The Relationship between Social Acceptance and Literacy Achievement in Grade One

by

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Abstract

Social factors, like social acceptance, are rarely included in conversations about improving children's literacy achievement. This is problematic because of the connection between children's social experiences and their ability to use language, including written language. Peer ratings of social acceptance and reading ability in 91 grade one students were investigated. We predicted that more socially-accepted students would have significantly higher reading scores than less-accepted students. Results showed that peer acceptance was not associated with reading performance. Explanations of findings and recommendations for future research are discussed.

Preface

This thesis is an original work by Nicole Ansell. The data for this thesis were collected as a part of a larger research project which received ethics approval from the University of Alberta Research Ethics Board, No. Pro0005906, August 14th, 2015. The larger research project was conducted to investigate the effectiveness of a new reading intervention program in multiple sites across Canada. Funding for the project came from the Social Sciences and Humanities Research Council (MCGILLU 234946) to Drs. Robert Savage, George Georgiou, and Rauno Parrila.

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Social competence and literacy are skills that are foundational to child development and success and well-being throughout the lifespan. We know that peer relationships are a source of important resources, such as companionship, support in solving problems, emotional support, and the development of identity (Wentzel, 2005). Further, according to Rodkin and Ryan (2012), the ability to form positive relationships with peers is associated with outcomes like personal well-being, self-esteem, and the development of adaptive, prosocial attitudes and skills. There is also substantial evidence that positive social relationships are associated with increased academic engagement and performance (Rodkin & Ryan, 2012).

Literacy is an essential life skill learned in childhood. Being able to read proficiently is necessary for success in all academic subjects and general participation in society (Kiuru et al., 2017). Literacy ability, like peer relationships, is associated with increased school motivation and completion. Because of the essential role of both literacy and peer relationships to healthy child development, there is an impetus for investigation into their relationship to better understand how social factors affect literacy acquisition in the early school years.

The Importance of Socialization to Academic Achievement

Rodkin and Ryan (2012) reviewed the recent literature on the relationship between socialization and academic achievement. The authors observe that although there is a wealth of research on socialization and development, little effort has been made to frame results towards educational concerns. Social factors are largely ignored in educational programming, where most focus is afforded to academic achievement gains only. Rodkin and Ryan note that the lack of understanding regarding how socialization and academic outcomes are related is unfortunate as

"all education is group work"; that is, one cannot remove social influences from learning and school performance as they are inextricably linked.

That said, several possible explanations exist for how children's social behaviours are linked to academic achievement. Children's peers can act as sources of validation, encouragement, information, advice, and help with coping or facing academic challenges, and they provide highly important social support, all of which can greatly impact academic engagement and achievement (Altermatt, 2007; Ladd, Herald-Brown, & Reiser, 2008; Wentzel, 2005). Having several peers who provide this kind of social support is thought to be crucial to one's academic performance.

Social status may also contribute to academic achievement. Rodkin and Ryan (2012) describe social status as social preference, or how many peers "like" or want to affiliate with a particular child. In school settings, children who have high social status (i.e., are well-liked) are more likely to be cooperative, friendly, and sociable (Rubin, Bukowski, & Parker, 2006), whereas children who have low social status (i.e., are not well-liked) are more likely to be aggressive, anxious, and withdrawn. Rodkin and Ryan suggest that this may be because children with lower social status feel less connected and more alienated from their school ecology. The attributes associated with high and low social status relate to students' engagement with school generally and their classroom participation, and this in turn affects their school performance (Rubin, Coplan, & Bowker, 2009). This has been reflected in other research that has shown that children who are rejected by peers (i.e., have low social status) are at higher risk of low academic outcomes (Bierman, 2004; Ladd, 2005).

The Relationship Between Language and Social Factors

Previous research has shown support for a link between oral language and social outcomes, suggesting that children who struggle with language also find it difficult to form relationships. McCabe and Meller (2004) investigated the relationship between language and social competence. To do this, they administered measures of oral language ability, social problem solving ability, and emotion knowledge to the teachers, parents, and peers of 4 and 5-year-old children with and without language impairments. Results revealed that children with oral language impairments were rated as less assertive than children without language impairments and were also seen to have more internalizing behaviours, such as anxiety, worry, and low self-esteem. The authors suggest that these traits are related to success in the social environment for they may cause children with language impairments to have greater difficulty interacting with and relating to their peers.

Similar findings have been mirrored in other research. Children with oral language deficits often experience social problems as they sometimes struggle to keep up with the pace of a conversation (Cohen et al., 1998), and are more likely to experience bullying (Savage, 2005). These research findings suggest that children with better language skills may make friends more easily, as they are less likely to be bullied and find it easier to communicate with peers.

The Relationship Between Language and Literacy

As there is some evidence that oral language and social ability are related, difficulties with oral language may also extend to difficulties in literacy. Snow, Tabors, Nicholson, and Kurland (1995) administered measures of oral language development and early literacy to children in Kindergarten and first grade to evaluate how these constructs were connected in this population. Results demonstrated that oral language skills in Kindergarten, such as story-telling

or providing word definitions, were strongly predictive of early literacy skills in grade one including reading, spelling, and comprehension.

