Secondary School Students' Interest in Homework: What About Race and School Location?

Jianzhong Xu

Abstract

This study examined models of homework interest at the secondary school level to assess whether homework interest varies across race and school location and whether the influence of race on homework interest depends on characteristics of the context (e.g., school location and teacher feedback). Student- and class-level predictors of homework interest were analyzed in a survey of 866 eighth graders from 61 classes and of 745 eleventh graders from 46 classes in the southeastern United States. Results revealed that homework interest did not vary across race (Black students vs. White students) or school location (rural settings vs. urban settings). On the other hand, Black students considered homework more interesting in classes with more frequent teacher feedback than in classes with less frequent teacher feedback, but exactly the opposite was observed for White students.

Key Words: homework, interest, racial difference, White students, Black students, multilevel modeling, secondary school, high schools, rural, urban, teachers, feedback, motivation, academic engagement

Introduction

Homework is a common, well-known, and important part of most school-aged children's daily routine (Cooper, 1989; Cooper, Robinson, & Patall,

2006; Corno, 2000). It has long been an active area of investigation among educational researchers (Cooper et al., 2006; Corno, 1996; Epstein & Van Voorhis, 2001). It is surprising to note, however, that homework interest as perceived by children is notably absent from much contemporary homework research (Warton, 2001).

Informed by research and theorizing on interest in general, and theoretical models of homework in particular, the present researcher (Xu, 2008a) examined empirical models of variables posited to predict homework interest at the secondary school level. However, that study did not examine whether homework interest was related to race and school location.

Thus, there is a need to examine whether students' interest in homework is influenced by race and school location. This line of research is important, as homework interest is positively related to the amount of homework completed (Cooper, Lindsay, Nye, & Greathouse, 1998; Xu, 2008a) and academic achievement (Cooper et al., 1998), and as Black students have consistently underachieved in comparison to White students (Ladson-Billings, 2006; Lee, 2002). In addition, rural students tend to have lower educational aspirations in comparison with urban students (Arnold, Newman, Gaddy, & Dean, 2005; Hu, 2003). As educational aspirations may influence how students approach academic tasks such as homework assignments, it is important to examine whether there is a difference in homework interest as perceived by rural and urban students.

Related Literature

The present study is informed by previous research on homework interest as perceived by secondary school students. It is further informed by two lines of literature that suggest that race and school location may play a role in students' interest in homework.

Previous Research on Homework Interest

Typically defined as "a motivational variable [which] refers to the psychological state of engaging or the predisposition to reengage with particular classes of objects, events, or ideas over time" (Hidi & Renninger, 2006, p. 112), interest as a psychological construct has been given renewed attention recently (Eccles & Wigfield, 2002; Hidi & Renninger, 2006; Schiefele, 2001; Silvia, 2008). This is largely because interest is found to be positively associated with a variety of desirable outcomes (e.g., a positive impact on attention, persistence, and deep-level learning; Hidi & Renninger, 2006; Schiefele, 1999) and because educators continue to wrestle with the challenges of working with academically unmotivated students (Hidi & Harackiewicz, 2000).

As interest is often defined in terms of engagement (e.g., a psychological state of engaging or reengaging with particular classes of events over time), Corno and Mandinach's (2004) theoretical framework on academic engagement, with homework engagement in particular, bears direct relevance to the present study (Xu, 2008a). Corno and Mandinach view engagement as partly cognitive, partly conative (i.e., purposive striving), and partly affective (i.e., emotions). In the case of homework, the affective and conative aspects of engagement in particular are ever present, as the demand to complete externally imposed academic tasks in a familiar setting often leads to difficulties and frustrations (Corno, 2000), and as students (not just academically unmotivated students) often view homework as routine, mundane, and unappealing (Cooper et al., 1998; Warton, 2001). In addition, students rate their levels of positive affect during homework lower than other activities (e.g., eating and doing chores; Corno & Xu, 2004; Leone & Richards, 1989; Verma, Sharma, & Larson, 2002; Xu, 2005; Xu & Yuan, 2003). It is surprising to note, however, that few studies have empirically investigated students' interest in homework (Warton, 2001; Xu, 2006, 2008a).

Rare exceptions to the lack of attention in this area include a study by the present author (Xu, 2006). That study linked gender and grade level to homework interest, based on survey data from 426 high school students. Students were asked the extent to which they considered homework interesting. The results revealed no significant effect for grade level. On the other hand, gender appeared related to the extent to which students considered homework interesting. Specifically, girls found homework more interesting than boys did.

Recently, the present author (Xu, 2008a) proposed and tested empirical models of variables posited to predict homework interest at the secondary school level, as reported by 1,046 eighth graders from 63 classes and of 849 eleventh graders from 48 classes. The study was informed by relevant literature that pertains to students' interest in homework, including: (a) research and theorizing on interest in general (Ainley, 2006; Hidi & Renninger, 2006; Krapp, 2005; Schiefele, 2001), (b) theoretical models of homework (Cooper, 1989; Corno & Mandinach, 2004), and (c) findings from homework research that suggests several factors that may influence homework interest (e.g., gender and student attitude; Hoover-Dempsey et al., 2001; Trautwein, Ludtke, Schnyder, & Niggli, 2006; Xu & Corno, 1998). Consequently, the final model included three categories of variables at the student level, including: (a) background variables (gender, parent education, and self-reported grade), (b) adult guidance and monitoring (family homework help and teacher feedback), and (c) the role of the students in the homework process (monitoring motivation; peer-, adult-, and learning-oriented reasons; and affective attitude toward

homework). In addition, it included three variables at the class level (grade level, aggregated parent education, and aggregated teacher feedback).

The study (Xu, 2008a) found that, at the student level, homework interest was positively related to affective attitude (b = .56, p < .01), learning-oriented reasons (b = .19, p < .01), peer-oriented reasons (b = .07, p < .01), self-reported grade (b = .07, p < .01), and teacher feedback (b = .05, p < .01). Those students taking more initiative in monitoring motivation considered homework more interesting (b = .04, p < .05). In addition, boys reported statistically significant lower scores in homework interest than did girls (b = -.10, p < .01). At the class level, grade level was found to have a positive effect on homework interest (b = .10, p < .01). That study took one important step forward in addressing a critical gap in previous research on homework interest. On the other hand, as race and school location were not the study's prime focus, it did not explicitly link homework interest to these two variables.

