Published in final edited form as:

Youth Soc. 2014 November 1; 46(6): 735–755. doi:10.1177/0044118X12451276.

Adolescents' Stage-Environment Fit in Middle and High School: The Relationship Between Students' Perceptions of Their Schools and Themselves

Margaret Zoller Booth¹ and Jean M. Gerard¹

¹Bowling Green State University, Bowling Green, OH, USA

Abstract

This mixed-methods longitudinal project investigates the association between student perceptions of their schools and themselves. Findings from the first two waves of data analysis with 894 middle and high school students in a midsized Great Lakes city reveal similarities and differences between the grade levels (7th–10th) and their perceptions of their schools. Although 7th-grade students enter middle school with the most positive feelings about their schools, they lose this feeling of euphoria by the end of their academic year. In contrast, the 10th-grade females are the most positive of all students, recognizing school characteristics which assist with their self-efficacy. Results from quantitative analyses indicate that student attitudes toward school and a sense of school connectedness are linked to both self-esteem and academic self-efficacy.

Keywords

education; identity; longitudinal design; qualitative methods; quantitative methods

As municipalities across geographic regions in the United States attempt to increase graduation rates and improve their school “report cards,” research and intervention strategies have often limited their scope to instructional strategies and teacher behavior. Yet there is growing evidence that the educational contexts in which youth are expected to learn often lack a positive *goodness of fit* for adolescents as a result of ineffective school climates that do not foster positive social processes (Tseng & Seidman, 2007, p. 228). These investigations are particularly relevant to adolescents in diverse middle and high schools who, while experiencing their own developmental transitions, are highly sensitive to the effectiveness of the *stage-environment fit* of their schools (Eccles et al., 1993). As a result, this article originates from the first year of research in a larger longitudinal project investigating adolescents' perceptions of their school climate, evaluations of themselves in relation context, and academic achievement as they transition through middle and high school in Lakeport,¹ a multicultural city in the Great Lakes region. The purpose of this study

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Corresponding Author: Margaret Zoller Booth, Bowling Green State University, 550 Education Building, Bowling, Green, OH 43402, USA, boothmz@bgsu.edu.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

is to investigate the apparent ecological characteristics of the school climate that influence adolescents within their school, including the quality of relationships within the school environment and the association between student perceptions of their schools and themselves.

Conceptual Framework

Theoretical frameworks supporting the necessity for studying learning environments and their relation to human development are evident in such perspectives as Bronfenbrenner's (1979) ecological theory of human development which posits the need for a more thorough understanding of the "coordination between social systems at the microlevel of immediate settings (Bronfenbrenner & Evans, 2000, p. 120)." Other contemporary theorists like Harter (1999) contend that to understand the development of the adolescent self-image, we need to comprehend the significant relationships that youth have within their ecological contexts and understand how adolescents interpret those relationships, which might have bearing on their self-appraisals.

Adolescents and school climate

In addition to theory, empirical research increasingly supports the necessity to understand and develop effective learning environments that are sensitive to the needs of the participants. Researchers investigating school climate have defined climate variously, including "the quality and character of school life," (Cohen, McCabe, Michelli, & Pickeral, 2009, p. 182) the "shared perceptions" of the academic environment (Gregory, Henry, & Schoeny, 2007, p. 251) or the "personality" or "health" of a school (Hoy & Hannum, 1997, p. 292). The majority of research has found that students' perception of their relationships with others at school to be the most significant aspect of school climate. This includes overall satisfaction with other students in the building (Loukas & Robinson, 2004), in addition to the significance of teacher relationships (Goodenow, 1993). Past research has found that when students move on to secondary school, they often find that teachers in these schools are interpreted as being less friendly, less supportive, and less caring, but more critical than teachers in earlier grades (Reddy, Rhodes, & Mulhall, 2003).

Most problematic for middle school students has been a *lack of fit* between adolescents' needs and their environments (Eccles & Midgley, 1990). In particular, school climates that include greater teacher control and a decrease in the quality of teacher-student relationships can contribute to a decrease in academic motivation, a more negative self-image, and an increase in behavioral problems during the middle school years (Eccles, Lord, & Midgley, 1991; Roeser & Eccles, 1998). As a result of this *lack of fit*, research has also found that the transition into climates that do not match the developmental level of the students poses particular problems, with multiple transitions being especially difficult (Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). Undesirable effects of transitioning have been shown to include declines in academic achievement (Alspaugh, 1998; Gronna, 1999), lower self-esteem (Richardson, 2000), and an increase in school related stress (Rudolph, Lambert, Clark, & Kurlakowsky, 2001). Problems appear to be most salient for girls who

¹To maintain confidentiality of participants, Lakeport is a pseudonym for the city of the research site.

simultaneously experience more developmental change than boys at this time (Blyth, Simmons, & Carlton-Ford, 1983). Finally, while many climate studies have focused on the immediate impact of school climate, Way, Reddy, and Rhodes (2007) have found in a longitudinal study of 1,451 young adolescents that middle school students' perceptions of school climate declined from 6th through 8th grade and that these declines were also associated with student declines in psychological and behavioral adjustment.

