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Self-esteem and academic achievement: a comparative study of adolescent students in England and the United States

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Abstract

Utilizing mixed methodology, this paper investigates the relationship between self-esteem and academic achievement for young adolescents within two Western cultural contexts: the United States and England. Quantitative and qualitative data from 86 North American and 86 British adolescents were utilized to examine the links between self-esteem and academic achievement from the beginning to the end of their academic year during their 11th–12th year of age. For both samples, quantitative results demonstrated that fall self-esteem was related to multiple indicators of later year academic achievement. While country differences emerge by the end of the year, math appears to have a consistent relationship with self-esteem in both country contexts. Qualitative analyses found some support for British students' self-perceptions as more accurately reflecting their academic experience than the students from the United States.

Keywords

The attention given to adolescent self-esteem in the United States and other Western nations has resulted from a consistent pattern of educational studies revealing the academic and social benefits derived from a healthy sense of self. The heightened importance that self-esteem has taken among school personnel and parents has spawned a generation concerned with making sure their children develop a positive self-esteem. Yet, research is inconclusive regarding the directional influence of self-esteem (Baumeister et al. 2003), especially in connection to academic achievement for early adolescents who have been shown to experience fluctuations in self-esteem as a result of school climate change and domain-specific school success (Wigfield et al. 1991). The influence of self-esteem on behavior is also complicated by cross-cultural comparisons that have begun to reveal varying societal interpretations of self-esteem (Abbas 1993). As a result, research has begun to take a more

critical eye at the true meaning of self-esteem scores, especially when culturally contextualized and compared to actual individual performance.

Using mixed methodology and longitudinal data, the purpose of the present study is twofold. First, this investigation examines the degree to which there is a relationship between self-esteem and academic achievement for young adolescents within two Western cultural contexts: the United States and England. Second, it examines whether gender influences any relationships between self-esteem and academic achievements. The settings in the United States and England share a number of similarities to assist in controlling for certain variables (including being situated in urban, multi-ethnic, lower socioeconomic background locations), and yet differ sufficiently to warrant cross-cultural investigations. This study is part of a larger investigation examining the influence of these two school cultural contexts on self-esteem/self-concept, academic achievement, school transitions and problematic behavior.

Self-esteem and culture

Theoretical frameworks supporting the necessity for studying learning environments and their relation to socioemotional factors such as self-esteem include Bronfenbrenner's (1979) *ecological theory* of human development and Vygotsky's (1962) socio-cultural approach to understanding learning. The definition of self-esteem has been defined as a 'positive or negative attitude toward … the self' (Rosenberg 1965, 30); however, the degree to which socio-cultural context influences this 'positive or negative attitude' remains uncertain. While Western cultures have been shown to interpret self-esteem similarly compared to vastly different cultures (Chan 2000), any difference in socio-cultural context may impact one's self-esteem (Abbas 1993). For instance, Chan (2000) found that with a sample of British-Chinese, white British and Hong Kong Chinese, there was less similarity between the two Chinese groups than there was between the two British groups. Chan suggests that the impact of Western society and its more individualistic, less authoritarian culture greatly influenced the British-Chinese students' self-perceptions.

Much cross-cultural research has taken place among vastly different cultures, attributing significant differences in measure of self-esteem to culturally based interpretations of collectivism and individualism (Schmitt and Allik 2005). However, other researchers have found that additional cultural attributes must explain differences in self-esteem scores and suggest that measures that allow for participant expression could assist in dissecting the impact of culture (Farruggia et al. 2004).

Self-esteem and academic achievement

Drawing from various theoretical perspectives (e.g., social comparison theory, symbolic interaction theory), much research has validated the assumption that high self-esteem is associated with educational achievement (Marsh, Byrne, and Yeung 1999), that ability levels may influence depressive symptoms and levels of self-esteem (Humphrey, Charlton, and Newton 2004), and that a positive self-concept is desirable for children's personal development (Branden 1994). Evidence for the reciprocal nature of self-esteem and adolescent academic achievement has been found by some researchers, but findings are not consistent across studies nor documented as well as the bi-directional influence between domain specific self-concept and academic achievement. For instance, a study of 838 secondary students in the United States has found a significant relationship between self-esteem and academic achievement for seventh-grade students, but not for ninth-grade (Alves-Martins et al. 2002). In a rigorous longitudinal test of the interrelationships among self-esteem, self-concept and academic achievement based on a large sample of East and West German seventh-graders, Trautwein and colleagues found that prior self-concept

significantly predicted later achievement and prior achievement significantly predicted later mathematics self-concept; however, a reciprocal relationship between self-esteem and academic achievement was not found (Trautwein et al. 2006).

While evidence of a relationship between self-esteem and achievement exists, other studies fail to find it within particular populations. For instance, in a study of 643 African-American and white adolescents in the rural south, Tashakkori (1993) found that academic self-beliefs were not a strong predictor of self-esteem; however, self-beliefs about social standing and relationships carried more weight. Ross and Broh (2000) have found in an analysis of data from the National Educational Longitudinal Study in the United States that a sense of personal control affects subsequent academic achievement but self-esteem does not. Furthermore, personal control has also been found to be related to self-efficacy which has shown to require a certain level of positive self-evaluations to maintain self-efficacy (Schunk 1995; Pajares 1996). However, while self-efficacy and self-esteem are often found to be related, the increasing evidence revealing the positive effect from student self-efficacy for academic success does not likewise demonstrate a direct positive influence from self-esteem on school achievement (Ross and Broh 2000).

Nonetheless, a positive self-esteem has been viewed as a desirable attribute for students, and therefore studies investigating self-esteem measures often note the important influence of teacher dispositions (Helm 2007) and school climate (Scott 1999) in the development of a positive sense of self. In particular, studies in urban schools have revealed the significance of teacher support for middle school students' academic engagement and the subsequent influence this support has on academic self-concept (Garcia-Reid, Reid, and Peterson 2005). Likewise, other research with this present study's sample of North American and British students has revealed that the most significant influence these schools have on student attitude toward school are their peers and teachers (Booth and Sheehan 2008). Nonetheless, the direct influence that self-esteem has on academic performance remains unclear, with further longitudinal research needed to assist with understanding the relationship.

Self-esteem and gender

Gender patterns have often been found within self-esteem studies. Studies during the 1970s and 1980s in the United States regularly found girls' self-concept more vulnerable during early adolescence, especially in urban areas (Simmons, Rosenberg, and Rosenberg 1973; Blyth, Simmons, and Carlton-Ford 1983). Confirming this trend, a meta-analysis investigating self-esteem research in Western industrialized countries has found that adolescent girls' self-esteem is generally moderately lower than boys' self-esteem and that this difference is greatest around 16 years of age (Kling et al. 1999). Quatman and Watson (2001) have also found boys to demonstrate a slightly higher level of self-esteem than girls, but unrelated to grade level during adolescents; whereas Baldwin and Hoffmann (2002) found gender effects to be strongest for younger rather than older adolescents.