Race

Whereas no study has explicitly linked race to homework interest, research on school engagement bears direct relevance to the present study, given that interest is typically defined in terms of engagement. One branch of study on school engagement that has relevance to the present investigation is research that conceptualizes student effort in doing homework as one important aspect of school engagement (Finn & Rock, 1997; Kelly, 2008a; Lee & Smith, 1993). Past research in this area, however, has produced mixed evidence on racial differences. Several studies found that Black students spent less time on homework than did White students (Ainsworth-Darnell & Downey, 1998; Fejgin, 1995; Steinberg, Brown, & Dornbusch, 1996).

Other studies have found no difference in school engagement between Black and White students as measured by a composite of attendance, class preparedness, and time spent on homework (Kelly, 2008a; Smerdon, 1999). Still other studies have reported that minority students (including Black students) were more academically engaged than White students (Johnson, Crosnoe, & Elder, 2001; Lee & Smith, 1995). For example, in one study based on 10,586 students from 111 middle and high schools, Johnson et al. (2001) found that Black students, compared with White students, were more likely to be engaged at school (going to class, paying attention, and doing homework).

Another branch of research on school engagement involves those studies that include one or two items about students' interest in their classes (Fredricks, Blumenfeld, & Paris, 2004; Glanville & Wildhagen, 2007; Marks, 2000). The findings from these studies were just as mixed. For example, Marks (2000) includes student interest in class, along with other items relating to student

effort, attentiveness, and class assignment completion, in her measurement of student engagement in instructional activity. Based on 3,669 students in 143 social studies and mathematics classrooms in a nationally selected sample of 24 elementary, middle, and high schools, she found no difference between Black and White students in the levels of engagement in instructional activity that students experienced in their classes. On the other hand, Shernoff and Schmidt (2008) used a composite variable of engagement measured by concentration, interest, and enjoyment. Based on 586 students from 13 high schools, they found Black students reported higher engagement than did White students.

As these scales on school engagement combined either students' effort in homework or their interest in classes with other items, it is not clear whether these mixed findings were due to students' ratings on their efforts in homework, their interest in classes, or other items in these scales (e.g., attendance, attentiveness, and class preparedness). Consequently, it is important to explicitly link race to homework interest as perceived by secondary school students.

School Location

Research has found that the educational aspirations of rural youth lag behind those of their urban counterparts (Arnold et al., 2005; Hu, 2003; Kampits, 1996; Khattri, Riley, & Kane, 1997). For example, based on descriptive statistics from the National Education Longitudinal Study of 1988 (NELS: 88), Hu (2003) examined educational aspirations and postsecondary access by students in urban and rural schools. Using tenth graders as a baseline population, the study found that lower percentages of rural students had aspirations for four-year college education or beyond (50.2% for rural, in contrast to 61.9% for urban students). Hu also found that smaller percentages of students from rural schools were enrolled in postsecondary institutions (51.1% for rural students, in contrast to 57.4% for urban students).

Related findings from other studies have further indicated that rural students place less value on academics (Ley, Nelson, & Beltyukova, 1996; Stern, 1994). In a study of 2,355 students from 21 rural high schools in 21 states, Ley et al. (1996) asked students to indicate the importance of 21 attributes relating to their personal goals after high school. The data revealed that they placed more importance on personal qualities (e.g., being dependable and having the ability to get along with others) and less importance on academic achievement in specific areas (e.g., being proficient in basic English skills and math skills).

It follows, then, that lower educational aspirations and less importance placed on academics could lead to a sense that "school isn't for me" (Haas, 1992) or that "homework isn't for me." These differences relating to educational aspirations and academic motivation suggest that rural and urban students

may view their homework differently (e.g., interest, relevance, and importance), as students' perception of the instrumentality of the present academic tasks to obtain future goals (e.g., postsecondary educational opportunities) influence the incentive value of the direct outcomes of achieving the proximal goal itself as well as the incentive value of its anticipated distal outcomes (Miller & Brickman, 2004; Schutz, 1997).

The Current Study

Taken together, one line of literature on school engagement raises an intriguing and important question about whether homework interest may be related to race. Another line of literature suggests that school location may play a role in homework interest. Yet, neither line of literature has explicitly focused on homework interest. On the other hand, previous research on homework interest has not explicitly linked this to either race or school location.

Thus, the purpose of the present study is to examine whether homework interest may vary across race and school location. In addition, there is a need to examine whether the influence of race on homework interest depends on characteristics of the context (e.g., school location and teacher feedback at the class level), as self-directed thoughts and feelings (e.g., task values) may be shaped by interactions with others (e.g., the appraisals and evaluations of teachers; Graham & Taylor, 2002), and as racial differences in attitudes may be shaped by contextual influences such as teachers' instructional practices (Shernoff & Schmidt, 2008).

In line with the literature on educational aspirations between rural and urban students, it is hypothesized that urban students would show more interest in their homework. On the other hand, information is lacking regarding whether White students or Black students may consider their homework more interesting, as the literature on school engagement has yielded mixed results.

Method

Participants and Procedures

The participants were 1,611 students in the southeastern United States, including 866 eighth graders from 61 classes and 745 eleventh graders from 46 classes. The sample consisted of 57.5% White students and 42.5% Black (i.e., African American) students. As this study was conducted in a region with more rural school districts, the sample included 1,161 rural students, more than twice as many as urban students (450).

For the present study, the definition of urban and rural is drawn from the U.S. Office of Budget and Management's definition of a metropolitan statistical area (MSA). A MSA includes at least (a) one city with 50,000 or more inhabitants, or (b) a Census Bureau-defined urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (Hobbs, 1994). Urban is thus defined as MSAs in metropolitan counties, whereas rural is defined as areas outside a MSA (Prater, Bermudez, & Owens, 1997; Semke & Sheridan, 2012; Weiss & Correa, 1996).

Of the 866 eighth graders, 46.6% were male, and 53.4% were female. The eighth grade sample included 57.3% White and 42.7% Black students. Among this sample, 37.2% received free meals. Of the 745 eleventh graders, 45.1% were male, and 54.9% were female. The eleventh grade sample included 57.7% White and 42.3% Black students. Among this sample, 36.0% received free meals. Overall, the survey response rate was 89%.