School and the adolescent sense of self

Investigations of school climate often include an exploration of adolescents' sense of self in relation to the school context. The most common research on the adolescent self has focused on self-concept, or "appraisals of one's competencies and character" and self-esteem, or "a general sense of one's self-worth" (Eccles et al., 1989, p. 284). For instance, investigations of self-esteem often note the significant influence of school climate (Scott, 1999) in addition to teacher dispositions (Helm, 2007) on self-esteem. The symbolic interactionist perspective (Harter, 1999) suggests that individuals internalize the appraisals of significant others (i.e., family, peers, and teachers) in their formulation of self-concept and self-esteem, affecting their academic selves. Likewise, research associates high self-esteem with educational achievement (Marsh, Byrne, & Yeung, 1999) and the influence of ability levels on self-esteem (Humphrey, Charlton, & Newton, 2004). Research also demonstrates the impact of teachers on adolescent self-concept (Booth & Sheehan, 2008) and the reciprocal nature of self-esteem and academic achievement (Trautwein, Ludtke, Koller, & Baumert, 2006). Finally, gender analyses in the United States and other Western countries have consistently found girls' self-concept to be vulnerable during early adolescence, especially in urban areas (Blyth et al., 1983; Kling, Hyde, Showers, & Bruswell, 1999).

However, other research has found that success in an academic settings is influenced more by self-efficacy or the "beliefs that people hold about their capabilities and about the outcomes of their efforts" (Usher & Pajares, 2008) than self-esteem. Ross and Broh (2000), for example, 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. Personal control has been found to be related to self-efficacy which has also shown to require a certain level of positive self-evaluations (Pajares, 1996; Schunk, 1995). As a result, with a heightened sensitivity of the developing self during adolescence and previous demonstrations of the influence of school environments on youth, additional research investigating the relationship between school climate and the developing adolescent self are warranted.

Research setting

The city of Lakeport exemplifies national demographic trends within the Great Lakes region. To some extent a microcosm of the United States, its population of 16,734 (2010) includes a multiethnic distribution uncharacteristic of small cities in Ohio (U.S. Census, 2010). Lakeport's schools reflect diversity trends, where the 2008 average daily student enrollment of 3,694 students was 15% Hispanic, 8.1% African American, 12.5% multiracial, 63.9% White, 52% economically disadvantaged, 7.2% English language learners, and 1.3% migrant children (Ohio Department of Education, 2009).

During the first year of this study, Lakeport's 2008–2009 graduation rate of 84% was close to the Ohio average of 86.9%, but not meeting the state's 90% requirement. Lakeport's middle and high schools both earned a *Continuous Improvement* rating from the state with demographic disparities in achievement between ethnic and socioeconomic cohorts in the high school. As a whole, these achievement data are characteristic of general trends in the state of Ohio (ODE, 2008–2010), rationalizing this location as a representative Ohio adolescent population.

Present study

As part of a larger longitudinal, multiage research project, the purpose of this study is to investigate the relationships among adolescent students' attitudes about schooling, perceptions of school climate, connectedness to school, and their own self-reflections, including self-esteem and academic self-efficacy. While the setting is multiethnic and covers variations in socioeconomic status, it will not include an analysis by ethnic or socioeconomic characteristics as it limits its concerns to a developmental and gendered perspective. While this may present some limitation to the study, the demographic characteristics of the schools as representative of the larger state and national trends is essential to understanding possible ramifications for the population at large. As a result, the focus on Lakeport does offer a representative sample of regional trends for a gender and developmental analysis which will investigate: (a) gender and grade (7th–10th) differences in school variables and self-appraisals; (b) change over time in school variables and self-appraisals; and (c) the relationship between school variables and self-appraisals, both concurrently and longitudinally.

Method

This research project is based on the first year (two waves) of data collection of a four year longitudinal investigation being conducted in a small diverse city, in Ohio. The association between children's perceptions of their school environments and their self-appraisals is examined across 7th- and 10th-grade students in the same school system. The research design of this project is a multistrand concurrent mixed method design (Tashakkori & Teddlie, 2003) including multigroup, cross-sectional sampling.