Consistent findings have been reflected in other research. For example, children who are delayed in attaining typical language milestones perform lower in reading and spelling at age 7 or 8 and are more likely to have reading disabilities (Rutter, Tizard, & Whitmore, 1970; Silva, Williams, & McGee, 1987). Due to the importance of communication in the initiation and maintenance of relationships, language-related academic skills, such as reading and writing, may be more vulnerable to the effects of socialization than other academic skills. The present study focuses specifically on literacy, rather than academic performance in general, as it may help to illuminate more strongly the close relationship between social factors and language-related academic skills, as reflected in literacy skills.

The Relationship Between Social Factors and Literacy

Little evidence is available regarding the relationship between social factors and ability in literacy subjects, like reading and writing. Miles and Stipek (2006) examined the longitudinal relationship between social behaviour and literacy achievement in low-income children in kindergarten and grade one, three, and five. Social behaviours of interest included aggression and prosocial behaviour and were rated by children's teachers. Literacy was measured individually using the word reading and passage comprehension subtests of the Woodcock-Johnson Tests of Achievement. The results showed significant positive correlations between literacy achievement and prosocial behaviour, but this relationship weakened from grade one to grade five. Literacy achievement was negatively associated with aggression, and this relationship strengthened over time. According to these results, it can be said that achievement in literacy appears to be linked to important social behaviours. These findings are directly relevant to the current study, but

differ in that they only examine teacher ratings of prosociality and aggression and do not look at patterns of acceptance or rejection from the perspective of the children in the classroom, as the present study endeavored to do.

Sociometric Methods

Newcomb and Bukowski (1983) report on various methods used to evaluate peer acceptance. The authors explain that in previous research, social status was operationalized as the number of nominations a child received from peers as being a friend or preferred playmate. This method of determining social status relies on only one dimension - positive nominations - and ignores the complexity of social networks. The authors point out that rejection by peers may be just as important as acceptance in evaluating social standing and have more important implications for intervention.

The two-dimensional methods suggested by Newcomb and Bukowski have subsequently been created to include both positive and negative perceptions and capture social visibility as well. One of these methods, used in the present study, is derived from work by Coie, Dodge, and Coppotelli (1982). This method uses the Like To Work (LITOW) or Like to Play (LITOP) measure to gather information on children's attitudes of acceptance, rejection, and visibility of their peers to evaluate social standing in both school (i.e., LITOW) and play (i.e., LITOP) settings. Both are forced-choice probability (FCP) measures adapted from another instrument called "How I Feel Towards Others" (Agard, Veldman, Kaufman, & Semmel, 1978). It is used to determine peer willingness to affiliate with other students, in order to categorize each student into social status groups. The LITOW (described in-depth below) and LITOP obtain children's preference (acceptance and rejection) and visibility (how well-known they are) ratings, which are then standardized and divided into social categories including popular, rejected, average,

neglected, or controversial. Newcomb and Bukowski's (1983) investigation showed that the Coie et al. (1982) method was comparable or superior in reliability and validity to other methods, including Peery's (1979) nomination method, and Bronfenbrenner's (1943) probability method. A later investigation by Frederickson and Furnham (1998a) compared different sociometric classification methods including the FCP method with a sample aged 9-12. The test-retest reliability of forced-choice acceptance and rejection indices obtained from the LITOW, ranged from .70 to .78 over five weeks, which was superior to the other methods evaluated. Construct validity was evaluated by comparing the results of FCP method with those from the Guess Who measure, in which students "nominate" peers as having distinct social characteristics, including "cooperates", "disrupts", "shy", "starts fights", "seeks help", and "leader". In these comparisons, it was shown that sociometric groups significantly differ in the traits captured by the Guess Who measure, suggesting that these groups represent practical individual differences and thus carry some construct validity (Frederickson & Furnham, 1998a).

Benefits of using Forced-Choice Probability

Dodge, Pettit, McClaskey, and Brown (1986) proposed a model of social interaction in which children's perceptions of their peers are influenced both by the social situation in which they exist, and certain aspects of peer behaviour. The FCP method is valuable because it is highly sensitive to the reference group (i.e., the social context) of the individual. This is important in sociometric research as the social context is necessary to accurately understand an individual's position in their system. Classrooms are typically used as the social reference group because these children are taught together throughout the school day and would therefore know others in their class well, while they might not know others in the same grade from different classes. In further support of the FCP method, Newcomb, Bukowski, and Pattee (1993)

suggested that reports of social behaviours from peers were more consistent in differentiating groups than information reported by adults, from direct observation, or from self-reports.

This measure also offers other benefits over other previously used methods. As Wallander and Hubert (1987) suggested, in order to understand the complexity of social status, multiple dimensions of social status must be used. As such, the LITOW and LITOP depict social status using three dimensions - peer acceptance, peer rejection, and peer visibility. Peer acceptance refers to a willingness to affiliate with certain child, peer rejection refers to a desire to avoid affiliation with a certain child, and peer visibility relates to whether peers have enough information to make a decision about affiliation (Frederickson & Furnham, 1998b; Newcomb & Bukowski, 1984). These dimensions are combined to create categories of popular (i.e., high acceptance, low rejection), average (i.e., mid acceptance, mid rejection), rejected (i.e., low acceptance, high rejection), neglected (i.e., mid acceptance, mid rejection, low visibility), and controversial (i.e., high acceptance, high rejection). This measure is perceived by some as an improvement over simple classification based on positive nominations used previously (Bukowski & Hosa, 1989). Furthermore, forced-choice ratings may also be preferable to assessment methods that require sociometric nominations of students, in which individuals must nominate their peers as possessing positive or negative social traits. This method has been criticized as being unethical, as it may cause undue division of students and negatively influence peer attitudes and relationships. Instead, the LITOW and LITOP ask students to reflect on their own willingness to work with classmates rather than assign limiting labels (Frederickson & Furnham, 1998a).