Some research in England suggests gender patterns, with males demonstrating a closer relationship between self-esteem and academic performance except for competence in the English language (Ireson, Hallam, and Plewis 2001). Furthermore, a study of urban adolescents in Belgium found that boys' self-esteem was highly dependent on their sense of mastery, while girls' was more dependent on relationships, especially parental support (Brutsaert 1990). Yet, research that has been most successful in finding gender differences between sense of self and academic performance demonstrates a relationship between self-efficacy and academic outcomes (Wigfield et al. 1991; Schunk and Lilly 1984). However, because Western researchers continue to find relationships between achievement and self-esteem and between gender and self-esteem, conceptual leaps often assume gender to

moderate self-esteem and achievement. Given this inconclusive evidence, one of this study's objectives is to investigate if gender moderates the relationship between self-esteem and academic achievement and, if so, whether this influence is evident across two Western cultures.

Methods

Research design

A multi-strand concurrent mixed method design (Tashakkori and Teddlie 2003) was used to compare and contrast the relationship between self-esteem and academic achievement between the adolescents in Cleveland (United States) and Manchester (England) (see Figure 1). Two waves of data collection took place for a longitudinal analysis, with the early fall 2004 as the first wave and late spring 2005 as the second wave of collection.

Site and participants

Two large urban municipalities were chosen for this study that, while nationally different, also included major similar socio-historic characteristics. This was done in order to control for other variables in addition to broad nationally related cultural differences that may influence findings. The Cleveland Municipal School District (CMSD) and the Greater Manchester schools were chosen for their similarities as older, industrialized, urban, multicultural municipalities with school systems having financial difficulties and inclusive largely of working-class families. A description of the schools from both cities will serve as a means to contextualize the lives of the students in the study.

In Cleveland, four schools were chosen in different geographic locations of the city (east, west and south of the city) so as to acquire a representative sample of the large district. In order to control for Socioeconomic Status (SES), all schools chosen for the study reported 100% of students qualifying for free and reduced lunch. While some schools enrolled higher numbers of minority students than others (primarily African-American and Hispanic), all schools represented the ethnic diversity illustrative of this urban district with students from various ethnic backgrounds. Two of the Cleveland schools are large middle schools, each built in the mid-1970s and each enrolling approximately 840 students across three grade levels. These two brick stockade-looking buildings are very similar in architectural style inside and out, with a chain-linked fence surrounding each school with little green space. The buildings inside are dark as a result of the dark brick walls, low ceilings and few windows. Contributing to the atmosphere are security guards who pace the hallways and beeping walky-talkies for emergencies on all teachers.

The third and fourth Cleveland schools are multi-age buildings, housing middle school students in one section of the building and elementary in the other. While these buildings are significantly older (built in 1923 and 1915), they remain more inviting and nurturing in atmosphere. While both buildings require maintenance work, the large windows and brightly painted walls permit plenty of light to shine into the classrooms and hallways. While these buildings also require mechanized means of entry (as with the first two Cleveland schools), the hallways are absent of guards and constantly beeping walky-talkies.

The three schools utilized in Manchester were similar to the Cleveland schools in that they were all government run, co-educational institutions, with student populations representing the multi-ethnic, lower SES, immigrant-based, urban composition of Manchester. The multi-ethnic composition in Manchester includes a large number of students who, while primarily born in England, can trace their family roots to India, Pakistan, Africa or the Middle-East. While the atmosphere of these three urban buildings may share some similar characteristics

as the Cleveland schools, each one has a unique environment with challenges and advantages for the students and staff.

The first of the three Manchester schools has just over 600 students from various ethnic, religious and cultural backgrounds in the lower four form (approximately 140 students per grade level). The students in this school on the near south side of Manchester represent a cross-section of the Manchester immigrant population (both recent and settled for generations). This diverse student body, which is primarily of lower- to middle-lower socioeconomic status, is organized into a house system, where the students are divided into four houses as a means of organization, tutoring and advising. The physical school climate changed dramatically for these students over the course of the year as they moved from an older school to a new, much larger building with modern facilities. While the older school building did require a little updating and more space (built circa 1960), the older facility had been clean, bright and inviting to visitors. Students and staff were polite and the waiting room for visitors was inviting, with a fish tank and toys available for young children waiting with parents.

The second Manchester school is the second largest of the study's British schools, with 900 students in its four forms and approximately 190 students per grade level. While it is ethnically less diverse than the other two Manchester schools, this school is located in one of the lowest socioeconomic status sections of Manchester, in a neighborhood of public housing where the faculty and administration complained of the rough neighborhood. However, to a foreign visitor, this neighborhood appeared neat, with green spaces and relatively well-kept houses (in comparison to low SES neighborhoods in most urban areas in the Unites States). The school is an unattractive brick building on the outside (circa 1960), yet like the older building of the smaller Manchester school, is bright, clean and orderly inside, with plenty of windows to let in light to shine on the student art work displayed in common areas. Even though the students of this school experienced challenges associated with very low SES, the school administration and faculty created extra programs for the students to facilitate educational success, including an extensive 'Transition Program' for new students entering the first form in the school.

Finally, the third of the Manchester schools has the highest level of socioeconomic status of the three; however, as part of the Manchester municipality, it also has a large percentage of students from lower to middle-lower socioeconomic levels. As the largest of the three Manchester schools, with approximately 1600 students or 320 students per grade level in the first four forms, the student population is also very diverse, with a combination of white British, and students of Indian, Pakistani, Arabic and Caribbean origin. The school's new building is divided into two sections, one for the lower four forms and the other for the upper sixth form. Even though the students have uniforms, as with the other students in other Manchester schools, these uniforms are less formal than the other schools where they required ties and blazers. While the school was orderly, clean and organized, the large number of students corralled in and out of the building each morning and afternoon created more of a feeling of anonymity than the other two Manchester schools.

Study sample

A total of 258 students (129 male, 129 female) from the four Cleveland and three Manchester schools constitute the sample of a broader study on which this investigation is based. The 103 students from the United States were in sixth grade (mean age = 11.5, SD = .62); whereas the 155 students from England were of this same age (M = 11.6, SD = .41), but their academic standing was grade 7. In both cases, the students were no longer considered in the younger elementary grades, having recently transitioned into middle level grades in Cleveland or secondary level in Manchester.