Participants

During the fall (early October) and late spring (midMay) of the 2009–2010 academic year, all students in the middle school (7th and 8th grades) and all 9th- and 10th-grade students in the high school were invited to participate in the study. Consent letters were sent home with all students, using passive consent procedures which resulted in an 89% response rate for the middle school and 74% response rate for high school. Students completed surveys that included demographic questions, various measures related to the school context and culture, self-appraisals as well as other measures not used in the present study. Data collection took place during the students' first hour of classes, when surveys were distributed by researchers and research assistants. In fall 2009 (wave 1) survey data were collected from 518 middle and 526 high school students ($N = 1044$), and in the spring 2010 (wave 2), 482 middle and 509 high school students ($N = 991$). Data for this investigation are based on 894 students

(middle school $n = 442$; high school $n = 452$) with complete fall and spring data. The retention rate from fall to spring (85% for the middle and 86% for the high school) resulted primarily from student absence, school transfer, or incompleteness of surveys. See Table 1 for a demographic summary of the students who participated in the quantitative portion of the study.

A subsample of 53 students (25 females and 28 males) participated in one-on-one interviews to qualitatively investigate perceptions of school climate. The 53 students included 14 in seventh grade (7 M, 7 F); 14 in eighth grade (8 M, 6 F); 13 in ninth grade (7 M, 6 F); and 12 tenth-grade students (6 M, 6 F). The selection of students followed a semistratified-random process where the total list of students was broken down into subgroups based on ethnicity and gender that was representative of their proportion of students found in the school. A computer-generated random list for each subgroup was given to the school administrators who found students within each list who were available to be interviewed for the project.

Measures

Youth self-appraisals—Self-esteem was assessed using the *Rosenberg Self-Esteem Scale* (Rosenberg, 1989), a widely used 10-item measure. Sample items include “*I am a person of self worth*” and “*I am satisfied with self*.” Academic self-efficacy was assessed using a 7-item measure modified from other similar instruments measuring a general rather than skill specific self-efficacy, such as The General Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995).

Sample items include “*If I have enough time, I can do a good job on all my classwork*” and “*I am certain I can learn skills taught in school this year*.” The four-point response format for individual items on both the self-esteem and self-efficacy scales ranged from one (*strongly disagree*) to four (*strongly agree*). Scores across items were averaged. Higher values on these scales reflect more positive self-appraisals. Reliability for the set of scales was good (fall self-esteem $\alpha = .85$, spring self-esteem $\alpha = .88$, fall self-efficacy $\alpha = .82$, spring self-efficacy $\alpha = .84$).

School variables—Three measures were employed to assess student perceptions of the school environment. *School attitudes* were measured with the 20-item School Attitude Scale (Marjoribanks, 2002). Items were designed to tap children’s affective attitudes about enjoyment with schooling (e.g., “*Overall, I like school a lot*”) as well as concrete attitudes about the perceived importance of schooling (e.g., “*Going to school is a waste of time*”). The measure demonstrated good reliability (fall $\alpha = .83$; spring $\alpha = .82$). *School climate* was assessed with a modified version of Marjoribanks Perceived Social Capital Scale (PSCS; Marjoribanks, 2002). Sample items from the 28-item measure include “*Most of my teachers make this school a very exciting place in which to learn*” and “*There are many rules and regulations in this school*.” Reliability of the PSCS was good (fall $\alpha = .92$; spring $\alpha = .93$). *School connectedness* was measured using the mean value of five items that assessed the degree to which youth have friends, a supportive teacher, and trouble with peers (fall $\alpha = .62$; spring $\alpha = .70$). Sample items include “*I have many friends at this school*” and “*There is at least one teacher in this school whom I can talk to*.” Each of the three school context

scales were based on a four-point response format that ranged from one (*strongly disagree*) to four (*strongly agree*). Higher scores on these scales reflect more positive evaluations of the school context.

