Seligman (1995) highlighted the importance of a pupil’s level of optimism on future achievement, noting however that he stresses the importance of improvements in self-concept being backed up by a real improvement in the skill area of concern.

*The Contributions of Aspects of Reading Achievement to Reading Self-Concept*

An exploratory aspect of this study, articulated as a qualitative research question, investigated the relative contribution of aspects of reading achievement to reading self-concept. Reading rate made the most significant contribution to reading self-concept. Previous research into the relationship between reading self-concept and reading achievement has not explored this area, as reading achievement is usually inferred from only one component of reading. It may be that children who can read fast, perceive themselves as capable readers and feel confident about their reading, which is reflected in their higher reading self-concepts. Another explanation is related to the fact that children who read quickly and who have developed “automaticity” have improved comprehension skills (Tan & Nicholson, 1997). Therefore, they are more likely to enjoy reading and feel better about themselves as readers. Another explanation is that how fast or slow a pupil reads, or fluency, is possibly more obvious to a pupil than other features of reading, such as accuracy and comprehension. Therefore, through a social comparison process a pupil is aware that they are a fast or slow reader, and develop corresponding positive or negative reading self-concepts.

*Integrity of RSCS Data with the Present Sample*

The findings in this study were consistent with the work of Chapman and Tunmer (1995) using the RSCS. Virtually identical correlations were found between the RSCS and reading comprehension in both the
current study and Chapman and Tunmer’s findings. Only the Attitude subscale differed, as a significant correlation with reading comprehension was not reached in Chapman and Tunmer’s study until the 5th year of schooling. It appears that for the New Zealand children in Chapman and Tunmer’s sample, poorer readers did not develop corresponding negative attitudes towards reading until they were older. These results may be attributed to differences in the support provided to poorer readers in the two systems.

**Limitations of the Study**

A limitation of this study was the nature of the sample population. The high NESB, low socio-economic background of the participants may have contributed to the non-significant results obtained for gender. While the association between SES and reading achievement has been extensively explored (Bowey, 1995; Duncan & Seymour, 2000; Hecht & Greenfield, 2001), its impact on academic self-concept and specifically reading self-concept remains unclear (Mujis, 1997).

Using only one measure of reading achievement, the Neale Analysis, imposed a further limitation. While the Neale Analysis enabled the examination of three skills of reading achievement, all data was acquired in a test only situation. A more comprehensive profile of a pupil’s reading achievement could have been obtained from using a range of measures such as teacher ratings, class grades, and external examination results. Helmeke and van Aken (1995) found that the type of criterion chosen to indicate achievement, impacted on the significance of achievement and self-concept relationships in their study. Marsh and Yeung (1997) suggested that it is preferable to have multiple indicators of achievement and Hay et al.’s (1997) research supported the use of both teacher rating and standardised tests in self-concept research. However, the use of teacher ratings as an indicator of pupil achievement can be problematic due to the influence of pupil behaviour and motivation on teacher’s judgements, particularly for boys (Flynn & Rahbar, 1994). Therefore, the use of only test scores in the current study avoided the possible influence of teacher bias against boys.

**Implications**

The value of this study is that it adds to the body of research in the areas of reading self-concept, reading achievement and gender differences in reading. The significant link between reading self-concept and reading achievement clearly indicates how reading self-concept is affected by children’s reading competence, with less competent readers more likely to develop negative self-concepts about reading than competent readers. An unexpected finding in this study, that attitudes towards reading are already correlated with reading achievement by Year 3, suggests the benefit of targeting intervention programs to enhance reading self-concept at or prior to the Year 3 level. It is essential that interventions with children struggling with learning to read must focus on improving skills and on helping children to develop an understanding of the importance and purpose of reading, before attitudes towards reading, and perceptions of personal ability to read, become too negative. Increasing opportunities to be successful in reading is essential, but there must also be an emphasis on changing reading self-perceptions. McCabe and Margolis (2001) emphasise that, “with a strong self-perception and a quality reading program geared to their needs, the probability that children will become good readers increases dramatically” (p. 49). They outline a number of activities to improve the self-efficacy of struggling readers including open discussion with the pupil about the purpose of their remediation program, and reviewing and charting their progress.

Evidence from this study showed the importance of gathering accurate data about both a pupil’s reading skills and their reading self-concepts, including closely monitoring both areas over time. Such a complete profile of a pupil’s reading skills and perceptions assists in planning appropriate and effective intervention programs. Research by Broadley et al. (2000) has indicated that teachers are concerned about the decreased motivation of children to read as they get older. Teachers seek strategies to encourage children to feel more positive about reading, both their reading ability and reading experience. Teachers and school counsellors can use the RSCS to identify children who would benefit from self-concept enhancement strategies, as well as reading remediation programs. In addition, the capacity of the RSCS to profile a pupil’s reading self-concept in specific domains (Competence, Difficulty and Attitude) can help to target self-concept enhancement strategies, thus increasing their effectiveness. For example, providing feedback through statements that emphasise their positive achievements may help children develop the belief that they can succeed on certain tasks. Discussing with children how success in certain reading tasks will be of value to them (e.g. reading instructions to download songs from the Internet) can assist children to become more
self-motivated and develop more positive attitudes to reading (McCabe & Margolis, 2001). Any intervention program aimed at improving a pupil’s reading skills must be accompanied by specific strategies to build a pupil’s reading self-concept.