One limitation of the study results from the difficulties of conducting research in public schools where consent is difficult to obtain under the best of circumstances; however, in the case of Cleveland and Manchester where the urban districts are considered some of the poorest in each nation, the consent process provides the most challenging. As a result, only 24.6% of sixth grade students in the four Cleveland schools and 28% of the same age group in the three Manchester schools received consent for participation. Furthermore, as is the challenge in any longitudinal study, this sample size diminished over the course of the school year from a total of 258 at the beginning of the school year (fall 2004) to 172 students in the spring of 2005 as a result of student absenteeism, school drop-out, transfer or school-sponsored trips. As a result of these difficulties, the present study is based on the responses of 86 Cleveland students (34 males, 52 females) and 86 Manchester students (45 males, 41 females) who had complete data on constructs of interests for this investigation across the two data collection points. Even though this may result in limited generalizations from data analysis, the authentic contextual reality of the setting and participants should bring weight to the project's conclusions for further study.

Data sources

Investigations with students through surveys and interviews took place at the beginning and end of the 2004–2005 academic year in order to measure changes influenced by that year's attendance in that particular school. The entire sample of students completed the Rosenberg Self-Esteem Scale (Rosenberg 1989), a widely used 10-item measure. The four-point response format for individual items ranges from 1 (strongly disagree) to 4 (strongly agree). Items with a negative valence were reverse coded so that higher values reflect more positive self-appraisals. Scores across items were averaged. Reliability for the set of scales was determined through Cronbach alphas (Cleveland: fall   = .65, spring   = .70; Manchester: fall   = .69, spring   = .70).

A sub-sample of 45 students (21 Cleveland and 24 Manchester.) was interviewed utilizing the Simmons and Rosenberg Self-Image Scale as a framework for one-on-one interviews (Simmons, Rosenberg, and Rosenberg 1973). While attempts were made to interview a random sub-sample of students, class schedules often influenced who would be available for interviews. Interview responses provide the key qualitative information for analysis in this study. Qualitative analysis of transcripts was conducted independently by two researchers highlighting important patterns in conversation. Taking a post-positivist position in qualitative research, the researchers sought *credibility* to their research based on Lincoln and Guba's techniques and included: prolonged engagement in both municipalities being studied, and triangulation of data by utilizing different sources and methods (Merrick 1999),

The scores utilized as a measure of academic achievement included two separate standardized tests, one from Ohio and one from England. First, Ohio Proficiency Test Scores (OPT) were given to students in the Cleveland schools during sixth grade to assess their academic progress and includes an assessment of writing, reading, mathematics, science and citizenship. Key Stage 2 tests (Standard Assessment Tasks) were given to students in Manchester during their 11th year of age and include scores for English, math and science. While both tests serve the same purpose as a standard measure of academic achievement in their respective nations, the tests are not directly comparable. Thus, their use is as a measure of achievement to assess the degree of co-variation between academic performance and self-esteem for students within that respective national sample.

Data analysis

All analyses were conducted using Statistical Package for the Social Sciences (SPSS). Preliminary tests include *t*-tests to determine whether self-esteem scores differ by cultural

setting (i.e., country of student) as well as by gender. Correlations also were employed to examine the strength of relationships between self-esteem and academic achievement indicators. As a primary analytic strategy, ordinary least squares regression was utilized to examine the association between self-esteem and academic achievement while controlling for gender and to formally test whether gender moderates this relationship. For both samples, three sets of regression analyses were conducted: Model 1 (longitudinal relationships) – spring achievement scores regressed on fall self-esteem; Model 2 (concurrent relationships) – spring achievement scores regressed on spring self-esteem; and Model 3 (change model) – spring achievement scores regressed on change in self-esteem, computed by subtracting students' fall self-esteem scores from their spring values.

Results from quantitative analysis

Descriptive statistics for self-esteem measures and academic achievement scores as well as correlations among all measures are set out in Table 1 (Cleveland) and Table 2 (Manchester). Youths' self-esteem ratings, on average, were significantly higher for the students from the United States than for the British students across the school year (fall: Cleveland M = 3.08; Manchester M = 2.78 [t = 4.32, df = 170, p = .000]; spring: Cleveland M = 3.21; Manchester M = 2.89 [t = 4.89, df = 170, p = .000]). While results show some continuity over the school year (with fall self-esteem correlating moderately with spring self-esteem), the self-esteem ratings were slightly more consistent for British students (.54) than for North American students (.39).

Initial analysis of academic achievement scores revealed significant correlations between fall self-esteem and spring academic achievement scores across samples. Most of these associations were moderate in strength. For the Cleveland students, self-esteem correlated significantly with four of the five achievement indicators including reading (.28), math (.37), citizenship (.36) and science (.33) but not writing (.09). For Manchester students, self-esteem correlated significantly with all three indicators of achievement, which include English (.25) and math (.24) and science (.26). However, for spring, statistically significant concurrent associations between spring self-esteem and achievement scores were fewer in number for the Cleveland sample, as only math was significantly correlated with self-esteem (.28). For the Manchester sample, spring self-esteem remained a significant correlate of both English (.27) and math (.34) but not science (.21). As a whole, these tests indicate that: (1) Manchester students' self-esteem, although significantly lower than Cleveland students, is more consistent over the course of the year; (2) Manchester students' self-esteem is more consistently related to the same academic tests; and (3) as a commonality across samples, self-esteem shows a fairly robust relationship with math achievement.

Given the possibility of gender differences in self-esteem and academic achievement scores and potential differences between boys and girls in the degree to which self-esteem and academic achievement co-vary, we examined means and correlations separately for boys and girls. These analyses revealed three gender differences for academic achievement scores. For the Cleveland sample, boys scored higher on citizenship (boys' M = 213.70; girls' M = 202.54 [t = 2.00, df = 84, p = .05]) and science (boys' M = 210.03; girls' M = 193.58 [t = 2.67, df = 84, p = .009]). For the Manchester sample, English scores were significantly higher, on average, for girls (boys' M = 39.39; girls' M = 44.83 [t = −2.138, df = 84, p = .04]).

Conducting a gendered analysis of self-esteem also provides notable results. First, the mean scores on self-esteem measures did not differ significantly by gender for the Cleveland sample. However, results show a sizable discrepancy between Cleveland and Manchester girls in their consistency of self-esteem across the school year. (See Tables 3 and 4 for gender breakdown of correlations in the Cleveland and Manchester samples respectively.)

Although statistically significant for both groups of girls, the correlation between fall and spring self-esteem was .29 for the Cleveland sample and .63 for the Manchester sample. Furthermore, these data also indicate that correlations between self-esteem and math are driven primarily by female students in both national contexts. In spring, it is the girls who have the higher correlations when compared to boys in their respective national samples, with Cleveland girls revealing a consistent (fall to spring) relationship between math and self-esteem. A similar pattern emerged for science in the Manchester female sample.