Superintendents were contacted first to secure their permission to administer the homework instrument. Principals and teachers were then asked to send parental consent forms home to seek parental approval. Finally, teachers administrated the homework instrument in the classroom. Students were told that the purpose was to find out their attitudes toward homework (e.g., homework interest and homework purpose) and their homework completion behaviors. They were also told that "completing the survey is voluntary. Whether or not you answer the questions will not influence your grade in this class. If you are not comfortable answering a question, just leave it blank." In addition, they were assured that "the answers you give will be kept private. No one will know what you write."

Instrument

The homework survey included questions about students' demographic characteristics. Students were asked about their grade average for all their subjects taken during the previous two years. Possible responses included: *below D* (1), *mostly D's* (2), *mostly C's* (3), *mostly B's* (4), and *mostly A's* (5). This item was adapted from the NELS: 88. Concerning the reliability of students' self-reported grades, several researchers found the correlation between self-reported grade and actual academic performance was very strong (Dickhaeuser & Plenter, 2005) or quite high (Kelly, 2008b).

Table 1. Alpha Reliability of Multi-Item Scales

Scales	Items	α (CI)
Teacher feedback[a]	How much of your assigned homework is discussed in class?	.79 (.77, .80)
	How much of your assigned homework is collected by teachers?	
	How much of your assigned homework is checked by teachers?	
	How much of your assigned homework is graded by teachers?	
	How much of your assigned homework is counted in your overall grade?	
Monitoring motivation[b]	Find ways to make homework more interesting	.83 (.82, .84)
	Praise myself for good effort	
	Praise myself for good work	
	Reassure myself that I am able to do homework when I feel it is too hard	
Peer-oriented reasons[c]	Doing homework brings you approval from classmates	.78 (.76, .80)
	Doing homework gives you opportunities to work with classmates	
	Doing homework gives you opportunities to learn from classmates	
Adult-oriented reasons[c]	Doing homework brings you teacher approval	.79 (.77, .80)
	Doing homework brings you family approval	
	Doing homework makes your family more aware of your learning at school	
Learning-oriented reasons[c]	Doing homework helps you understand what's going on in class	.89 (.88, .90)
	Doing homework helps you learn how to manage your time	
	Doing homework gives you opportunities to practice skills from class lessons	
	Doing homework helps you develop a sense of responsibility	
	Doing homework helps you learn to work independently	
	Doing homework helps you develop good discipline	
	Doing homework helps you learn study skills	
	Doing homework helps you get a good grade	
	Doing homework helps you prepare for the next lesson	
Affective attitude toward homework	My motivation or desire to do homework is _____[d] other after-school activities	.86 (.85, .87)
	My attention while doing homework is _____[d] other after-school activities	
	My mood while doing homework is _____[e] other after-school activities	
	Compared with other activities I do after school, homework is my _____[f]	
Homework interest	Overall, do you think the homework you get is _____?[g]	.83 (.81, .84)
	How do you feel about homework in general?[h]	
	How does your homework affect your interest in school?[i]	

Note: The 95% confidence intervals for coefficient alpha were calculated using a method employing the central F distribution (see Fan & Thompson, 2001).

[a]Responses were 1 (none), 2 (some), 3 (about half), 4 (most), and 5 (all).
[b]Responses were 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (routinely).
[c]Responses were 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree).
[d]Responses were 1 (much lower than), 2 (lower than), 3 (about the same as), 4 (higher than), and 5 (much higher than).
[e]Responses were 1 (much worse than), 2 (worse than), 3 (about the same as), 4 (better than), and 5 (much better than).
[f]Responses were 1 (least favorite activity), 2 (less favorite activity), 3 (about the same as other activities), 4 (more favorite activity), and 5 (most favorite activity).
[g]Responses were 1 (very boring), 2 (boring), 3 (neither boring nor interesting), 4 (interesting), and 5 (very interesting).
[h]Responses were 1 (don't like it at all), 2 (don't like it some), 3 (neither like it nor dislike it), 4 (like it some), and 5 (like it very much).
[i]Responses were 1 (decreases it a lot), 2 (decreases it some), 3 (does not make a difference), 4 (increases it some), and 5 (increases it a lot).

Two items asked about parent education (one for father/guardian and another for mother/guardian). Possible responses for both items included: *less than high school* (scored 6 years), *some high school* (scored 10 years), *high school graduate* (scored 12 years), *some college or two-year college graduate* (scored 14 years), *four-year college graduate* (scored 16 years), *some graduate school* (scored 17 years), and *graduate degree* (scored 19 years). A composite variable for parent education was constructed by averaging these two items. For single parent or guardian families, the response to either item was used for parent education. In addition, students were asked to indicate the frequency of family homework help, including: *never* (scored 1), *rarely* (scored 2), *sometimes* (scored 3), *often* (scored 4), and *routinely* (scored 5).

As further specified in Table 1, several multi-item scales were used for the present study. Some items were adapted from standard instruments (e.g., Cooper et al., 1998) or based on related literature (e.g., Warton, 2001), whereas others were derived from previously validated measures (e.g., Xu, 2008b).

Reasons for Doing Homework

Three subscales assessed reasons for doing homework, based on the homework purpose scale validated through the use of explorative factor analysis (Xu, 2010b) and confirmatory factor analysis (Xu, 2010a, 2011). Three items measured peer-oriented reasons (α = .78) relating to working with and seeking approval from peers. Three items measured adult-oriented reasons (α = .79) relating to seeking approval from significant adults (e.g., parents and teachers). Nine items measured learning-oriented reasons (α = .89) relating to reinforcing school learning and developing a sense of responsibility.

Monitoring Motivation

Monitoring motivation is one of the subscales on the Homework Management Scale (Xu, 2008b, 2008c). It includes four items to assess students' initiative to maintain or enhance their motivation while doing homework (α = .83), from making homework more interesting to reassuring themselves that they can complete their homework successfully.

Teacher Feedback

This scale includes five items to assess the extent to which teachers provide homework feedback (α = .79), informed by related literature (Murphy et al., 1987; Trautwein et al., 2006; Walberg, Paschal, & Weinstein, 1985). It measured how much of the assigned homework was monitored (e.g., discussed and checked).