The finding in this study of equal performance of boys and girls on a standardised reading test has implications for teachers, school counsellors and Learning Support Teams. These professionals need to be aware of a potential referral bias due to the influence of behaviour on teacher judgements about boys’ reading. Flynn and Rahbar (1993) suggest there is a need to educate staff to raise awareness that girls “don’t express their frustration with learning to read in the overt way boys typically do” (p. 306). Therefore, it is important to monitor the progress of girls more closely and use a variety of assessment methods to accurately identify any pupil experiencing difficulty in learning.

**Future Directions**

Using the RSCS enabled the gathering of valuable data on children’s beliefs about themselves as readers in terms of difficulty, competence and attitudes. A worthwhile addition to this data would be the use of interviews, to gather qualitative information pertaining to children’s reading habits such as time spent reading, texts read, perceptions of early reading experiences and family reading habits. For example, Millard (1997) found a combination of quantitative and qualitative data useful to gain valuable insights into gender identity and reading self-perceptions.

A question arising from this study, and one worthy of future research, is whether self-concept instruments measure identical aspects of self-concept with matching validity for males and females. Marsh (1994) made the point that evaluations of gender differences frequently focus only on mean levels of self-concept and results are typically consistent with sex stereotypes for the Maths and English areas. He suggested that consideration should be given to whether self-concept instruments are interpreted the same for males as for females. Factor structure invariance analysis could help to clarify gender patterns in the RSCS.

It was beyond the scope of this study to determine the causal ordering of reading self-concept and reading achievement; that is, does reading self-concept have a causal influence on reading achievement or is reading self-concept a consequence, rather than a cause, of reading achievement. While the causal ordering of academic achievement and academic self-concept relationships has been comprehensively researched without agreement (Byrne, 1986; Helmke & van Aken, 1995; Marsh & Yeung, 1997; Muijs, 1997; Skaalvik & Valas, 1999), there is a need for more detailed research into these links with regard to reading achievement and reading self-concept.

Another area worthy of future research is the role of SES in the relationship between reading achievement and reading self-concept. While studies have highlighted the impact of socio-economic background on reading success, its impact on reading self-concept is unknown. Other variables that need further researching for their impact on reading self-concept and reading achievement relationships include language level, NESB status and language background.

**Summary and Conclusions**

The present study demonstrated a strong positive relationship between reading achievement and reading self-concept. This result is consistent with other findings in the area of reading self-concept and reading achievement relations. This relationship prevailed across all aspects (Accuracy, Comprehension and Rate) of reading achievement and all components (Competence, Difficulty and Attitude) of reading self-concept. Reading rate was found to make the largest significant contribution to levels of reading self-concept. The importance of the present study lies in the fact that the significant relationship between reading achievement and reading self-concept was confirmed with a Year 3 Australian sample, and that a highly significant relationship was found between all combinations of variables across both scales.

Contrary to other studies, findings did not indicate that females had higher reading self-concepts than males or that females were superior readers to males. These findings suggest that the frequent reports of higher reading achievement levels of girls and higher percentages of boys experiencing difficulties in reading, need to be re-considered in terms of the nature of the identification and referral processes commonly used, particularly in terms of the cultural background of the sample and the ethos of the school towards literacy.

The study established the use of the RSCS as a reliable reading self-concept instrument, particularly providing data on three key components of reading self-concept. This study has also contributed to the body
of knowledge concerned with the role of self-concept and reading achievement levels, in the reading process. In confirming the strong relationship between all aspects of reading achievement and all components of reading self-concept, this study has reinforced the importance of incorporating self-concept enhancement strategies as an important adjunct to skill development in reading remediation programs.

About the Authors
Nicole Rider is a teaching graduate of Macquarie University majoring in Psychology, English and History. She taught in Australia, the United Kingdom and Canada for 10 years in a variety of settings. Working as a Consultant in Aboriginal Education for the Department of Education and Training, Nicole organised events for Aboriginal children and their communities, and conducted training and development in the implementation of the Aboriginal Education Policy for teachers in South West Sydney. Furthering her studies in Psychology, Nicole completed a Masters of Education (Counselling Psychology) in 2002 at the University of Western Sydney and has worked/currently works as a School Counsellor in South West Sydney (for the past three years). Nicole is a registered Psychologist.

Dr Susan Colmar is a registered psychologist, who has been practising in educational, developmental and child psychology for twenty-nine years, working in NSW, New Zealand and the United Kingdom. Susan is presently the coordinator of school counselling training at the University of Sydney, and formerly held this position at the University of Western Sydney. She has published over 30 research and conceptual articles and chapters, and has also presented at many conferences, including several invited addresses and workshops. In addition, Susan has received several grants and research awards. Susan is the tertiary representative for the Australian Guidance and Counselling Association, promoting best practice in educational psychology within schools.

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References