Qualitative procedures relied heavily on semistructured interviews conducted once midyear with the subsample of 53 students to explore topics pertaining to school climate, relationships with teachers and peers, academic expectations, and future (post-high school) opportunities. While the interviews in their entirety averaged 30 minutes in length, for this article, the focus of the interviews used for analysis concentrates on the beginning of the interviews where students were asked: “*How has this school year been so far? When you compare it to your former school (elementary/middle school), which school did you like better/feel more comfortable and why?*”

Data Analyses

Analytic strategies for quantitative data included: (a) multivariate analysis of variance (MANOVA) to compare groups of interest (gender and grade) on school variables and self-perceptions across fall and spring, (b) repeated-measures analyses to assess change in students’ perceptions of the school and their self-perceptions from fall to spring, and (c) hierarchical multiple regression analysis to determine whether school variables, assessed in fall, are associated with youth self-esteem and self-efficacy concurrently and longitudinally. Strategies employed for the qualitative analysis included both simultaneous analyses with the quantitative results in addition to post-hoc investigations. A constant comparative technique was used to find emerging themes (such as significance of peers/friends or relationships with teachers) in student interviews. Reliability of theme coding was conducted by using two graduate assistants to recode 20% of each others’ interview data to check for consistency.

Results

The first objective of this study is to determine whether students’ perceptions of school and their self-appraisals differ by gender and grade. To address this question, two MANOVAs were conducted—one for variables measured in fall and another for variables measured in spring. Findings for school variables and self-appraisals are discussed in separate sections to permit integration of relevant qualitative results in each section. Table 2 summarizes findings from MANOVA tests.

Gender and Grade Differences in Students’ Perceptions of School

Statistically significant, but weak, mean gender differences were detected across all three school variables (Overall means for gender separate from grade level are not shown in Table 2.). Girls scored significantly higher than did boys on attitude ($G M = 2.80$, $B M = 2.69$), climate ($G M = 2.81$, $B M = 2.74$), and connectedness ($G M = 3.39$, $B M = 3.33$) in the beginning of the school year. Gender differences were limited to school attitudes when spring assessments were considered ($G M = 2.74$, $B M = 2.62$). As noted in Table 2, 7th-grade students had the highest scores of all grades on school measures at the beginning of the academic year. Specifically, in fall, 7th-grade students’ attitude toward school was

significantly higher than 8th- and 9th-grade students and their perceptions of school climate were significantly higher than all other grades at this time. However, by the end of the academic year, 7th-grade students' scores on these variables were no longer the highest of the four grades. In contrast, 8th-grade students entered the academic year with lower perceptions of school than 7th-grade students and became even more negative about school by the end of the school year. High school students' perceptions of school for both grades remained relatively stable over the course of the year, with insignificant decreases from fall to spring. Moreover, in the spring, the 10th-grade students' school variable mean scores were consistently higher than any other class' mean scores.

Gender and Grade Differences in Self-Appraisals

Self-appraisals—Gender differences were evident in students' self-appraisals. When looking at the total sample without consideration of grade (data not shown in Table 2), boys scored significantly higher than girls on self-esteem across fall and spring ($B F M = 3.16$, $Sp M = 3.20$; $G F M = 2.97$, $Sp M = 3.03$). At the grade level, the 7th grade as a whole entered the academic year with the highest self-esteem score ($M = 3.14$) which did not change significantly during the year, while all other grades' self-esteem scores rose significantly from fall to spring (see Table 2). A slightly different pattern was evident for academic self-efficacy for the group as a whole. Boys' mean score was higher than girls' score in the fall ($B M = 3.24$, $G M = 3.17$) but slightly lower in spring ($B M = 3.17$, $G M = 3.20$).

Change in School Variables and Self-Appraisals Over Time

Repeated-measures analyses were conducted to assess change in school variables and self-appraisals across the school year using general linear modeling with gender and grade as between-subject groupings. Five models were conducted, one for each of the school variables and self-appraisals considered in the study. Change in each of the school variables across the school year was evident but the nature of these changes was contingent on grade level. F values for these interactions are as follows: school attitudes = 11.73, $p = .000$; school climate = 17.78, $p = .000$; connectedness = 4.19, $p = .006$. Patterns for school attitudes and climate were similar. The most positive school perceptions were evident among 7th graders but this group also showed the greatest decline from fall to spring. Likewise, 8th-grade students showed decline in school perceptions across the school year, however, in contrast to 7th graders, their perceptions of school were more negative in both fall and spring. Ninth and tenth graders showed little change between fall and spring, with 9th graders showing more negative scores at both time points than 10th graders. Significant declines in school connectedness were evident among all grade levels; however, 10th graders showed the least decline across the school year.

Turning to self-appraisals, significant change in self-esteem was evident ($F = 11.34$, $p = .001$). Gender, grade, nor their interaction, did not significantly influence these changes. Increases in self-esteem from fall to spring were evident among 8th, 9th, and 10th graders (7th graders scores remained stable across time). Significant gender differences were evident in change over time in academic self-efficacy ($F = 10.82$, $p = .001$) but this difference was qualified by a significant interaction with grade ($F = 2.80$, $p = .039$). For 7th, 8th, and 9th grade, boys' self-efficacy scores decreased and girls' self-efficacy scores increased over the

school year. However, in 10th grade, for the first time, boys gain in self-efficacy and girls remain stable.