In order to examine more closely the role of gender in moderating associations between self-esteem and academic achievement, a series of regression analyses was conducted. In separate models, each of the spring academic achievement indicators (five for Cleveland sample, three for Manchester.) was regressed on gender, fall self-esteem and the interaction term between self-esteem and gender. Following procedures outlined by Aiken and West (1991), interaction terms were created by centering individual self-esteem scores using the mean value (i.e., subtracting each score by the mean) and then multiplying the centered scores by assigned values for gender (i.e., 0 for males, 1 for females). Centered values reduce multicollinearity when predictor variables are correlated with each other. Analyses were repeated for spring self-esteem. Results from regression analyses are located in Tables 5 to 7 (Cleveland) and Tables 8 to 10 (Manchester).

Results from a model regressing spring academic achievement scores on fall self-esteem are set out in Table 5. Controlling for gender, findings from this set of analyses mirror those from the correlational analyses. For the Cleveland sample, a main effect of gender was detected for science, reflecting higher scores for male students. A main effect for fall self-esteem emerged for students' scores in reading (=.45), math (= .41), citizenship (= .39), and science (= .41). Gender did not moderate these associations; however, a marginally significant disordinal interaction was found for writing scores in the spring. As shown in Figure 2, a positive association between self-esteem and writing proficiency was found for boys, amounting to an average increase of .70 on writing scores for every one-point increase in self-esteem. When academic achievement indicators were regressed on spring self-esteem (Table 6), no main effects for self-esteem were found; however, the interaction between self-esteem and gender was significant for writing ($= -.37$, $p = .05$). The plotted interaction as depicted in Figure 3 reflects an intensification of the pattern identified for fall self-esteem. For boys, a one-point increase in self-esteem was associated with an increase of .77 on writing scores; however, for girls a one-point increase in self-esteem was associated with a decrease of .40 on the OPT writing examination. Table 7 summarizes results from the change model. An inverse relationship between self-esteem and science was detected ($= -.35$), suggesting that increases in self-esteem over time were related to lower science scores. Gender did not interact with change in self-esteem to predict academic performance in this set of analyses.

Like Cleveland, findings from the regression analysis for the Manchester sample are consistent with correlational analyses after controlling for gender. As reflected in Table 8, a main effect for gender (= .24) was detected for English, reflecting higher scores for girls. A main effect of fall self-esteem was found for English (= .31) and math (= .33); however, the overall model, as indicated by the F value, was not significant for math. Gender did not moderate these associations. Gender remained a significant predictor of English in a model regressing academic indicators on spring self-esteem (= .23) (see Table 9). Consistent with fall data, spring self-esteem was a significant predictor of English (= . 27) and math (= .37) but not science ($= -.11$), and gender did not moderate these associations. Finally, change in self-esteem across the school year was not associated with academic achievement (see Table 10).

Qualitative analysis

An analysis of student interviews was conducted to investigate whether students' conversations about themselves reflected the reality of their academic performance. Continued evidence was found revealing the Cleveland students to be less likely than Manchester students to exhibit accurate opinions about their academic selves by the *end* of the school year. This conclusion emerged when analyzing student answers to one particular question in the interview: '*If I met your teachers, what would they say about you?*' A content analysis of the answers to this question revealed similar patterns between the two national groups in the direction and substance of responses in the fall, but exhibiting some substantial differences by the spring interview. Student responses to this question varied from academic-oriented comments ('*I get good grades; they'd say I'm intelligent*') to social-behavioral comments ('*They'd say I'm a little noisy and wild*') (see Table 11 for comment examples).

Because the focus of this paper is to examine the relationship between academic achievement and self-esteem, an analysis of the nature and amount of academic comments made about themselves by the students was conducted. In the fall, the Cleveland and Manchester students volunteered *academic* responses at similar rates, with 80% of the 21 Cleveland students and 86% of the 24 Manchester students providing academic comments (see Table 11). Furthermore, both groups' assessments of their *academic* selves were notably positive with 100% of the Cleveland and 83% of the Manchester students discussing their academic selves in a positive light. Yet, by the end of the school year, the Cleveland and Manchester cohorts differed in the amount that they discussed their academic selves. The Cleveland students increased their academic comments from a ratio of .80 academic comments per student in the fall to 1.52 comments per student in the spring. However, the Manchester students actually declined from a rate of .86 to .66 academic comments per student from fall to spring. Furthermore, while the Manchester students had a similar ratio of positive to negative comments at both collection points, the Cleveland group's academic self-appraisals became more optimistic over time (e.g., '*he does his work on time and gets good grades in class*').

This analysis of the type and quantity of volunteered academic comments about themselves initiated a continued investigation of these patterns. However, in order to investigate whether students of different achievement levels talk about themselves differently, this continued content analysis was limited to the students in both countries who performed the *best* and the *worst* on their standardized tests. These results were discovered by grouping the interviewed students into *best* and *worst* categories if the student fell into the top 10% or bottom 10% of any scholastic test score. Because not all students were interviewed, the number of *best* and *worst* students were limited and varied between national samples.

The following analysis will reveal that in this sample the Cleveland *best* and *worst* students spoke principally similarly about their academic selves; however the *best* and *worst* Manchester students volunteered academic comments in recognizably different patterns. Within the Cleveland sample (which included seven students in each of the *best* and *worst* categories), a content analysis of the students' reflective appraisals of their parents and teachers found similar rates of academic content in their comments, with 1.4 academic comments per person for the *best* group and 1.8 average comments for the *worst* group when combining their fall and spring comments. As examples, one girl from the Unites States who was in the *best* group in the fall said that her parents would say that she is '*good at poetry and drawing*', and in the spring she said that her parents would say that she is '*very smart because she gets a lot of As*'. An American male in the fall in the *best* group said that his teachers would say that he '*turns his homework in on time and follows directions*', and in the spring they would say that '*he gets good grades and keeps up with most things*'.

Likewise, the sampled North American students who performed the *worst* on standardized scores continued to be positive about their academic selves. For instance, in the fall one female said that her teacher would say that she '*turns in her homework and pays attention*', and in the spring they would say '*she is hard working*'. Similarly, a male in the *worst* group indicated that in the fall that his teachers would say that he '*does his homework*', and in the spring they would say that he '*is a good worker in all subjects*'. Therefore, students from the United States with extreme differences in academic performance volunteered similar reflections of their academic selves.

In contrast, the British *best* and *worst* groups included reflective appraisals that more accurately characterized their actual performance. The five British students who were in the top 10% of test scores spoke consistently academically and most positively about themselves, of all of the groups, including the Cleveland sample. Their averaged 2.2 academic comments per student were 100% positive. Exemplifying their self appraisals was one male student who said in the fall that his teachers would say '*his education is quite good*', and in the spring his teachers would say his '*behavior is pretty good and his test results are good*'. Likewise, a female in this same group guessed her teachers would say that she is '*a good worker, clever, answers questions, and participates in class*', and in the spring, they would continue to say that she '*does good work*'.