Social Classification and Personal, Behavioural, and Environmental Variables

A second paper by Frederickson and Furnham (1998b) used the LITOW and LITOP to determine how different social classifications were related to personal, behavioural, and environmental variables in elementary and middle-school aged children from mainstream schools with moderate learning difficulties. The results of this study found that several personal, behavioural, and environmental variables were associated with certain social status groups. For example, physical attractiveness, traits like "funny", "starts fights", "unhappy", and "cooperates", depression, peer maladaptiveness, and classroom traits like cohesiveness and difficulty were found to make significant contributions to the separation of sociometric groups. Most relevant to our study, these researchers also found that children's reading scores contributed to the separation between sociometric groups, specifically popular and average (Frederickson & Furnham, 1998b). Taken together, the literature on social classification suggests that FCP and the Coie et al. (1982) score standardization method is one of the most reliable and valid methods of social measurement, and has several methodological benefits over other procedures, making it a good choice for this study.

The Present Study

Few studies have investigated the relationship between social factors and literacy achievement, in general. The basis of the present study is largely derived from theoretical links in the literature linking social competence to language and linking language to literacy. Some of this research investigated constructs other than social acceptance, such as social skills ratings and, while informative, social acceptance ratings by peers may best reflect children’s actual attitudes towards their peers (Newcomb et al., 1993) as subtleties in social attitudes may not necessarily be visible to external parties.

Generally, there is a need for research investigating the relationship between social acceptance and literacy in early school years. Both social acceptance and literacy are essential factors related to success in academic subjects and participation in society. As there is substantial reason to suggest that these skills are linked, it is important to better understand this relationship in order to optimize individual success in both domains. Literacy programming which enhances peer acceptance, participation, and reading skills may be a viable way for teachers and other education staff to improve social and literacy outcomes for all children, not only a select few (Kiuru et al., 2017). Grade one is a foundational developmental period for both learning to read and learning how to establish social relations with peers (Katz & McClellan, 1991; Pandis, 2001; Shaywitz, 2003). Thus, a better understanding of this relationship at this developmental stage is the focus of this study.

The purpose of the present study was to build on the extant literature by addressing social acceptance and academic achievement in a new way. Specifically, we were interested in how social status categories are associated with literacy achievement in grade one. The research question was as follows: Do different social status categories (i.e., popular, rejected, average, and neglected) differ by reading ability in the Fall or Spring of grade one, or in their reading change-scores over the year? Based on the existing research evidence, there is suggestion that social status categories might be associated with reading ability; thus, it is predicted that social categories including more accepted and visible, and less rejected students (e.g., *Popular* and *Average*) will show higher mean reading scores than categories including students who were less accepted, more rejected, and/or had low social visibility (e.g., *Rejected* and *Neglected*). We chose to use only work-based acceptance (i.e., the LITOW) rather than play-based acceptance

(i.e., the LITOP), as this may better reflect who students interact with in a learning environment, where literacy instruction and school work takes place.

Method

To investigate whether there is a relationship between students' peer social acceptance and literacy skills, students' reading and social data were gathered and analyzed from five grade one classrooms. There were two assessment phases, which took place at the start of the grade one academic year (October to November 2015) and at the end of the year (April to May of 2016). The data reported in this paper were collected as a part of a larger research project pilot-testing a new reading intervention program in sites across Canada.

Participants

The participants were 91 grade one students (n = 41 male, n = 50 female) across five classrooms in three schools. Classrooms had between 15 and 20 participating students, and ages ranged from 5 years, 8 months to 7 years, 6 months (NB: there were only four children who were over 6 years, 9 months in the sample; M = 6 years, 3 months; SD = 0.5 years) at Time 1. The five classrooms were located in a large urban center in Alberta, Canada and were provided as a convenience sample recruited through the larger research project. As this was intended to be an exploratory study, five out of the total 15 classrooms were chosen to run our analyses to determine whether it is worthwhile to apply the same procedure to the total sample. The sample of 91 students was sufficiently large to detect an effect necessary to answer our research questions (Stevens, 1996). Data were collected by research assistants who were graduate students trained together by a co-investigator of the larger study. Each were assigned to one or two of the participating schools to collect the assessment data.

Procedure

Before data collection began, consent forms were given to teachers to disperse to students and their parents. Once students presented signed consent forms from parents, they met individually with a researcher to complete several assessments. The total assessment included a battery of literacy measures and social measures and took approximately 30 minutes to complete for each student. The first and second assessment phases used the same measures, so that change-scores could be generated.