Relationship Between Perceptions of School and Self-Appraisals

The potential link between students' perceptions of school and their self-appraisals was examined with quantitative data. As a preliminary step before conducting regression analyses, zero-order correlations among school variables and self-appraisals were examined (see Table 3). For middle school students, all three school context variables were related to self-esteem and self-efficacy across the school year. Correlations ranged from .33 to .43 for fall self-esteem and from .20 to .36 for spring self-esteem. Correlations ranged from .24 to .60 for fall self-efficacy and from .12 to .44 for spring self-efficacy. A similar pattern emerged for high school students. All three school variables were significantly related to self-esteem and self-efficacy across two semesters. Correlations for self-esteem ranged from .24 to .40 for fall and from .20 to .41 for spring. Correlations for self-efficacy ranged from .24 to .55 for fall and from .20 to .49 for spring. Across middle school and high school students, strongest associations between school variables and self-appraisals were observed for school attitude and climate. This analysis also points to some differences between middle school and high school students. Correlations between fall and spring self-appraisals were stronger for high school students (self-esteem = .72, self-efficacy = .65) than for middle school students (self-esteem = .59, self-efficacy = .52), suggesting greater stability in self-perceptions as youth progress through adolescence.

As a final inquiry, self-esteem and academic self-efficacy scores for fall (concurrent model) and spring (longitudinal model) were regressed on fall school variables. Results from this analysis are located in Table 4. Both gender and grade level were introduced into models as a separate block before entering school variables to statistically control for their influence on youth self-appraisals. Boys were coded as '0' and girls as '1'. Middle school students were coded as '0' and high school students as '1'. In longitudinal models, fall self-appraisals were entered as a separate block before gender and grade to partial out their influence on spring self-appraisal scores. Parameter estimates are taken from the final block of the model, which reflect trimmed models after taking into account possible interactions between gender and grade (entered as a control variable along with gender and grade) as well as interactions between each school variable, considered individually, and both gender and grade. No significant interactions emerged from this analysis so interaction terms were subsequently dropped from models.

Patterns of association for self-esteem and self-efficacy were similar. The negative coefficient for gender indicates that self-esteem scores were higher on average for boys than for girls. The positive coefficients for school attitude and connectedness indicate that upward increments in students' perceptions of schooling and connectedness to the school environment were associated with higher levels of self-esteem. School variables accounted for 27% of the variance in fall self-esteem. After controlling for the influence of early self-esteem, gender remained a significant predictor of spring self-esteem, albeit weakly. School attitude was the only significant predictor of self-esteem among the school variables, suggesting a modest but stable effect of students' general outlook towards school. It

accounted for 2% of variance in spring self-esteem scores. Gender was a significant predictor of fall academic self-efficacy. Significant school variables included attitude and connectedness. School variables accounted for 36% of variance in fall self-efficacy scores.

After controlling for the influence of self-efficacy measured earlier in the school year, a weak association between grade and spring self-efficacy emerged. The positive coefficient indicates that high school students have slightly higher perceptions of self-efficacy in the academic domain than do middle school students, controlling for gender; however, gender was not significant in this analysis. School attitude, but not school connectedness, remained a significant predictor of academic self-efficacy in the longitudinal analysis after controlling for fall self-perceptions. School attitude accounted for 3% of variance in spring academic self-efficacy scores.

Qualitative Evidence

Qualitative comments made during the first part of student interviews when they were asked how they liked school this year provides some support for and also some explanation of some of the quantitative results. At a grade level analysis, 7th-grade students expressed more positive feelings about school than the other grades, with an emphasis on peer influences, such as: *"I have a lot more friends;"* and *"there are a lot of kids here to make friends with."* In addition to peer comments, the most consistently positive reaction about middle school included an appreciation for being treated more maturely within the school environment, such as the ability to *"have lockers now"* or being *"able to switch classes and be on my own."* On the contrary, the 8th-grade students demonstrated a consistently negative tone about other students and boys especially worried about fighting and drugs. As example, one boy said that at this school, he does not *"have anyone to walk with,"* and *"so [he] fights more here"* Others worried that *"sometimes students sell drugs and talk about drugs."* 8th-grade students also compared their middle school teachers negatively as compared to their elementary teachers who they viewed as being *"more calm, patient"* and had *"more time to explain things to you."*