Contrasting to the *best* Manchester group was the *worst* Manchester category. Although small (four students), this group never said a word in either the fall or spring about their academic selves. Even though their self-analyses were not completely negative, they focused entirely on their social behaviors. For instance, one female noted that her '*mum would say that she's always fighting with her brother… but she would also say that she is not cheeky*'. This same student believed her teachers would say she's '*a bit chatty, especially after lessons*'. As a result, complementing the statistical results, this qualitative analysis reveals British students who may have a more accurate interpretation of their academic selves than the participants from the United States.

Math and self-esteem

When separating the students into the *best* and *worst* groups for each of their standardized test subject, the participants with the greatest disparity in their comments were the students in the *best* and *worst math* groups. Both the Cleveland and Manchester students with *best math scores* included self-analyses in both the fall and spring that were generally positive and also balanced in both academic and behavioral comments. For instance, one North American female said that her mom would say that she is '*nice but sometimes I have an attitude problem … But I am the active one in the family and I put a smile on peoples' faces. I also like reading a lot*'. In the spring, this same girl thought that her mom would say '*she's smart, competitive, and active*'. Furthermore, a *best math* Cleveland male thought his teacher would say that he '*turns his work in on time and follows directions and I'm also nice*', and in the spring he said that he '*gets good grades and keeps up with most things. I'm helpful and the teachers like me to do things for them*'. Similarly, a female in Manchester was balanced in her fall self-analysis when she thought that her teachers would say that she '*is a good worker, clever, and answers questions, and participates in class*', and in the spring, even though she is '*noisy*', she also '*does good work*'.

On the other hand, the small representative group of *worst math scores* avoids discussing their academic selves altogether in both national groups. In the spring, the Cleveland students' academic comments have disappeared completely, limiting their self-appraisals to their behaviors, such as the Cleveland female who said that her mom would say that '*she's sometimes nice but sometimes moody. She's athletic, and respectful … but also a little noisy and funny*'. Finally, one girl from Cleveland in the *worst math* group had included some

academic comments in the fall by stating that her teachers would say she '*learns, likes to go to school and study, and also helps in the classroom*'. However, by the spring, her self-appraisals were absent of academic content, and only focused on her behaviors which were both good (*nice*) but also problematic (*noisy and wild*). As a result, this content analysis of the *best* and *worst math* students provides additional evidence that there does appear to be some relationship between how well a student performs in math and their self-esteem.

Discussion

The results of this study contribute to our understanding of the relationship between self-esteem and academic achievement through the unique utilization of a mixed-methodological and cross-cultural investigation. With the use of this methodology, we have been able to test quantitatively for relationships between self-esteem, gender and academic achievement, in addition to qualitatively exploring how and why these relationships may take shape. An analysis of the combined quantitative and qualitative results suggests several conclusions to be discussed. First, the young adolescents from both the United States and England begin school at age 11 with similar strengths in the relationship between self-esteem and academic achievement; however, this relationship largely disappears by the end of that academic year for North American students. Second, patterns were consistently found between level of self-esteem and math achievement in both of these samples of students. Finally, cultural expectations regarding gender-appropriate skills may influence self-esteem, especially for students from the United States.

The most notable country comparison results pertain to the contrast between fall and spring self-esteem and achievement analyses. Both the Cleveland and Manchester students enter school at 11 years of age with similar patterns pertaining to their self-esteem and academic achievement. Both groups find self-esteem to correlate with the majority of their standardized tests. Furthermore, in the fall, qualitative analysis also found both groups to talk similarly about their academic selves as they both volunteered academic comments as part of their self-appraisals at similar rates with a similar positive tone. However, by the end of the academic year, the two groups differ both quantitatively and qualitatively in this self-esteem and achievement relationship. While Manchester students remain steady with similar trends connecting self-esteem and academic achievement, the quantitative relationship between the Cleveland students' self-esteem and academic achievement declines steadily, leaving only math with any relationship to self-esteem. Furthermore, as a result of the addition of qualitative inquiry, student interviews suggest that this lack of a relationship in the spring for Cleveland students may be the result of an unrealistic and overly optimistic self-appraisal of academic skills. These North American students voluntarily talk more about their academic selves in the spring as compared to the fall and their commentary is by and large still positive.

These differences found between the student groups in the two countries demonstrate that cultural differences do not have to be as great as some literature have hypothesized with collectivist-leaning cultures interpreting self-esteem measures differently than individualistic-leaning cultures (Schmitt and Allik 2005). Perhaps youth do not have to be from significantly different cultures (east versus west) to be influenced by the socio-cultural environment in their self-appraisals. Furthermore, while Cleveland and Manchester are both urban, low socioeconomic and multicultural cities, the different school climates, creating particular school cultures, may also be contributing to the students' self-esteem. This suggests the need for additional cross-cultural studies that investigate the influence of school climate on adolescents.

While other researchers have found that self-appraisals by young adolescents are often overly confident and that they develop a more accurate depiction of themselves as they grow older (Schunk 1995), the results in this study suggest that this phenomenon may be more prevalent amongst students in the United States than elsewhere. The incongruence between self-esteem and achievement in the spring is limited to the Cleveland sample. This disconnect could be the result of students not performing as well as they thought they would on tests in sixth grade, yet not recognizing the seriousness of this lack of performance. Furthermore, scholastic feedback from educators may influence their self-esteem more than actual performance. As a result, the contextual influences on young adolescents' self-appraisals require further investigation.

The second conclusion pertains to the apparent significance of math scores and achievement. While the regression analysis does not reveal continued significance for math throughout the entire year, other tests in the study do find math to be consistently related to self-esteem, possibly more than other academic measures. Furthermore, the combined qualitative analysis of the *best* and *worst* math students reveals patterns that support a possible link between math scores and self-esteem. These results support previous research by Wigfield et al. (1991), who found in the large Michigan Adolescence Study that math and self-esteem correlate for students in junior high and that this effect was already measurable at the beginning of sixth grade.