Affective Attitude Toward Homework

Informed by related literature (Leone & Richards, 1989; Verma et al., 2002; Warton, 2001), four items assessed the favorability of homework as compared with other after-school activities, relating to students' motivation, attention, and mood (α = .86).

Homework Interest

Three items assessed the level of homework interest as perceived by students (α = .83), informed by literature on interest and intrinsic motivation (e.g., Deci, Vallerand, Pelletier, & Ryan, 1991; Wigfield & Eccles, 2000), and on homework interest in particular (Cooper et al., 1998; Xu, 2006, 2007). These items measure the extent to which students consider homework interesting and to what extent they like or dislike homework assignments. The above two scales (i.e., homework interest and affective attitude toward homework) were found to be empirically distinguishable (i.e., factorially distinct) for secondary school students (Xu, 2008a).

Statistical Analyses

Hierarchical linear modeling (HLM) allows for the inclusion of variables at multiple levels while taking into account the nonindependence of observations by addressing the variability associated with each level of nesting (Raudenbush & Bryk, 2002). Multilevel analyses were conducted using the HLM 6. To enhance the interpretability of the resulting regression coefficients, I standardized all continuous variables ($M = 0$, $SD = 1$) before performing the multilevel analyses. Thus, the regression weights for all variables (except the dummy-coded variables, including race, gender, school location, and grade level) are

approximately comparable with the standardized weights that result from multiple regression procedures (Xu, 2008a).

To assess whether homework interest varies across race (White students vs. Black students) and school location (urban vs. rural), Model 1 included race as a student-level variable and school location as a class-level variable, above and beyond the variables included in the final model of the previous study (Xu, 2008a). In addition, to determine whether the influence of race depends on characteristics of the context, Model 2 expanded the preceding model by adding four cross-level interactions (i.e., race × school location, race × grade level, race × aggregated parent education, and race × aggregated teacher feedback).

Restricted maximum likelihood estimation was used in all models, and all predictor variables were introduced as uncentered variables. There were few missing values, ranging from 0.0% to 7.2% (with a mean of 2.6%). These missing values were imputed using the expectation-maximization (EM) in SPSS 13.0.

Results

Table 2 presents the descriptive statistics relating to the study variables. More specifically, parent education for Black students and White students were 13.76 (*SD* = 2.64) and 13.57 (*SD* = 2.68), respectively. Meanwhile, family homework help for Black students and White students were 2.56 (*SD* = 1.37) and 2.38 (*SD* = 1.28), respectively.

Table 2 also includes zero-order correlations among independent variables and homework interest. Homework interest was found to correlate significantly with all of the independent variables except grade level, school location, parent education at the student level, and parent education at the class level.

The fully unconditional model was conducted to partition the variance in homework interest into between-class and within-class components. The results indicated that most of the variance occurred at the student level, with 10.7% of the variance in homework interest located at the class level.

Model 1 included 11 student-level variables (i.e., race, gender, parent education, self-reported grade, family homework help, teacher feedback, monitoring motivation, peer-, adult-, and learning-oriented reasons, and affective attitude) and four class-level variables (i.e., school location, grade level, aggregated parent education, and aggregated teacher feedback). Model 1 explained 55.8% of the variance in homework interest at the student level, 94.3% of the variance at the class level, and 59.9% of the total variance.

Table 2. Descriptive Statistics and Pearson Correlations

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Race (Black = 0, White = 1)	.57	.49	----														
2. Gender (girl = 0, boy = 1)	.46	.50	.02	----													
3. Parent education	13.65	2.67	-.04	.05*	----												
4. Self-reported grade	3.80	.89	.14**	-.17**	.15**	----											
5. Family homework help	2.45	1.32	-.07**	-.01	.15**	-.07**	----										
6. Teacher feedback	3.61	.83	-.19**	-.02	.07**	-.02	.21**	----									
7. Monitoring motivation	2.71	.98	-.29**	-.13**	.09**	.07**	.25**	.23**	----								
8. Peer-oriented reasons	2.33	.73	-.16**	-.09**	.00	.01	.21**	.20**	.33**	----							
9. Adult-oriented reasons	2.56	.70	-.16**	-.08**	.03	.04	.20**	.29**	.34**	.67**	----						
10. Learning-oriented reasons	2.84	.60	-.21**	-.20**	.02	.10**	.17**	.31**	.43**	.59**	.62**	----					
11. Affective attitude	2.17	.85	-.34**	-.14**	.03	.01	.22**	.29**	.41**	.36**	.40**	.50**	----				
12. Location (rural = 0, urban = 1)	.25	.44	-.13**	-.01	.22**	-.02	.10**	.06*	.07**	-.03	-.06*	-.07**	.03	----			
13. Parent education (class)	13.60	.99	-.03	-.01	.37**	.14**	.10**	.03	.08**	-.06*	-.07**	-.06*	.01	.61**	----		
14. Teacher feedback (class)	3.61	.34	-.24**	.00	.02	-.14**	.23**	.40**	.16**	.10**	.17**	.14**	.24**	.12**	.03	----	
15. Grade level (8 = 0, 11= 1)	.43	.50	.00	-.02	-.12**	-.02	-.31**	-.19**	-.08**	.04	-.03	.05*	-.06*	-.17**	-.30**	-.45**	----
16. Homework interest	2.40	.96	-.28**	-.20**	.04	.11**	.18**	.31**	.40**	.43**	.44**	.57**	.72**	.02	.01	.18**	.00

Note. *N* varies from 1, 600 to 1,611 (11 students did not indicate their gender status). * $p < .05$. ** $p < .01$

As documented in Table 3, seven student-level variables were found to have a statistically significant effect on homework interest. Homework interest was positively associated with affective attitude (b = .54, p < .01), learning-oriented reasons (b = .19, p < .01), self-reported grade (b = .08, p < .01), teacher feedback (b = .07, p < .01), and peer-oriented reasons (b = .07, p < .05). Those students taking more initiative in monitoring motivation considered homework more interesting (b = .04, p < .05). In addition, males reported statistically significant lower scores in homework interest than females (b = -.11, p < .01). At the class level, grade level was found to have a positive effect on homework interest (b = .09, p < .05), after controlling all other variables.