The high school students illustrated increasing differentiation between the girls and boys as the females became more positive about school throughout 9th and 10th grade, but the males more negative. Whereas one 10th grade girl remarked: *"In 9th grade, everything is all new. But by 10th grade, you know everyone. It's pretty cool."* However, a boy in the same class complained that *"Everyone is not doing their work. They're screwing around in the classrooms and stuff."* Also notable, by 10th-grade students included more academic comments, deviating from the other three grades' consistent preoccupation with social concerns. Two girls liked the fact that *"The teachers here help you more;"* and they saw high school as better because *"we have labs in science."* However, the boys primarily expressed negativity, such as one male's typical response: *"Middle school was better because here, students just rip up homework and throw it away."*

Gender-related differences were also found related to self-efficacy. Whereas high school girls expressed greater feelings of self-efficacy influenced by teachers, classes, and activities, boys expressed a lack of self-efficacy from frustration over their inability to work effectively as a result of others' behaviors. For instance, two girls recognized that *"high*

school is better” because they had “*more activities*” and others looked forward to “*trying out for sports*.” However, boys consistently believed middle school to be better because teachers “*made*” them “*get their work done*,” which was needed at high school where “*bad boys*” make them “*get distracted*.”

Discussion and Conclusions

The results of this study assist in analyzing the importance of the school environment for adolescents and whether relationships exist between adolescent self-appraisals and their perceptions of their schools. The regression analysis supports research, which has shown that male adolescents generally tend to have higher levels of self-esteem and self-efficacy than females (Kling, et al., 1999). It also reveals how school factors such as attitudes toward school and feelings of connectedness to school may influence self-esteem and self-efficacy. However, to contribute to our understanding of the *stag-environment fit* (Eccles & Midgley, 1990) of youth and their schools, an analysis of the complex relationship between grade level, gender, youth self-appraisals and school perceptions was necessary.

Consistent evidence from both the quantitative and qualitative analysis, indicates that the 7th-grade students entered middle school with the most positive perceptions about themselves and their new school when compared to the 8th, 9th, and 10th-grade students. Their reasons for liking 7th grade initially focused on their preoccupation with peers, lockers, and changing classes on their own, contributing to a very early 7th grade interpretation of being treated with more maturity. However, by the end of 7th grade and continuing on throughout 8th grade, students no longer appreciated the physical or social surroundings and instead demonstrated a *lack of fit* between themselves and their hectic school climate. Furthermore, a *lack of fit* between the teacher-student relationships may partially explain the decrease in attitude toward school and an increase in problematic behavior recognized by 8th grade boys. As others have found (Eccles et al., 1991), a *lack of fit* in the environment may contribute to an increase in behavior problems.

In this study, 7th-grade students appear to experience a *honeymoon effect* with early positive feelings which focus on the social environment and number of peers they now have access to for making friends. This complements extant literature on the importance of peer relationships when evaluating school environments (Loukas & Robinson, 2004). Furthermore, as Harter (1999) suggests, they have also taken in the appraisals of teachers who they view to be treating them less like children, when compared to their recent elementary school experience. Unfortunately, by 8th grade, the quantitative and qualitative results suggest that the *honeymoon effect* is over. Their general attitude continues to decline throughout the year as they recognized social challenges resulting from tensions with peers and teachers. This could be problematic because as others have found (Goodenow, 1993) students’ interpretation of the relationships they have with their teachers influences their perceptions of schools. As a result, educators should take note of the significant dip in school attitude that middle school students experience and investigate ways to strengthen positive relationships with their students. Contributing to the debate over the relationship between self-esteem and academic achievement (Baumeister, Campbell, Krueger, & Vohs, 2005; Ross & Broh, 2000), this study also explored self-esteem’s influence for this

population of students. As with other investigations of self-esteem and academic achievement, this study found self-esteem to correlate with the measured school variables (attitude, climate, and connectedness). However, what is most notable is that the strength of those associations is not as strong as the relationships between self-efficacy and the school variables, complementing other literature on the significance of self-efficacy (Ross & Broh, 2000).

Furthermore, this study found that for these youth, high school students have a higher sense of academic self-efficacy than middle school students, and attitude toward school to be a predictor of academic self-efficacy. In particular, the MANOVA results demonstrate how much more positive the 10th-grade students are about their sense of efficacy when compared to the 8th-grade students. These same students also revealed a much more positive feeling about school climate as compared to the 8th-grade students. As a result, if it is the case that attitude toward school, as revealed in the regression analysis, can predict a sense of self-efficacy, then educational staff should be aware of this link between attitude about school and self-efficacy to create a milieu that enhances a positive attitude toward school.