The present study's methodology was not initially designed to narrow the academic investigation to math, and therefore the unanticipated results pertaining to math are notable. These math results are also relevant to the discussion of our third conclusion, which points to the influence of gender-targeted cultural expectations on academic success. In addition to math correlations that show females driving the significant relationship with self-esteem, regression analysis also found a positive interaction in the fall and spring between self-esteem and writing scores for Cleveland boys but not for girls. These two categories of results, math correlating with females' self-esteem and writing with that of males, suggest a possible influence from cultural expectations on student self-esteem. For instance, the strong relationship between Cleveland girls and math may suggest that when cultural importance is placed on an academic skill, yet a particular segment of the population is not expected to perform strongly, when they do it may be the result of or cause of heightened self-esteem. Other researchers have found evidence in the United States for gender-stereotyped behavior becoming more influential as students progress into early adolescence (Eccles 1987; Hill and Lynch 1983) and others have found that some gender patterns in middle school writing achievement 'may be a function of gender orientation rather than of gender' (Pajares and Valiante 2001, 376). This gender-role intensification may then influence skill performance expectations, leading boys to have high expectations for success at math tasks but girls to have higher expectations for English language ability than boys (Wigfield et al. 1991)). This is similar to research investigating the impact of self-efficacy on task performance, often finding similar gender patterns with math achievement expectations (Schunk and Pajares 2002).

As a result, the math and writing patterns found in this study may provide additional evidence that middle school-aged students in the United States and, to some degree, England continue to persist with gender-oriented academic skill expectations. When societal expectations do not match with their actual performance this may correlate with self-esteem. In this study's results, even though regression analysis may suggest that level of fall self-esteem influences later writing performance for males as measured by a spring standardized test, other confounding variables in this natural setting may influence males' math performance and/or self-esteem throughout the school year. For instance young students have been found to express inaccurate self-appraisals pertaining to abilities (Schunk and

Pajares 2002); however, teacher feedback has been found to influence students' self-efficacy (Schunk and Lilly 1984). With additional teacher feedback, students may develop a greater sense of their own ability and feel better about their success. In this case, student actual success or failure during the school year could influence their own self-efficacy and subsequent performance on standardized tests which then continue to influence self-esteem.

This mixed-methodological investigation with adolescent students within natural settings has provided an opportunity to study the relationship between self-esteem and academic achievement with notable depth. Nonetheless, this study also presents some challenges associated with longitudinal research as the student sample decreased over the course of the year and confounding factors out of the study's control could have influenced the students. As a result of the undoubted presence of uncontrollable variables over the course of a year, the most reliable conclusions after merging the quantitative and qualitative results may be limited to non-directional correlational analysis. The results in this study suggest that the strength of relationship between self-esteem and academic achievement is partially dependent on societal context, is more likely to be moderated by gender when gender-orientation is strong for particular domains, and that for students from the United States this relationship appears to be influenced by domain specificity.