Measures

Literacy measures. The literacy measure examined in this study was the Wide Range Achievement Test, Fourth Edition (WRAT-4) Word Reading task. This task was chosen because it measures a construct that has been shown to be highly predictive of overall reading ability in grade one (Jenkins, Hudson, & Johnson, 2007). It is also a subtest of a larger standardized measure that has undergone rigorous reliability and validity testing, making it a good quality tool to measure word reading (Wilkinson & Robertson, 2006). Student's raw scores (i.e., items read correctly) were converted to standard scores using the WRAT-4 manual scoring tables to be used in analysis. See Table 1 for details about the tasks used in analyses.

Table 1. *Descriptions of the Reading and Social Measures*

Test	Task	Construct	Description
WRAT-4	Word Reading	Word Reading/ Decoding	Children read aloud written letters and words of increasing difficulty.
LITOW		Peer acceptance, rejection, and visibility to determine social category membership	Children are asked to report how much they like to work with each of their classmates one by one; either "a lot", "a little", or "not really", as depicted by smiling, neutral, and frowning faces.

Social Acceptance measure. The Like to Work measure (LITOW; Frederickson & Graham, 1999) is a questionnaire that was used to determine the ratio of classmates who do, and do not, like to work with each child. The LITOW asks students to rate how much they like to work with each of their classmates ("a lot", "a little", "not really", or "I don't know"). Each student is shown a list of their classmates' names where each classmate has a smiling, neutral, and frowning face, and a question mark next to their name. These symbols correspond to the response options "a lot" (positive choice), "a little" (neutral choice), "not really" (negative choice), and "I don't know" respectively. Each student is asked "how much do you like to work with _____" for each of their classmates. The LITOW is a widely-used tool with well-documented technical qualities, including reliability and validity (Frederickson & Furnham, 1998b), which makes it a good tool for this purpose.

Only the Spring data from this questionnaire were used in this study. The rationale for excluding the Fall LITOW data was based on the theory that peer attitudes at the start of the school year are unstable and likely to change as the year progresses. We therefore decided that the Spring LITOW data would be a more valid representation of peer attitudes. Children's responses to this measure were converted into indices of Acceptance, Rejection, and Visibility (Frederickson & Furnham, 1998b; Newcomb & Bukowski, 1984). The Index of Acceptance is calculated by dividing the number of times a classmate reported that they liked to work with a child "a lot", by the combined number of times classmates chose any response other than "I don't know". Similarly, the Index of Rejection is calculated by dividing the number of "not really" responses by the combined number of responses other than "I don't know". The Acceptance value therefore represents the proportion of peers who endorsed the like to work with "a lot" option, and the Rejection values represents the proportion who responded with "not

really". The Visibility index was created by standardizing the frequency tally of "I don't know" responses for each child by classroom. Thus, students with high values were those with the most "I don't know" responses and thus the lowest social visibility.

Like the Visibility scores, once Acceptance and Rejection scores for each child were calculated, then they were converted to a z-score distribution for each classroom, in which each student is compared to the peers in this classroom (Coie et al., 1982). By quantifying where each student stands in relation to their classmates in a standardized format, students across classrooms could be compared. Z-score distributions were generated by splitting the data in the SPSS file by classroom, and generating descriptive statistics for each classroom's Acceptance, Rejection, and Visibility scores which included standardized values as new variables. Once these z-scores were generated, criteria were established to assign each child to one of five social categories: *Popular*, *Rejected*, *Average*, *Neglected*, or *Controversial*. We later abandoned the *Controversial* category because no students met the criteria.

The classification criteria were conceptualized according to social exchange theory (Thibault & Kelley, 1959), which posits that individuals select who they want to affiliate with according to perceptions of the associated costs and benefits of affiliation. For example, popular children are those for whom the predominant response of the reference group is that they are desirable to affiliate with. In other words, the benefits of interacting with them outweigh the costs. The opposite is true for rejected children; the predominant response of the group towards a rejected student is a desire to avoid affiliation with him/her. Neglected students are those who the reference group are largely indifferent to; they are not as well known by their peers. Average students are those for whom there is no predominant group response (Frederickson & Furnham, 1998a).

Data Analysis

The analyzed data included students' standard scores from the WRAT-4 Word Reading task from Fall and Spring, their change-scores on this task (Spring score minus Fall score), and social category membership (obtained from the LITOW in the Spring). All data analyses were conducted using SPSS Statistics version 25.

Preliminary analyses. Data were inspected for missing values and for accuracy of data entry. Only students who did not participate in one of the study phases were removed from the dataset *(n* = 10).

Normality. The reading data were assessed for normality of distribution in order to meet the assumptions necessary to conduct further statistical analyses. When the whole sample was combined, Fall Reading SSs were not normally distributed according to the Shapiro-Wilk value (p = .02), but Spring Reading SSs and Reading Change-Scores were normal. Because we wanted to analyze the whole sample together to maximize statistical power, we transformed the Fall Reading SSs by the total sample. To determine which transformation to use, we generated a histogram of the Fall Reading SSs and selected a conversion based on the shape of the distribution in the graph. A logarithmic transformation was applied and further normality tests showed that the Fall Reading SSs was consequently normally distributed and appropriate to use in additional analyses. This transformation process was taken from Pallant (2013).