Variability in school attitude was also apparent in student interviews when adolescents verbally expressed a relationship between school environment and self-efficacy. The qualitative results demonstrate that this was especially the case for the 10th-grade students. The girls described a more heightened sense of efficacy than in any grade, relating these feelings to an environment that was somewhat empowering for them with a greater variety of people, activities, and challenges. Their positive qualitative statements support their higher means on the school attitude measure. For girls, 10th grade appeared to be a positive *stage-environment fit*.

However, boys' conversations focus more on the frustrations resulting from their relationships and interactions with peers and teachers. Their examples depict males whose feelings of self-efficacy appear to be influenced negatively by an environment which is frustrating, illustrating a *lack of fit*. Even though these males' self-efficacy scores did not decline over the course of 10th grade, their scores are consistently lower than the females. Their qualitative comments illustrate what the statistical results allude to: that their lower attitude toward school is associated with a lack of personal control they experience within school. This is noteworthy as feelings of personal control have been found to be connected to self-efficacy (Pajares, 1996; Schunk, 1995). As a result high schools need to be aware if their schools exhibit a negative climate for males where they feel out of control, influencing their attitude toward school and self-efficacy.

Incorporating cross-sectional and longitudinal methods of data collection at the beginning and end of the academic year, this study has been able to illustrate how a *lack of fit* may not reveal itself immediately; however, as the year progresses, students may feel and demonstrate the negative effects of an inappropriate environment. As a result, school systems which maintain middle school models must continue to evaluate the climate perpetuated by the schools to evaluate why such inconsistencies in school perception occur over time and what can be done to assist with declining attitudes among all students. Also in this case, the high school environment was more conducive to girls' attitudes about school

and encouraged a high level of self-efficacy, yet negatively influenced boys' attitudes. As a result, this may suggest that for this particular setting, the *goodness of fit* appears to increase for girls once they get into high school but decreases for boys in both middle and high school as they get older.

This study was conducted in authentic middle and high school settings within one school system. This brings with it challenges of working in naturally contextualized environments, such as participant retention and imprecise group size comparisons (limiting the ability to do ethnic or socioeconomic comparisons). However, using mixed methodology in authentic settings assists in triangulating results, strengthening the reliability and credibility of conclusions. Furthermore, because this particular setting includes grade levels that are demographically similar in ethnicity and SES, within the same school context, and representative of the regional population, it is able to present a trustworthy developmental analysis across grades. Consequently, the grade and gender trends should be noted as a starting point for additional research.

This article focused on the first year of a longitudinal study and therefore was limited to two waves of data collection for a limited longitudinal analysis covering one year. In the future, following these students over the course of four years will provide the opportunity to discover long lasting developmental trends as they transition from year to year through middle and high school. Only through that investigation can we determine if 7th-grade students do consistently experience a honeymoon effect which quickly declines and then later recovers during a more positive 10th grade experience, and whether schools have increasingly become places where boys feel a *lack of fit*, possibly influencing their own self-perceptions.

Acknowledgments

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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Biographies

Margaret Zoller Booth is a Professor of Educational Psychology and the Director of the School of Educational Foundations, Leadership and Policy at Bowling Green State University. Her research interests focus on the interrelationship between adolescents and their socio-cultural contexts within educational environments.

Jean M. Gerard is an Associate Professor of Human Development and Family Studies at Bowling Green State University. Her research interests focus on the relationship between family processes and adolescent development as well as ecological models of risk and resilience.

Table 1Demographic Breakdown of Sample ($N = 894$)

Characteristics	<i>N</i>	Percentage
Middle school	442	49.4
Female	236	53.4
Male	206	46.6
7th grade	224	50.7
8th grade	218	49.3
African American	25	5.7
Hispanic American	58	13.1
Multiracial	78	17.6
Caucasian	257	58.1
American Indian/native Alaskan	8	1.8
Asian/Pacific Islander	3	.7
Other	7	1.6
Missing	6	1.4
High school	452	50.6
Female	232	51.3
Male	220	48.7
9th grade	237	52.4
10th grade	215	47.6
African American	29	6.4
Hispanic American	47	10.4
Multiracial	81	17.9
Caucasian	288	63.7
American Indian/native Alaskan	3	.7
Asian/Pacific Islander	2	.4
Missing	2	.4