Table 3. Predicting Homework Interest: Results from Hierarchical Linear Modeling

Model Predictor		Model 1		Model 2	
		b	*SE*	*b*	*SE*
Student level					
	Race (Black = 0, White = 1)	-.06	.04	-.04	.06
	Gender (girl = 0, boy = 1)	-.11**	.03	-.11**	.03
	Parent education	.00	.02	.00	.02
	Self-reported grade	.08**	.02	.08**	.02
	Family homework help	.01	.02	.00	.02
	Teacher feedback	.07**	.02	.07**	.02
	Monitoring motivation	.04*	.02	.04*	.02
	Peer-oriented reasons	.07*	.03	.07*	.03
	Adult-oriented reasons	.00	.03	.00	.03
	Learning-oriented reasons	.19**	.02	.19**	.02
	Affective attitude	.54**	.02	.54**	.02
Class level					
	School location (rural = 0, urban = 1)	.05	.05	.02	.07
	Parent education	.00	.06	.07	.11
	Teacher feedback	.00	.05	.12	.07
	Grade level (8 = 0, 11= 1)	.09*	.04	.14*	.07
Cross-level interaction					
	Race × School location (class)			.09	.10
	Race × Parent education (class)			-.15	.14
	Race × Teacher feedback (class)			-.24**	.09
	Race × Grade level (class)			-.09	.08
R^2 individual level		.558		.557	
R^2 class level		.943		.959	
R^2 total		.599		.600	

Note. N = 1,600 from 107 classes. b = unstandardized regression coefficient. SE = standard error of b. R^2 = amount of explained variance. * p < .05. ** p < .01.

Of primary interest in the present study are the findings relating to race and school location. Neither race (Black students vs. White students) nor school location (rural vs. urban) was found to be related to homework interest. In addition, the inclusion of race and school location did not influence any of the results reported in the previous study (Xu, 2008a). These findings suggest that results from the previous study (Xu, 2008a) may be applicable across race (i.e., Black students vs. White students) and school location (i.e., rural vs. urban).

Model 2 specified several cross-level interaction terms as additional predictors. To test whether four class-level variables may play a role for Black students or White students in particular, interactions of the four class-level variables with race were introduced (i.e., race × school location, race × grade level, race × aggregated parent education, and race × aggregated teacher feedback). The results revealed that the interaction terms of race × school location, race × grade level, and race × aggregated parent education did not yield statistically significant results.

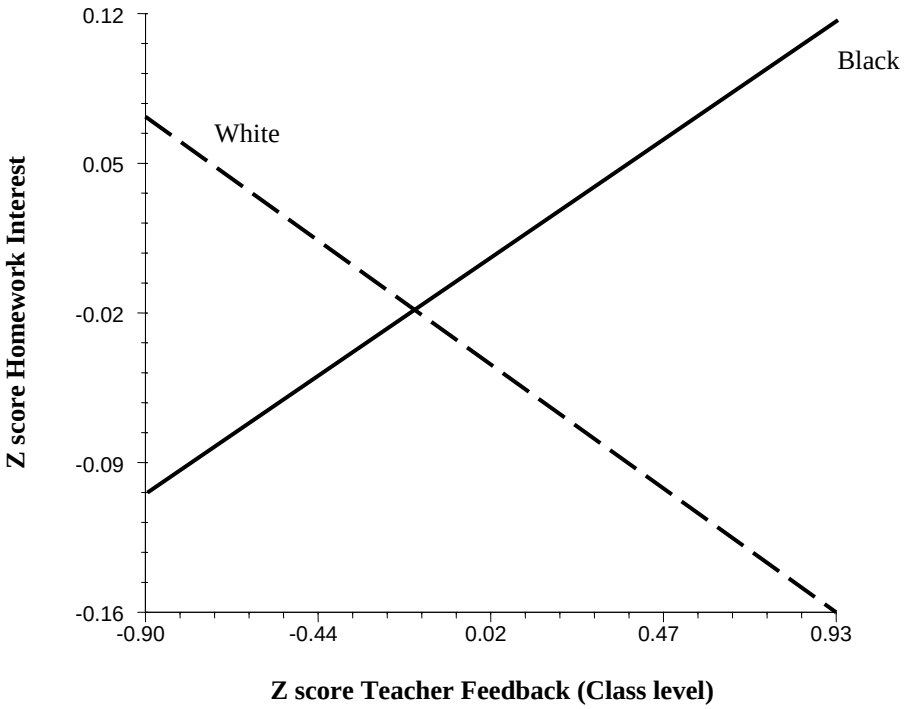

Figure 1. Graphical representation of the significant interaction effect Race × Teacher Feedback (class level) in Model 2.

On the other hand, the interaction term race × aggregated teacher feedback showed a statistically significant negative effect (b = -.24, p < .01). As illustrated in Figure 1, Black students considered homework more interesting in classes

with more frequent teacher feedback than in classes with less frequent teacher feedback. On the other hand, White students considered homework more interesting in classes with less frequent teacher feedback than in classes with more frequent teacher feedback.

For exploratory reasons, I repeated Model 2 to test a gender interaction with other variables, including 2-way interactions (gender × race, and gender × school location) and 3-way interactions (gender × race × aggregated teacher feedback, and gender × race × school location). None of these interaction terms yielded statistically significant results.

Discussion

The present study examined models of homework interest in secondary school students to assess whether homework interest varies across race and school location and whether the impact of student-level race depends on characteristics of the context. Results revealed that homework interest did not vary across race and school location. Nor did the inclusion of race and school location influence the results reported in the previous study (Xu, 2008a). In addition, results revealed that Black students considered homework more interesting in classes with more frequent teacher feedback than in classes with less frequent teacher feedback, but the opposite was found for White students.

What do we make of the finding that school location, as a class-level variable, was not related to homework interest? Previous literature on educational aspirations of rural and urban youth finds that rural youth tend to have lower educational aspirations compared with urban youth (e.g., Arnold et al., 2005; Hu, 2003). One recent study by Howley (2006) paid more attention to educational aspirations at different levels of schooling among rural and nonrural youth. The findings indicate that rural youth are just as likely to aspire to a high school or an undergraduate education as are nonrural youth. The significant difference in aspirations between rural and nonrural children was found in terms of a postgraduate education: A larger percentage of nonrural than rural youth aspire to graduate studies. As secondary school students more removed from a postgraduate education (as compared with a high school or an undergraduate education), this difference in educational aspirations between rural and nonrural youth may play a less important role in homework interest at the secondary school level.