Homogeneity. Levene's test of homogeneity of variance was conducted to see if the different groups used in analyses had equal variances in the reading data. Results demonstrated that all classrooms and social categories had statistically equal variance (i.e., distribution of scores) for the transformed Fall Reading SSs (F = 1.36, p = .25), and untransformed Spring Reading SSs (F = 1.42, p = .24) and Reading Change-Scores (F = 1.08, p = .36).

Principal analyses. First, descriptive statistics were generated to examine means and standard deviations of the reading data by class and by social acceptance category. A paired-samples t-test was used to determine whether or not Fall and Spring Reading SS differed. A one-way ANOVA was conducted to determine if the five classrooms differed in mean Fall Reading SSs, Spring Reading SSs, or Reading Change-Scores.

In examining the social acceptance data, frequencies of students in each social acceptance category were also generated by class and by the total sample to examine the proportions of students who fell into each category. A Chi-Squared goodness-of-fit test was also conducted to evaluate whether the proportions of students in each social category differed significantly by class. Two ANOVAs were used to determine whether a) classrooms or b) social categories differed in mean Index of Acceptance, Rejection, and Visibility values, before standardization and categorization. Finally, an ANOVA was conducted to determine whether the students in the different social categories in each classroom differed significantly in their reading skills.

Results

Reading Scores

For the total sample, the average Fall Reading SS was 94.87 (*SD* = 17.57) before transformation, and the average Spring Reading SS was 110.40 (*SD* = 14.14). According to the WRAT-4 manual, these are *Average* and *Above Average* standard scores respectively. This means that compared to the same-age normative sample of children, the students in our sample had reading scores that were generally in line with what might be expected for their age in the Fall, and reading scores that were slightly higher than might be expected for their age in the Spring. While the mean reading scores were generally average, there was a wide range of reading scores across the sample with scores ranging from 61 (*Lower Extreme*) to 145 (*Upper*

Extreme). A paired-samples t-test demonstrated that there was a large increase in Spring Reading SSs compared to the students Fall Reading SSs [$t(88) = 12.82$, $p = .000$, $d = 1.26$]. See Table 2 for mean scores by class.

Regarding change over the year, the overall mean Reading Change-Score was 15.70 (*SD* = 11.55), which means that on average, students improved their ability to decode words by approximately one standard deviation over the course of grade one. This outcome suggests that on average, the students in the overall sample improved over the course of the year more than would be expected, as their rank position did not stay the same compared to the normative sample.

Classroom Differences in Reading Scores. The results of the one-way ANOVA demonstrated that the five classrooms did not differ significantly in mean Fall Reading SSs ($F = 1.62$, $p = .18$), Spring Reading SSs ($F = 0.45$, $p = .77$), or Reading Change-Scores ($F = 2.25$, $p = .07$).

Table 2. *Means, Standard Deviations, Minimum and Maximum Values for each Reading Variable by Class and Overall Sample*

Variable	Class 1a	Class 1b	Class 2a	Class 2b	Class 3a	Overall
			M (SD), Min-Max			
Fall Reading SS	105.21 (17.43) 77-140	94.39 (15.83) 72-132	92.44 (13.84) 72-121	94.26 (21.34) 61-132	90.80 (17.12) 62-126	94.97 (17.57) 61-140
Spring Reading SS	114.50 (12.56) 96-136	108.33 (13.16) 88-134	109.15 (13.92) 85-136	109.74 (13.85) 81-139	111.25 (17.00) 79-145	110.40 (14.14) 79-145
Reading Change-Score	9.29 (11.30) -6-27	13.94 (11.91) -5-41	17.39 (11.43) 2-44	15.47 (10.62) -4-35	20.45 (10.96) -1-46	15.70 (11.55) -6-46

Note. SS: Standard Score

Social Acceptance Categories

Values were calculated to determine which students were considered *Popular*, *Rejected*, *Average*, *Neglected* and *Controversial* in a peer working environment. The social category criteria were as follows. *Popular* students were those whose Acceptance z-score was greater than 1.0 and Rejection z-score was less than -0.5. This means that students were labelled *Popular* if they were at least one standard deviation above the mean in Acceptance (i.e., more accepted than 85% of peers), and at least half of a standard deviation below the mean in Rejection (i.e., less rejected than 70% of peers). The opposite criteria were created for *Rejected* students: at least one standard deviation above the mean for Rejection, and at least half of a standard deviation below the mean for Acceptance. *Average* students were those whose Acceptance and Rejection z-scores were between -1.0 and 1.0. Of the *Average* students, *Neglected* students were identified as those whose "I don't know" response z-score was greater than 1.0 (i.e., more "I don't know" responses than 85% of peers). *Controversial* students were those whose Acceptance and Rejection scores were both at least 1.0 (i.e., more accepted and more rejected than 85% of peers); however, we later discovered that no subjects met these criteria. As described above, this is a forced-choice social category classification method, which relies on z-score "cut-offs" that represent a predominant response pattern in terms of peers' willingness to work with each student. This method has been used in other studies that used the LITOW (e.g., Coie et al., 1982; Frederickson & Furnham, 1998b; Newcomb & Bukowski, 1983).