Table 2

MANOVA Results Based on Gender and Grade

Variable	Characteristics	7th		8th		9th		10th		Significant between-group differences	
		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Self-esteem	Total	3.14	3.13	3.01	3.08	2.99 ^a	3.07	3.11	3.16	7 versus 9 ($F = 4.37$)	
	Boys (B)	3.24	3.17	3.13	3.21	3.09	3.14	3.19	3.26	B versus G ($F = 7.38$)	
	Girls (G)	3.04	3.09	2.93	2.98	2.89	2.99	3.03	3.07		
Academic self-efficacy	Total	3.25	3.18	3.15	3.12	3.16	3.18	3.24	3.26 ^b	B versus G ($F = 1.05$)	8 versus 10 ($F = 2.48$)
	Boys	3.33	3.14	3.22	3.11	3.13	3.11	3.28	3.32		
	Girls	3.18	3.22	3.10	3.13	3.19	3.24	3.20	3.20		
School attitude	Total	2.83	2.67	2.71 ^a	2.64	2.69 ^a	2.68	2.76	2.74	7 versus 8, 9 ($F = 6.69$)	B versus G ($F = 18.68$)
	Boys	2.83	2.62	2.67	2.60	2.60	2.61	2.67	2.66	B versus G ($F = 2.34$)	
	Girls	2.84	2.73	2.73	2.67	2.78	2.74	2.84	2.81		
School climate	Total	2.89	2.61	2.71 ^a	2.54 ^a	2.73 ^a	2.67 ^b	2.78 ^a	2.73 ^b	7 versus 8, 9, 10 ($F = 7.51$)	8 versus 9, 10 ($F = 6.43$)
	Boys	2.87	2.61	2.71	2.52	2.66	2.65	2.72	2.66	B versus G ($F = 1.07$)	
	Girls	2.90	2.61	2.72	2.54	2.79	2.69	2.83	2.78		
School connectedness	Total	3.39	3.19	3.39	3.22	3.34	3.22	3.34	3.29 ^a	B versus G ($F = .74$)	
	Boys	3.35	3.14	3.32	3.17	3.35	3.21	3.31	3.29		
	Girls	3.43	3.25	3.44	3.25	3.33	3.23	3.37	3.29		

Note: Total means by gender separately from grade are not shown.

Statistically significant results based on p -values ranging from .05 to .001.

^a Significantly different from 7th graders

^b Significantly different from 8th graders

Table 3
Bivariate Associations Among School Variables (Fall) and Self-Perceptions (Fall and Spring)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) School attitude	—	.66**	.24**	.40**	.55**	.41**	.49**
(2) School climate	.69**	—	.23**	.31**	.43**	.30**	.37**
(3) School connectedness	.20**	.20**	—	.24**	.24**	.20**	.20**
(4) Self-esteem (fall)	.43**	.33**	.33**	—	.45**	.72**	.39**
(5) Academic self-efficacy (fall)	.60**	.39**	.24**	.49**	—	.43**	.65**
(6) Self-esteem (spring)	.36**	.20**	.20**	.59**	.37**	—	.51**
(7) Academic self-efficacy (spring)	.44**	.32**	.12*	.33**	.52**	.52**	—

Note: Statistically significant correlations are indicated by an asterisk
* $p < .05$,
** $p < .01$, two-tailed.
Correlations below the diagonal represent middle school students (7th–8th graders); correlations above the diagonal represent high school students (9th–10th graders).

Table 4
Regression of Fall and Spring Self-Esteem and Academic Self-Efficacy on Fall School Variables (*N* = 863)

Variables by block entry	Fall self-esteem				Fall academic self-efficacy				Spring self-esteem				Spring academic self-efficacy			
	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>R</i> ²
Fall self-appraisal	—	—	—	—	—	—	—	—	.64	.03	.59***	.43	.52	.04	.48***	.34
Gender	-.26	.03	-.26***	.04	-.17	.03	-.15***	.003	-.06	.03	-.05*	.002	.04	.03	.04	.01
Grade (7th–8th versus 9th–10th)	.00	.03	.00	—	.04	.03	.04	—	.04	.03	.04	—	.09	.03	.08**	—
School attitude	.51	.05	.38***	.27	.70	.05	.56***	.36	.27	.05	.18***	.02	.22	.06	.16***	.02
School climate	.04	.05	.04	—	.00	.05	.01	—	-.08	.05	-.06	—	.05	.05	.04	—
School connectedness	.23	.03	.21***	—	.09	.03	.13***	—	.01	.03	.01	—	-.00	.03	-.00	—
Total <i>R</i> ²	.31				.38				.45				.37			
<i>F</i>	65.91***				99.05***				117.66***				85.18***			

Note: Estimates taken from the final block of the regression model.

* *p* < .05,
** *p* < .01,
*** *p* < .001