What do we make of the finding that there is no difference in homework interest between Black and White students? Previous studies on school engagement have produced mixed evidence on racial and ethnic differences (e.g., Johnson et al., 2001; Kelly, 2008a; Marks, 2002). Yet, these studies have

typically conceptualized either students' effort in homework or their interest in classes as one important aspect of school engagement. A recent study by Shernoff and Schmidt (2008) casts a different light by comparing the engagement of White and Black students in three different settings: in public, at home, and in school. Black students reported relatively constant levels of engagement in all three contexts, whereas White students reported engagement peaked when in public and took a significant drop when at school. Their results indicated that engagement at home was relatively neutral and did not significantly vary by race. Thus, it is not surprising that there is no difference in homework interest between Black and White students, given that (a) their engagement scale includes three items on concentration, interest, and enjoyment, and (b) homework is one important aspect of engagement at home.

Finally, what do we make of the finding that Black students considered homework more interesting in classes with more frequent teacher feedback than in classes with less frequent teacher feedback, but exactly the opposite was observed for White students? One possible explanation is that there may be differences in the opportunities for engagement at home and in public among students from different racial and ethnic backgrounds (Shernoff & Schmidt, 2008). Black students, particularly those living in poverty, are faced with greater social and financial hardships accompanied by chronic stress (Alex-Assensoh & Assensoh, 2001; Spencer & Markstrom-Adams, 1990). For students facing these hardships, structured academic settings (e.g., adult attention and supervision) may be more conducive to promoting engagement in general (Shernoff & Schmidt, 2008). Thus, structured academic settings may be more conductive to promoting student interest for these students in particular, as their effort in homework or their interest in classes are often viewed as an important part of student engagement.

In the case of homework, a similar argument can be made. That is, more frequent homework feedback at the class level may be perceived as more engaging and interesting by Black students who tend to experience less adult attention and supervision outside of school (Shernoff & Schmidt, 2008). This is, to some extent, further substantiated by the finding that Black students, as compared with White students, were more concerned about pleasing their teachers (Casteel, 1997). Consequently, more frequent teacher feedback at the class level may be more conducive to promoting Black students' interest in homework.

By contrast, White students may have more opportunities for structured engagement elsewhere (e.g., active leisure activities) and may experience school as relatively less exciting and more confining (Shernoff & Schmidt, 2008). Thus, another related hypothesis is that more frequent homework feedback at the class level may be perceived as more confining and controlling by White

students who are more eager to engage in other available opportunities for structured activities outside of school. Accordingly, more frequent teacher feedback at the class level may downgrade White students' interest in homework, as it may be viewed as preventing them from pursuing other, more appealing activities outside of school.

Although the percentage of the students who received free meals in the present study (37%) was close to the national average (32%; National Center for Education Statistics, 2007), the present study has several limitations. First, it was based on a cross-sectional survey, rather than repeated measures at different time points. Second, it relied on self-reported data and may be subject to social desirability bias (Duncan & McKeachie, 2005; Wentzel & Wigfield, 2007). The students may have wanted to present themselves in a more favorable light (e.g., under-reporting family help). Although it is difficult to determine the exact effects of self-reported data on the findings, some evidence suggests that social desirability bias is unlikely to be a major concern for the present study. For example, the percentage of eighth graders who reported that they received family help in the present study (75%) was close to that found in a nationally representative sample of eighth graders (71%) in the NELS: 88 (Horn & West, 1992). Another limitation relates to the issue of causation. Although much care was taken to control possible confounding variables, other predictor variables might have had an effect on homework interest had they been included (e.g., other community and school factors).

As the present study is the first to link homework interest to race and school location, future research is needed in other settings and over a greater grade span. In particular, longitudinal studies are needed to examine how children from diverse racial and ethnic backgrounds rate homework interest over time (i.e., how their sense of homework interest evolves over time) and how their ratings may be influenced by a broad spectrum of variables such as those examined in the present study. In addition, there is a need to (a) link homework interest to major homework outcome variables (e.g., homework performance and academic achievement) in a longitudinal design, and (b) examine whether the linkage between homework interest and these homework outcome variables may be moderated by difference in racial difference and school location.

It would also be informative to conduct qualitative studies to better understand children's interest in homework across different racial groups as well as individual differences within different racial groups (e.g., multilevel antecedents and processes underlying variations in homework interest, and common interest-dependent variations across races or ethnicities). For example, interview methods could be used to ask children from different racial or ethnic groups in rural and urban settings about how they view and define homework

interest. Similarly, it would be important to better understand what factors, in their views, contribute to homework interest (e.g., the role of teacher feedback), how their views evolve over time, and under what circumstances. In addition, in light of the call for multidisciplinary perspectives in race and motivation research (Graham & Taylor, 2002), there is also a need to go beyond the individual-focused boundaries of the discipline in research on homework interest, as relevant constructs from anthropology (e.g., oppositional identity and cultural stereotypes), sociology (e.g., institutional and community-level barriers), and social psychology (e.g., self-esteem and social cognition) may mediate the relation between race and homework interest.

With respect to homework practices, it seems that several implications discussed in a previous study (Xu, 2008a) are equally relevant here. For example, given the finding that affective attitude plays a dominant role in predicting homework interest, it is important to help students plan their time spent on preferred activities and homework on a weekly basis, so that they will be less sidetracked by thoughts of competing activities while doing homework, thereby viewing homework in a relatively more favorable light.

As teachers' perceptions, expectations, and behaviors often interact with students' beliefs, behaviors, and work habits in ways that help to perpetuate the Black–White test score gap, Ferguson (2003) calls for responsive teaching and feedback that affect both test score levels and the achievement gap. Thus, the finding that Black students viewed homework as more interesting in classes with more frequent teacher feedback has important implications for reducing the Black–White achievement gap. In line with recent research reporting that participation in structured extracurricular activities is linked to greater school engagement among Black students, in particular (Dotterer, McHale, & Crouter, 2007), these findings suggest that Black students may benefit from more structured guidance and more frequent follow-up from their teachers regarding their homework assignments. This is particularly important, as (a) homework interest is positively associated with homework completion (Cooper et al., 1998; Xu, 2008a) and academic achievement (Cooper et al., 1998), and as (b) teachers' beliefs and practices are likely to affect Black students more than White students (Ferguson, 2003). Meanwhile, the finding that White students viewed homework as less interesting in classes with more frequent teacher feedback suggests that White students may benefit from more individualized homework feedback, as results from the present study revealed that homework interest was positively related to teacher feedback at the student level for both White and Black students.