There were some cases (n = 19) across classrooms that did not meet any social category criteria or who were very close numerically to meeting a different category's criteria. For example, one student had an Acceptance z-score of 0.88 and a Rejection z-score of -1.09. Although this does not meet any of the social category criteria, it makes the most sense to categorize this student as *Popular* because although their Acceptance z-score was shy of 1.0,

they had a very low Rejection z-score suggesting there were very few peers who did not like to affiliate with this student. The response frequencies also supported the decision to categorize this student as *Popular*; they had eight like to work with "a lot" responses, three "a little" responses, and only one "not really" response. Judgement was used to categorize each of these cases appropriately, to make sure all participants could be included in analysis. Table 4 describes the index score means across the four social categories that were used in the study (i.e., *Popular, Rejected, Average*, and *Neglected*).

Across the total sample, 25% of the participants met the criteria for the *Popular* category, 18% were *Rejected*, 48% were *Average*, and 9% were *Neglected*. No students met the *Controversial* category criteria or were similar to it, so we dropped this category. A Chi-Squared test for goodness-of-fit was conducted to determine if the proportions of students in each social category differed by class. Classrooms did not have significantly different proportions of *Popular, Rejected, Average,* or *Neglected students* [$X^2(12, N = 91) = 4.82, p = .96$)]. See Table 3 for proportions of each social category by class. Interestingly, although the classrooms did not differ in their proportions of *Popular, Rejected, Average*, and *Neglected* students, according to another ANOVA, classrooms did differ in mean Index of Acceptance ($F = 3.97, p = .005, \eta^2 = .16.$) and Rejection ($F = 5.67, p = .000, \eta^2 = .21$) values. Mean Visibility values did not differ by class ($F = .307, p = .873$; see Table 4).

Table 3. *Proportions of each Social Acceptance Category by Class and Overall Sample*

Class	Popular	Rejected	Average	Neglected
Class 1a	36%	21%	36%	7%
Class 1b	28%	17%	50%	5%
Class 2a	25%	15%	55%	5%
Class 2b	21%	10%	53%	16%
Class 3a	20%	25%	45%	10%
Overall	25%	18%	48%	9%

Once students were categorized into the four social categories according to our parameters, an ANOVA was conducted to determine whether the resulting groups showed significant differences in mean Index of Acceptance, Index of Rejection, and Visibility values. The results showed that the groups did significantly differ in mean Acceptance ($F = 41.21$, $p = .000$, $\eta^2 = .59$), Rejection ($F = 48.15$, $p = .000$, $\eta^2 = .62$), and Visibility ($F = 18.89$, $p = .000$, $\eta^2 = .39$).

Table 4. *Means and Standard Deviations for Acceptance, Rejection, and Visibility across Social Categories*

	Popular	Rejected	Average	Neglected	Overall
			M (SD)		
Index of Acceptance	0.74 (0.11)	0.28 (0.12)	0.52 (0.14)	0.51 (0.14)	0.53 (0.20)
	Popular > Rejected, Average, Neglected; Rejected < Average, Neglected; all others *ns*				
Index of Rejection	0.13 (0.08)	0.54 (0.12)	0.26 (0.12)	0.24 (0.09)	0.28 (0.17)
	Rejected > Popular, Average, Neglected; Popular < Average; all others *ns*				
Visibility	2.13 (1.29)	2.44 (1.21)	1.61 (0.92)	4.75 (1.17)	2.16 (1.39)
	Neglected < Popular, Rejected, Average; all others *ns*				

Relationship Between Reading and Social Categories. To account for multiple tests and to reduce the risk of a Type 1 error, a more stringent alpha value of .001 was applied to the final ANOVA. The results of the one-way ANOVA demonstrated that the four social categories did not differ significantly in mean Fall Reading SSs ($F = 0.21$, $p = .89$, Spring Reading SSs ($F = 0.392$, $p = .76$), or Reading Change-Scores ($F = 0.327$, $p = .81$). See Table 5 for the means and standard deviations for each reading variable by social category.

Table 5. *Means, Standard Deviations, Minimum and Maximum Values for each Reading Variable by Social Category*

Variable	Popular	Rejected	Average	Neglected
		M (SD), Min-Max		
Fall Reading SS	94.61 (15.61) 61-118	91.88 (16.80) 75-130	95.93 (20.21) 62-140	96.00 (9.52) 83-111
Spring Reading SS	108.35 (13.80) 81-131	108.81 (13.37) 85-126	111.89 (15.50) 79-145	111.25 (8.83) 102-127
Reading Change-Score	13.74 (10.51) -6-30	16.94 (11.60) -4-46	16.38 (12.83) -4-44	15.25 (7.63) 5-26

Discussion

The purpose of this study was to investigate whether there is a relationship between social acceptance and literacy achievement in a group of grade one students. Specifically, we wanted to know if higher social acceptance was linked to higher achievement in literacy in the Fall or Spring and/or if peer social acceptance was associated with increased improvement in reading over the school year. This study was the first to compare reading ability and social acceptance (as measured by the LITOW) in a grade one sample. In this section, I will address our main findings and how they may be interpreted, how our results to relate to previous research, possible limitations within the study design, and recommendations for future research.

Interpretation of Results

Reading scores by class. Several of the results found in this study are noteworthy and have interesting implications about social acceptance and literacy achievement. The first finding of note was that the classrooms in our overall sample did not differ significantly in their mean Fall or Spring reading performance or their improvement over the year. This finding suggests

that our classrooms were comparable in their performance on the word reading task at both time points and could reasonably be lumped together for analysis. It also indicates that samples and teaching practices were similar and apparently successful, based on the significant improvement noted from Fall to Spring. This may demonstrate that good quality literacy instruction was delivered to students.