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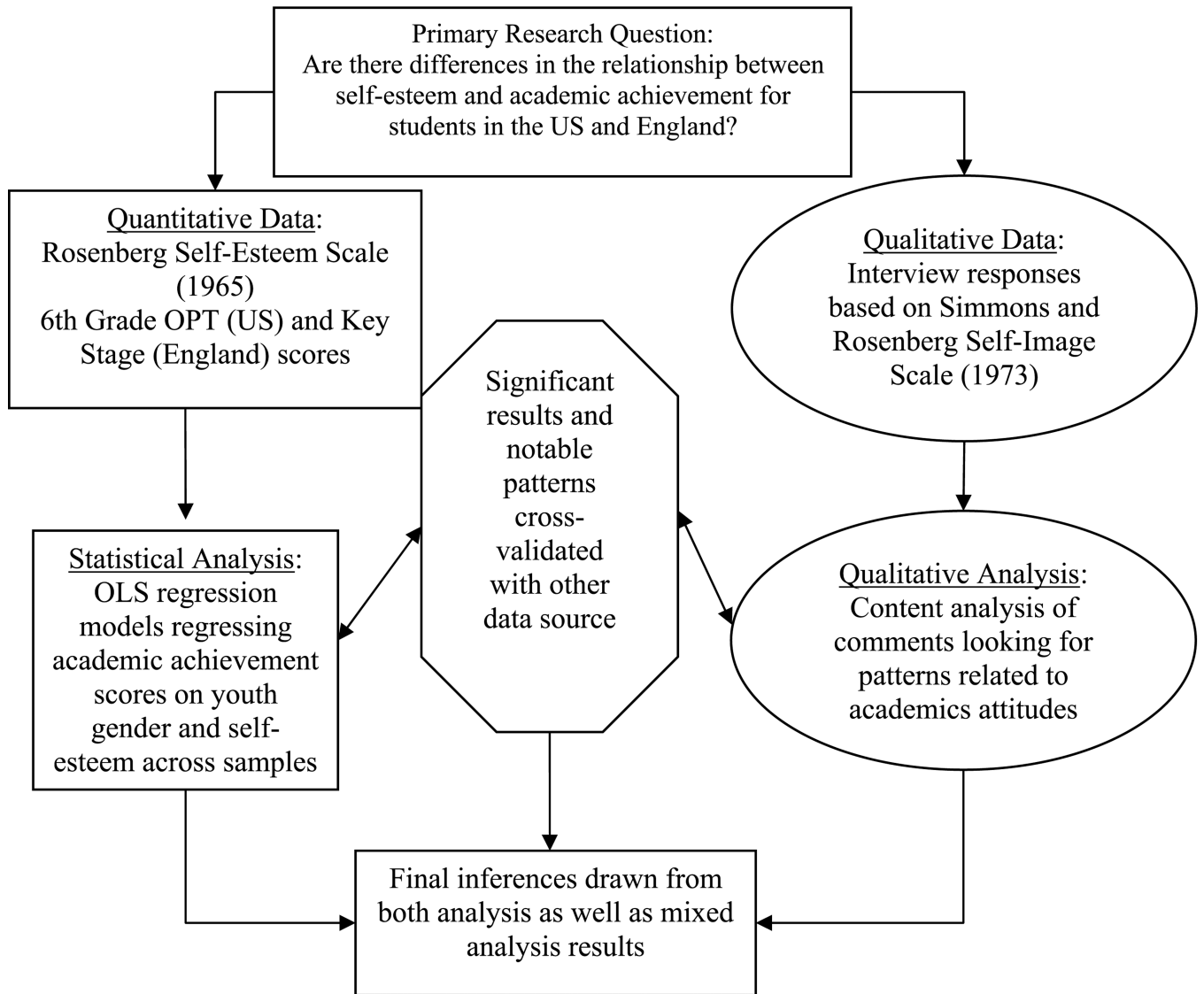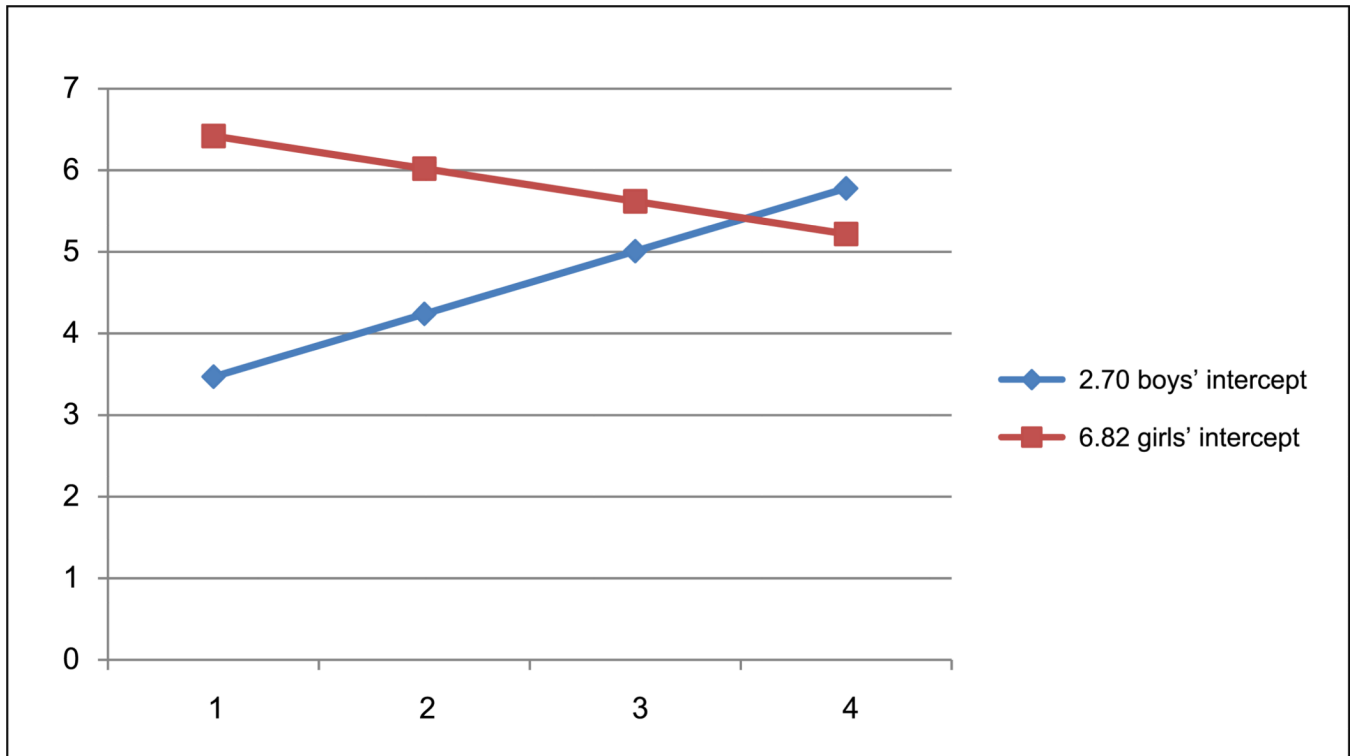
Figure 1.
Multistrand concurrent mixed method design.
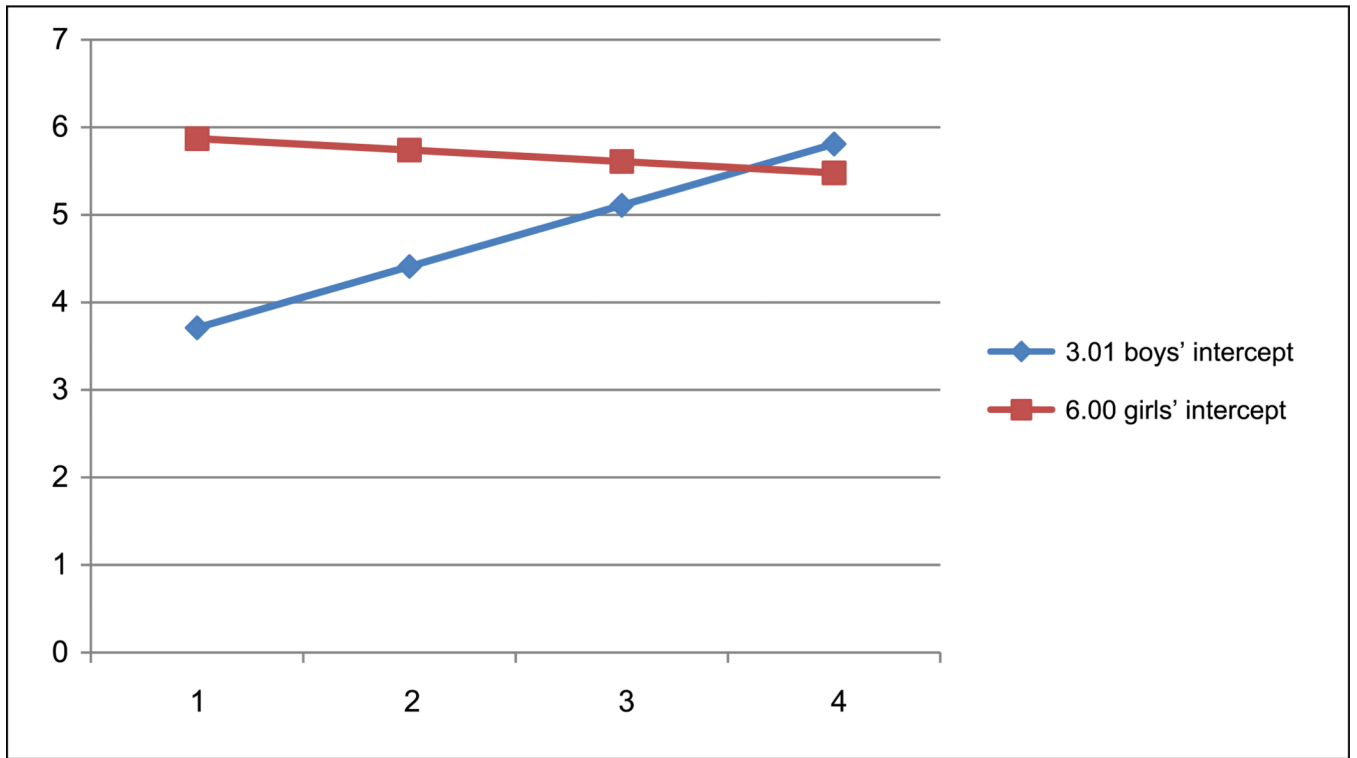
Figure 2.
Ohio Proficiency Writing Scores Regressed on Fall Self-Esteem by Youth Gender.

Figure 3.
Ohio Proficiency Writing Scores Regressed on Spring Self-Esteem by Youth Gender.