References

Ainley, M. (2006). Connecting with learning: Motivation, affect, and cognition in interest processes. *Educational Psychology Review*, *18*, 391–405.

Ainsworth-Darnell, J. W., & Downey, D. B. (1998). Assessing the oppositional culture explanation for racial/ethnic differences in school performance. *American Sociological Review*, *63*, 536–553.

Alex-Assensoh, Y., & Assensoh, A. B. (2001). Inner-city contexts, church attendance, and African-American political participation. *Journal of Politics*, *63*, 886–901.

Arnold, M. L., Newman, J. H., Gaddy, B. B., & Dean, C. B. (2005). A look at the condition of rural education research: Setting a direction for future research. *Journal of Research in Rural Education*, *20*(6). Retrieved from http://jrre.psu.edu/articles/20-6.pdf

Casteel, C. (1997). Attitudes of African American and Caucasian eighth grade students about praises, rewards, and punishments. *Elementary School Guidance and Counseling*, *31*, 262–272.

Cooper, H. (1989). *Homework*. White Plains, NY: Longman.

Cooper, H., Lindsay, J. J., Nye, B., & Greathouse, S. (1998). Relationships among attitudes about homework, amount of homework assigned and completed, and student achievement. *Journal of Educational Psychology*, *90*, 70–83.

Cooper, H., Robinson, J. C., & Patall, E. A. (2006). Does homework improve academic achievement? A synthesis of research, 1987–2003. *Review of Educational Research*, *76*, 1–62.

Corno, L. (1996). Homework is a complicated thing. *Educational Researcher*, *25*(8), 27–30.

Corno, L. (2000). Looking at homework differently. *Elementary School Journal, 100,* 529–548.

Corno, L., & Mandinach, E. B. (2004). What we have learned about student engagement in the past twenty years. In D. M. McInerney & S. V. Etten (Eds.), *Big theories revisited: Vol 4. Research on sociocultural influences on motivation and learning* (pp. 299–328). Greenwich, CT: Information Age.

Corno, L., & Xu, J. (2004). Doing homework as the job of childhood. *Theory Into Practice*, *43*, 227–233.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, *26*, 325–346.

Dickhaeuser, O., & Plenter, I. (2005). Letzes Halbjahr stand ich zwei. Zur Akkuratheit selbst berichteter Noten [On the accuracy of self-reported school marks]. *Zeitschrift für Pädagogische Psychologie, 19,* 219–224.

Dotterer, A. M., McHale, S., & Crouter, A. C. (2007). Implications of out-of-school activities for school engagement in African American adolescents. *Journal of Youth and Adolescence*, *36*, 391–401.

Duncan T. G., & McKeachie, W. J. (2005). The making of the Motivated Strategies for Learning Questionnaire. *Educational Psychologist*, *40*, 117–128.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, *53*, 109–32.

Epstein, J. L., & Van Voorhis, F. L. (2001). More than minutes: Teachers' roles in designing homework. *Educational Psychologist, 36,* 181–193.

Fan, X., & Thompson, B. (2001). Confidence intervals about score reliability coefficients, please: An EPM guidelines editorial. *Educational and Psychological Measurement*, *61*, 517–531.

Ferguson, R. F. (2003). Teachers' perceptions and expectations and the Black–White test score gap. *Urban Education*, *38*, 460–507.

Fejgin, N. (1995). Factors contributing to the academic excellence of American Jewish and Asian students. *Sociology of Education*, *68*, 18–30.

Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82,* 221–234.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, *74*, 59–109.

Glanville, J. L., & Wildhagen, T. (2007). The measurement of school engagement: Assessing dimensionality and measurement invariance across race and ethnicity. *Educational and Psychological Measurement*, *67*, 1019–1041.

Graham, S., & Taylor, A. Z. (2002). Ethnicity, gender, and the development of achievement values. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation* (pp. 121–146). New York, NY: Academic Press.

Haas, T. (1992). *What can I become: Educational aspirations of students in rural America*. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service, No. ED345931)

Hidi, S., & Harackiewicz, J. M. (2000). Motivating the academically unmotivated: A critical issue for the 21st century. *Review of Educational Research*, *70*, 151–179.

Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist*, *41*, 111–127.

Hoover-Dempsey, K. V., Battiato, A. C., Walker, J. M. T., Reed, R. P., DeJong, J. M., & Jones, K. P. (2001). Parental involvement in homework. *Educational Psychologist*, *36*, 195–209.

Horn, L., & West, J. (1992). *National Education Longitudinal Study of 1988: A profile of parents of eighth graders.* Washington, DC: U. S. Department of Education, Office of Educational Research and Improvement.

Howley, C. (2006). Remote possibilities: Rural children's educational aspirations. *Peabody Journal of Education, 81*(2), 62–80.

Hobbs, D. (1994). Demographic trends in nonmetropolitian America. *Journal of Research in Rural Education, 10,* 149–160.

Hu, S. (2003). Educational aspirations and postsecondary access and choice: Students in urban, suburban, and rural schools compared. *Education Policy Analysis Archives*, *11*(14). Retrieved from http://epaa.asu.edu/epaa/v11n14/

Johnson, M. K., Crosnoe, R., & Elder, Jr., G. H. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education*, *74*, 318–340.

Kampits, E. I. (1996). Rural partnerships in New England: Learning from kids. *Journal of Research in Rural Education*, *12*, 171–177.

Kelly, S. (2008a). Race, social class, and student engagement in middle school English classrooms. *Social Science Research*, *37*, 434–448.

Kelly, S. (2008b). What types of students' effort are rewarded with high marks. *Sociology of Education*, *81*, 32–52.

Khattri, N., Riley, K. W., & Kane, M. B. (1997). Students at risk in poor, rural areas: A review of the research. *Journal of Research in Rural Education*, *13*, 79–100.

Krapp, A. (2005). Basic needs and the development of interest and intrinsic motivational orientations. *Learning and Instruction*, *15*, 381–395.

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in U.S. schools. *Educational Researcher*, *35*(7), 3–12.