Proportions of students in each social category. The classrooms also did not differ significantly in the proportion of students in each social category. We were interested to know how our overall proportions related to the existing research. In Frederickson and Furnham (1998a) there is a table of the proportions of students in each social category across multiple studies. Based on a visual inspection of this table, there does not appear to be a universal pattern in the distribution of proportions across studies, but our distribution was closest to those found by French and Waas (1985) and Newcomb and Bukowski (1984) where the majority of students are categorized as *Average*, with fewer but comparable numbers of *Popular* and *Rejected* students, and fewer still *Neglected* students. Most of the studies listed in this table also had small percentages of *Controversial* students, which our study did not have. However, according to Newcomb et al. (1993), previous research has shown difficulty consistently establishing the validity of the *Controversial* group label, which showed very low stability over time. Thus, the lack of *Controversial* students in our sample did not strike us as problematic. Generally, it can be said that the proportions of students in each social category found in our study are plausible given the distributions cited in other similar research.

Acceptance, Rejection, and Visibility by class. Although the proportions of students in each social category did not differ by classroom, mean Acceptance and Rejection values did differ. By standardizing the social data in order to enable social category comparability across

classrooms, it became difficult to conceptualize each classroom as a unique ecology. Our analysis revealed that the classrooms did differ in how accepting and rejecting students were as a whole, which may relate to other classroom dynamics, described below under "Classroom factors".

Reading scores by social category. The principle aim of this study was to explore whether different social status categories (i.e., *Popular, Rejected, Average*, and *Neglected*) are associated with in reading ability in the Fall or Spring of grade one, or in their change-score over the year. Our analysis revealed that the answer to this question is no. We found no significant relationship between social categories and reading performance in the Fall or Spring, or how much they improved over the year. Taken together, our results suggest that the connections between these constructs appear to remain unclear in grade one. This result disputed our hypotheses, which suggested that students that were more accepted, less rejected, and more visible (i.e., *Popular* and *Average* students), would show higher mean scores than students who were less accepted and visible, and/or more rejected (i.e., *Rejected* and *Neglected*). Our hypotheses were based on the notion that being more socially accepted is associated with enhanced social and academic support, language skills, and school engagement in general. Essentially, the results suggest that in our sample, social acceptance did not play a large role in literacy achievement.

Ties to Previous Literature

Our results differ from the results of the existing research on socialization and literacy ability, which showed some evidence that highly accepted or socially-skilled children demonstrated higher achievement in literacy than less accepted children. There are some possible explanations that may account for why we did not see the relationship between social acceptance

and literacy that we were expecting. The other studies that demonstrated a relationship between peer acceptance and academic skills used older samples of students or students with moderate learning difficulties, or used different social constructs and methods (Frederickson & Furnham, 1998b; Miles & Stipek, 2006). Because this was the first study to compare reading in grade one to social acceptance categories, the differences in the participant samples and methods make it difficult to compare the results directly. In the following section, sample limitations are discussed in relation to this issue.

Classroom factors. It has been noted that in order for social acceptance to have a positive impact on academic achievement, the aims of socialization must be compatible, and not interfere, with academic engagement. Wentzel (2005) noted that when social objectives obscure academic goals, academic conscientiousness decreases. In other words, striving for social acceptance may undermine motivation and performance in academics. This kind of effect may be particularly pronounced if the most socially-accepted (i.e., popular) students are not academically motivated. Research by Dijkstra, Lindenberg, and Veenstra (2008) discovered that the social and academic norms of a classroom were almost entirely determined by the highest-status students. Therefore, it is possible that in some of our classrooms, social acceptance and achievement were not related (or not positively related) because the social tone of the classroom, as determined by the most popular students, did not positively influence academic performance. This might even happen in classrooms where there are less popular students who are academically engaged yet have less influence on other children.

However, students in the present study were above average in reading in Spring and had positive growth in reading skills over the school year indicating that, generally, students were likely academically engaged and/or motivated. Thus, an alternative explanation may be that the

goal structure of the classroom played a role in detracting from academic performance. Roseth, Johnson, and Johnson (2008) described the goal structures of classrooms as cooperative, competitive, or individualistic. In cooperative classrooms, students work together to increase academic performance, where in competitive classrooms, individuals' academic goals are seemingly at odds with one another and students do not help one another. Individualistic classrooms differ in that they include students whose academic performance is not influenced by other students and work is done individually. This study found that classrooms that have cooperative goal structures are more likely to experience higher achievement across students as well as more positive peer relationships. Thus, it is possible that this dimension of our classrooms' social environments may have resulted in differing relationships between social acceptance and literacy achievement across groups.

Another important classroom characteristic, according to Frederickson and Furnham (1998b), was the amount of time children spent receiving additional academic support, which also significantly contributed to sociometric assignment. According social exchange theory (Thibault & Kelley, 1959), the authors suggest that this finding may be due to the perception that if low performing children receive additional supports they may be less costly to associate with either because of enhanced academic performance or reduced negative behaviours. This may have been at play in some or all of the classrooms in our study, in which lower-performing children did receive additional reading support, possibly making them less costly work peers and increasing their social acceptance.