Table 1

Correlations between self-esteem and academic achievement scores for Cleveland sample.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Fall self-esteem							
(2) Spring self-esteem	.39 ***	.05					
(3) OPT writing score	.09						
(4) OPT reading score	.28 **	.13	.48 ***				
(5) OPT math score	.37 ***	.28 **	.37 **	.73 ***			
(6) OPT citizenship score	.36 ***	.10	.45 ***	.77 ***	.64 ***		
(7) OPT science score	.33 **	.00	.45 ***	.68 ***	.53 ***	.85 ***	
Mean	3.08	3.21	5.36	238.0	217.4	207.0	200.1
SD	.43	.42	1.05	30.7	31.3	25.8	29.0

Note:

*
p < .05;

**
p < .01;

***
p < .001.

Table 2

Correlations between self-esteem and academic achievement scores for Manchester sample.

Variable	(1)	(2)	(3)	(4)	(5)
(1) Fall self-esteem					
(2) Spring self-esteem	.54**				
(3) English score	.25*	.27*			
(4) Math score	.24*	.34**	.68***		
(5) Science score	.26*	.21	.63***	.67***	
M	2.78	2.89	41.93	53.64	45.00
SD	.49	.43	12.09	18.50	10.99

Note:

*
$p < .05$;

**
$p < .01$;

***
$p < .001$.

Table 3

Cleveland self-esteem correlations with proficiency test scores.

	Males (*n* = 33)		Females (*n* = 52)	
	Fall	**Spring**	**Fall**	**Spring**
Self-esteem		.57 ***		.29 *
Writing	.23	.27	.00	−.18
Reading	.37 *	.14	.22	.12
Math	.39 *	.20	.36 **	.35 **
Citizenship	.35 *	.22	.38 **	.07
Science	.44 **	.16	.30 *	−.02

Note:

*
p < .05;

**
p < .01;

***
p < .001.

Table 4

Manchester self-esteem correlations with proficiency test scores.

	Males (*n* = 48)		Females (*n* = 36)	
	Fall	Spring	Fall	Spring
Self-esteem		.45[**]		.63[***]
English	.30[*]	.27	.23	.30
Math	.30[*]	.34[*]	.17	.35[*]
Science	.20	.11	.31[*]	.32[*]

Note:

[*]
p < .05;

[**]
p < .01;

[***]
p < .001.

Table 5

Cleveland academic achievement scores regressed on gender and fall self-esteem

Independent variables	Writing	Reading	Math	Citizenship	Science
Gender	.19	−.02	−.06	−.18	−.24 [*]
Self-esteem	.26	.45 [**]	.41 [**]	.39 [*]	.41 [**]
Self-esteem × gender	−.22	−.19	−.05	−.03	−.09
R^2	.03	.06	.11	.13	.14
F	1.87	2.83 [*]	4.39 [**]	5.25 [**]	5.67 [***]

Note:

[*]
$p < .05$;

[**]
$p < .01$;

[***]
$p < .001$.

Table 6

Cleveland academic achievement scores regressed on gender and spring self-esteem.

Independent variables	Writing	Reading	Math	Citizenship	Science
Gender	.18	−.03	−.09	−.20	−.24[*]
Self-esteem	.31	.17	.21	.24	.15
Self-esteem × gender	−.37[*]	−.05	.11	−.14	−.13
R^2	.06	.02	.06	.02	.03
F	2.66[*]	.48	2.66[*]	1.46	1.75

Note:

[*]
$p < .05$;

[**]
$p < .01$.

Table 7

Cleveland academic achievement scores regressed on gender and change in self-esteem.

Independent variables	Writing	Reading	Math	Citizenship	Science
Gender	.21	.03	−.03	−.14	−.19
Self-esteem change	.05	−.36	−.27	−.20	−.35[**]
Self-esteem × gender	−.14	.24	.22	−.03	.08
R^2	.02	.00	.00	.04	.04
F	1.46	1.03	.61	2.82	4.09[**]

Note:

[*] $p < .05$;

[**] $p < .01$;

[***] $p < .001$.

Table 8

Manchester academic achievement scores regressed on gender and fall self-esteem.

Independent variables	English	Math	Science
Gender	.24[*]	.01	−.08
Self-esteem	.31[*]	.33[*]	.22
Self-esteem × gender	−.08	−.13	.05
R^2	.09	.03	.04
F	3.77[**]	1.89	2.15

Note:

[*] $p < .05$;

[**] $p < .01$.

Table 9

Manchester academic achievement scores regressed on gender and spring self-esteem.

Independent variables	English	Math	Science
Gender	.23[*]	−.01	−.08
Self-esteem	.27[*]	.37[**]	.11
Self-esteem × gender	.00	−.02	.14
R^2	.09	.08	.03
F	3.84[**]	3.49[*]	1.70

Note:

[*] $p < .05$;

[**] $p < .01$.

Table 10

Manchester academic achievement scores regressed on gender and change in self-esteem.

Independent variables	English	Math	Science
Gender	.23[*]	−.02	−.08
Self-esteem change	−.05	.00	−.10
Self-esteem × gender	.04	.10	.03
R^2	.02	.01	.02
F	1.50	.26	.40

Note:

[*] $p < .05$.

Table 11

Examples of students' reflective appraisals of teachers by sample and gender over the course of the year (same student from fall to spring).

CELMAN male/ female student #	Fall comments: My teachers would say that …	Spring comments: My teachers would say that …
CLE M 1	I turn in my work on time and follow directions. I'm also nice to classmates	He gets good grades and he keeps up with most things.
CLE M 2	He gets his work done on time and answers right most of the time. And he raises his hand after questions.	He does his work on time and gets good grades in class. He's improving. I had a B in math but now I'm averaging a low A.
CLE F 1	She's a hard working student. I do more for my work, especially math.	She's smart and a good leader. But not a lot of teachers I have now know me really well.
CLE F 2	They'd say I am a good helper. Cooperative.	Miss R would say I'm pretty good at most things. My math teacher would say I'm good. Mr Z would say I'm wonderful. All have a good opinion of me.
MAN M 1	They'd say my education is quite good. And they'd talk about the things I like to do at school.	They would tell you about my good qualities but I can also be a bit too chatty. My behavior is pretty good and my test results are good.
MAN M 2	They would say I'm hard working. I like to talk in class. Yesterday we had a story about New Zealand and I guessed the story right away.	They'd say I take hours to do my homework and they'd say I do it well. He does very well in school.
MAN F 1	All my teachers would say some days I'm talkative, sometimes I don't work like my brother, sometimes I'll do good work and sometimes I'm lazy.	She can work when she wants to but will chat sometimes. I like to lean against the wall. Sometimes I just do things without thinking about it. My mind wanders.
MAN F 2	They'd say I'm sometimes naughty, but that I work hard. I'm really good at maths. The maths teacher knows me well enough to comment.	They would tell you about both bad and good behaviors. Some teachers think I'm so clever, but others don't.