Lee, J. (2002). Racial and ethnic achievement gap trends: Reversing the progress toward equity? *Educaitonal Researcher*, *31*(1), 3–12.

Lee, V. E., & Smith, J. B. (1993). Effects of school restructuring on the achievement and engagement of middle-grade students. *Sociology of Education, 66,* 164–187.

Lee, V. E., & Smith, J. B. (1995). Effects of high school restructuring and size on early gains in achievement and engagement for early secondary school students. *Sociology of Education*, *68*, 241–270.

Leone, C. M., & Richards, M. H. (1989). Classwork and homework in early adolescence: The ecology of achievement. *Journal of Youth and Adolescence*, *18*, 531–548.

Ley, J., Nelson, S., & Beltyukova, S. (1996). Congruence of aspirations of rural youth with expectations held by parents and school staff. *Journal of Research in Rural Education*, *12*, 133–141.

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in elementary, middle, and high school years. *American Educational Research Journal*, *37*, 153–184.

Miller, R. B., & Brickman, S. J. (2004). A model of future-oriented motivation and self-regulation. *Educational Psychology Review*, *16*, 9–33.

Murphy, J., Decker, K., Chaplin, C., Dagenais, R., Heller, J., Jones, R., & Willis, M. (1987). An exploratory analysis of the structure of homework assignments in high schools. *Research in Rural Education*, *4*, 61–71.

National Center for Education Statistics. (2007). *Common Core of Data, 2005–2006 (v.1a).* Washington, DC: U.S. Department of Education. Retrieved November 19, 2007 from http://nces.ed.gov/ccd/pubschuniv.asp

Prater, D. L., Bermudez, A. B., & Owens, E. (1997). Examining parental involvement in rural, urban, and suburban schools. *Journal of Research in Rural Education, 13*, 72–75.

Raudenbush, S., & Bryk, A. (2002). *Hierarchical linear models: Applications and data analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Schiefele, U. (1999). Interest and learning from text. *Scientific Studies of Reading*, *3*, 257–289.

Schiefele, U. (2001). The role of interest in motivation and learning. In J. M. Collis & S. Messick (Eds.), *Intelligence and personality: Bridging the gap in theory and measurement* (pp. 163–193). Mahwah, NJ: Erlbaum.

Schutz, P. A. (1997). Educational goals, strategies use, and the academic performance of high school students. *High School Journal*, *80*, 193–201.

Semke, C. A., & Sheridan, S. M. (2012). Family–school connections in rural educational settings: A systematic review of the empirical literature. *School Community Journal*, *22*(1), 21–48. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Shernoff, D. J., & Schmidt, J. A. (2008). Further evidence of an engagement–achievement paradox among U.S. high school students. *Journal of Youth and Adolescence*, *37*, 564–580.

Silvia, P. J. (2008). Interest—The curious emotion. *Current Directions in Psychological Science*, *17*, 57–60.

Smerdon, B. A. (1999). Engagement and achievement: Differences between African American and White high school students. *Research in Sociology of Education and Socialization*, *12*, 103–134.

Spencer, M. B., & Markstorm-Adams, C. (1990). Identity processes among racial and ethnic minority children in America. *Child Development*, *61*, 290–309.

Stern, J. D. (Ed.). (1994). *The condition of education in rural schools.* Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, Programs for the Improvement of Practice.

Steinberg, L. D., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York, NY: Simon & Schuster.

Trautwein, U., Ludtke, O., Schnyder, I., & Niggli, A. (2006). Predicting homework effort: Support for a domain-specific, multilevel homework model. *Journal of Educational Psychology*, *98*, 438–456.

Verma, S., Sharma, D., & Larson, R. W. (2002). School stress in India: Effects on time and daily emotions. *International Journal of Behavior Development*, *26*, 500–508.

Walberg, H. J., Paschal, R. A., & Weinstein, T. (1985). Homework's powerful effects on learning. *Educational Leadership*, *42*, 76–79.

Warton, P. M. (2001). The forgotten voices in homework: Views of students. *Educational Psychologist*, *36*, 155–165.

Wentzel, K. R., & Wigfield A. (2007). Motivational interventions that work: Themes and remaining issues. *Educational Psychologist*, *42*, 261–271.

Weiss, K. E., & Correa, V. I. (1996). Challenges and strategies for early childhood special education services in Florida's rural schools: A DELPHI study. *Journal of Research in Rural Education*, *12*, 33–43.

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology*, *25*, 68–81.

Xu, J. (2005). Homework emotion management reported by high school students. *School Community Journal*, *15*(2), 21–36. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Xu, J. (2006). Gender and homework management reported by high school students. *Educational Psychology, 26,* 73–91.

Xu, J. (2007). Middle-school homework management: More than just gender and family involvement. *Educational Psychology, 27,* 173–189.

Xu, J. (2008a). Models of secondary school students' interest in homework: A multilevel analysis. *American Educational Research Journal*, *45*, 1180–1205.

Xu, J. (2008b). Validation of scores on the homework management scale for high school students. *Educational and Psychological Measurement*, *68*, 304–324.

Xu, J. (2008c). Validation of scores on the homework management scale for middle school students. *Elementary School Journal*, *109*, 82–95.

Xu, J. (2010a). Homework purpose scale for high school students: A validation study. *Educational and Psychological Measurement*, *70*, 459–476.

Xu, J. (2010b). Homework purposes reported by secondary school students: A multilevel analysis. *Journal of Educational Research*, *103*, 171–182.

Xu, J. (2011). Homework purpose scale for middle school students: A validation study. *Middle Grades Research Journal*, *6*(1), 1–14.

Xu, J., & Corno, L. (1998). Case studies of families doing third-grade homework. *Teachers College Record, 100*, 402–436.

Xu, J., & Yuan, R. (2003). Doing homework: Listening to students', parents', and teachers' voices in one urban middle school community. *School Community Journal*, *13*(2), 25–44.

Jianzhong Xu is a professor in the Department of Leadership and Foundations at Mississippi State University. His research interests focus on teaching and learning in the school and home settings, in home–school relationships, and in partnerships with families from diverse cultural backgrounds. Correspondence concerning this article may be addressed to Dr. Jianzhong Xu, Department of Leadership and Foundations, Box 6037, Mississippi State University, Mississippi State, MS 39762, or email jx18@colled.msstate.edu