In addition to the provision of academic support to students, teachers' emotional support of students is also known to relate to student outcomes. Hamre and Pianta (2005) used a large sample of young students (ages 5 and 6) at-risk of school failure to see how teacher behaviour

impacted student outcomes. Results showed that at-risk students in classrooms with teachers who provided strong emotional support had achievement scores that were comparable to students who were at low-risk of school failure. Students with teachers who did not provide strong emotional support did not experience this benefit. Although teacher behaviours were not measured in the present study, doing so may help to identify which behaviours act as moderators to student achievement particularly in the early school years, as measured by Hamre and Pianta (2005).

Limitations to Study Design

There are several methodological limitations to this study which may have impacted our ability provide evidence for the hypothesis.

Work-based acceptance. A possible methodological issue in this study may be the social criterion used (i.e., peer acceptance in a work context; as in the LITOW), which may not have been representative of existing social network patterns in the classrooms. Secord and Backman (1974) reported that in play-based assessments (i.e., LITOP), peers reported more mutual acceptance than in work-based assessments, where there was more likely to be non-mutual acceptance or rejection of peers. This means that using work-based acceptance may not have given us a complete picture of social status in the classrooms used. However, because our sample already had fewer *Rejected* and *Neglected* students than *Popular* and *Average* students, using the LITOP might have further widened this gap, resulting in even greater disproportion in group size, which is problematic to statistical analysis.

Standardized social data. Standardizing the social acceptance data as suggested by Coie et al. (1982) allows for enhanced comparability across groups. However, it can be noted that standardization of data may make individuals within peer groups appear more similar than they are and may thus misrepresent them. This may be problematic because categorization may have

resulted in lumping together individuals who are mathematically similar but practically different, thus making it difficult to detect a clear relationship in analyses. Regardless, standardizing the data satisfied both theoretical and measurement concerns, making it the best choice for this study.

Unclassified students. As noted above, our classification method failed to classify approximately 21% of participants; however, this was lower than the rate of unclassified participants from Newcomb & Bukowski (1983; 48% unclassified using the Coie et al., 1982 method). Regardless, artificially assigning uncategorized participants to certain categories may again lump together individuals who are practically dissimilar, affecting the clarity of results.

Measures. As our data were collected under the umbrella of another study, the measures administered were pre-selected. The measures used to capture our variables of interest may have posed other possible methodological limitations. It has been noted in previous research that achievement tests and self-reports may not be sufficient means of capturing student ability and social environments (Rodkin & Ryan, 2012). "Literacy" includes an aggregate of several skills beyond word reading and writing, suggesting that our literacy tests may have been limited in their ability to capture true capacity. Similarly, the social climate of a classroom is affected by constructs other than acceptance, or likeability. Although the LITOW provides a valid and reliable method of capturing social acceptance values, it may have been limited in that it cannot measure how acceptance attitudes influence social network patterns and resulting academic achievement influences.

Sample. Once again, using a convenience sample under a larger study limited our agency in adjusting or expanding our methodology. Further, despite the impetus for understanding literacy and social acceptance in the formative early school years, using a sample of grade one

students may have limited the sensitivity of our measures. As these skills are developing and still relatively new in this age group, it is possible that individual differences are not as pronounced or stable as they may become in later school years.

Suggestions for Future Research

Based on our results, we do not recommend that the same methodology be applied to the total sample of students who participated in the larger research project. Instead, due to the factors that may have influenced our study results, several methodical alterations are proposed to improve the validity of results. To better capture literacy ability, it is recommended that future research uses more measures, including measures of the same reading skill measured here and others. For simplicity purposes, and because word reading is predictive of overall reading ability (Jenkins et al., 2007) only this test was used in our analyses. However, using more measures would allow for more reliable literacy estimates and more variability in scores, which is beneficial to statistical analysis. Similarly, measuring additional social constructs would help to bolster our conceptualization of group acceptance, as well as provide a more complete picture of the social climate of the classroom. Social networks in elementary school may be more complex than any one existing sociometric measure can validly capture. By including play-based acceptance as well as work-based, and by using additional measures and/or constructs, our ability to accurately make interpretations about the relationship between socialization and literacy acquisition would improve. Using measures to capture teacher behaviours, like provision of emotional support, is also recommended to determine whether or not this acts as a moderator to student achievement, particularly in literacy. Finally, as it has been noted that our sample may be too young for our procedure to sensitively capture our variables of interest, it is recommended that the same method be conducted with grade 2 and 3 students where this relationship may be

more salient. In sum, there is an impetus for greater efforts to understand these phenomena, which may require greater focus on contextual influences and multiple conceptualizations of social standing within a peer group (Newcomb & Bukowski, 1984).

Concluding Thoughts

More is left to be determined regarding social patterns and literacy achievement in young children. Despite the limitations to this study, there is a substantial theoretical basis for why the relationship between these two skill sets is important their development. Future research may use the recommendations cited above to measure this relationship validly, and the results of this research may help to inform educational policy and classroom practices. Because reading and social skills are so crucial to individual outcomes, it is important for education staff to be aware of how they may enhance social acceptance and literacy achievement in a mutually beneficial way.

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