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Peer influence and adolescents' school engagement

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Abstract

Many studies have suggested that friends have a powerful influence on school adjustment, attitudes, and behaviors. However, there is a paucity of systematic investigations on the relationship between peer influence and adolescents' school engagement. Therefore, this study investigated the relationship by applying longitudinal analyses as well as testing indirect effects of peer influence via students' motivational factors such as locus of control and academic expectation. Results from this study indicated that peers have an important influence on the behavior and development of adolescents. These findings are understandable in that the child's acceptance within the peer group is one of the key measures of positive/negative school experiences. Perceived support from peers can give students a sense of motivation and help students see the importance of pursuing academic success.

Keywords: **school engagement; peer influence; adolescents; locus of control; academic expectation**

1. Introduction

Previous research has shown that student academic achievement is significantly related to the level of student engagement. For example, students with higher levels of engagement tend to have higher academic achievement scores (Finn, Pannozzo, & Voelkl, 1995; Epstein & Sheldon, 2002; Spiegel, 2003). This result was confirmed by several studies showing a similar significant relationship across many different age groups (Connell, Spencer, & Lawrence, 1994; Finn &Rock, 1997; Skinner, Wellborn, & Connell, 1990; Ryan, 2000).

School engagement as a concept can range from the effort students put forth in learning opportunities to their sense of belonging within the school culture (Finn, Pannozzo, & Voelkl, 1995). Studies have suggested that friends have a powerful influence on school adjustment, attitudes, and behaviors (Berndt and Keefe, 1999; Kindermann, McCollam, & Gibson, 1996) However, there is a paucity of systematic investigations on the relationship between peer influence and adolescents' school engagement. Therefore, the purpose of this study was to examine the relationship by applying longitudinal analyses as well as testing indirect effects of peer influence via students' motivational factors such as locus of control and academic expectation. The current study investigated the longitudinal relation between peer influence and adolescents' school engagement using data from the National Education Longitudinal Survey of 1988 (NELS: 88).

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In Garmezy's (1985) review of research on stress-resistant children, he concluded that three broad sets of variables operated as protective factors in children's coping mechanism. In addition to psychological features and family cohesion, the availability of external support systems that encourage and reinforce a child's coping efforts is identified as one of the important sets of protective factors. Possible sources of an external support system for students are teachers and peers. Students' interpersonal relationships with their teachers and peers can be powerful social contexts that motivate student behavior.

Students' peer relationships can have an important role in their school adjustment and motivation. Some scholars acknowledged that children's experience with peers constitute an important developmental context for children and adolescents (Kindermann, McCollam, & Gibson, 1996; Ryan, 2000). Although prior studies have widely acknowledged the significance of social support in students' academic success, they focused more on the effects of teachers and parents than on the effect of peers on student's academic engagement (Eccles, Wigfield, & Schiefele, 1998). Research on friends' influence has focused heavily on its effects on students' drug use and delinquent behaviors. To widen the scope of understanding the effect of peers on student experience, the current study reviewed the research that addresses the influence of peer groups on academic outcomes.

As previous studies have suggested, friends play a significant role in influencing students' school adjustment, attitudes, and behaviors (Berndt and Keefe (1999). However, much of the work concerning peer influence has measured the variables of interest at one point in time and generally used correlational techniques. These studies found that there is a moderate to high correlation between students and their self-identified friends on many characteristics such as academic aspirations (Ide, Parkerson, Haertel, & Walberg, 1981) and school related behaviors such as cutting classes (Kandel, 1981) and time spent on homework (Cohen, 1977).

Several short-term longitudinal studies also provided evidence that peer influences on children and adolescents' attitudes and behaviors are strong. Kindermann (1993) found that peer groups are important for students' engagement in learning activities. By comparing two assessments measured in the first and last month of fourth grader, peer group were found to be a predictor of engagement in schoolwork across all levels of engagement. Using data from adolescent students (9^{th}, 11^{th}, and 12^{th} graders), Kindermann, McCollam, and Gibson (1996) replicated this finding. Berndt and Keefe (1999) used a short-term longitudinal design to assess friends' influence on students' attitudes, behavior, and academic achievement in junior high school. They collected data two times during a 6 months period from 297 seventh and eighth graders. From a comparison of these two assessments, they found that students were influenced by their friends' disruptive behavior and academic achievement. Epstein (1983) conducted a similar study. She assessed the students' grade and identified their friends' grade on a year interval. She found that students' grades decreased when their friends had low grades even if the student initially had high grades. The opposite was also true that students' grades increased when their friends had high grades even if students initially had low grades. These comparison studies showed that the influence of friends with positive characteristics is as significant as the influence of friends with negative characteristics.

Although there are studies on the context of student social support networks, systematic investigations on the relationship between peer influence and adolescents' school engagement are scarce. Therefore, the current study aimed to reveal this link through longitudinal analyses and testing indirect effects of peer influence via students' motivational factors such as locus of control and academic expectation.

2. Research Method

2.1. Data

This study used public release data from the National Education Longitudinal Survey of 1988 (NELS: 88) to examine the relationship between adolescent academic engagement and individual and contextual factors. Secondary data analyses were conducted for adolescent students using the nationally representative data available through the NELS: 88 dataset. For this study, I used the NELS: 88 data collected from students at the eighth-grade base year (1988), the first follow-up (1990) when the majority of these students were high school sophomores (10^{th} grade), and the second follow-up (1992) when the majority of students were high school seniors (12^{th} grade).

The base-year study used a two-stage stratified probability design to select a national sample of eighth-grade schools and students. In the first stage, the sample of schools was stratified on the basis of school type (public/private), school location (urban, suburban, rural), and racial/ethnic composition. Private schools and schools with large minority enrollments were oversampled in this stage to assure adequate representation of subgroups in the

survey. Finally, 1,052 schools in the United States were selected from approximately 40,000 schools. In the second stage, within each school, a sample of about 24-26 eighth graders was randomly selected. Asian and Hispanic were oversampled to represent ethnically diverse population of students. Finally, 24, 599 students participated in the base year of the study. Students were asked to complete questionnaires regarding schoolwork, relationships, family, attitudes, and behaviors. Data were collected from students as well as one parent or guardian, two teachers (either English or social studies, and either mathematics or science), and one school principal per each participating student.

Follow-ups were conducted two and four years after the base year when most respondents were in the 10^{th} and 12^{th} grades, respectively. For follow-up data collection, students were selected in two stages. The original student sample was subsampled and then freshened with students who did not participate in the previous survey. Through a freshening process, students were randomly selected from participating schools and added to the sample to enable analysis of a nationally representative sample of students. Approximately 17, 000 of the base year student sample were surveyed in 1990 and in 1992, roughly 15,000 of the original student sample participated in a second follow-up data collection. The final sample of this study consisted of 13,825 students that attended 934 high schools.

2.2. Variables

Outcome Measure

The main dependent variable was student's academic engagement in the 12^{th} grade. For academic engagement, three items were used as an indicator of the students' engagement in school. These items are based on Finn's (1989) taxonomy of engagement or participatory behaviors, which measures students' actual involvement in schoolwork (such as coming to class prepared and completing assignments). The above items were answered on a four point likert scale ranging from 1(usually) to 4(never). All items were coded so that higher scores indicate a higher level of engagement.

Locus of Control

Locus of control was measured at all time points and presented as a composite score. The second year composite measure was selected for this study. Lower scores were indicative of a more external locus-of-control, whereas higher scores on the locus-of-control measure represented a more internal locus of control. The locus-of-control measures were the composite of the following locus-of-control items, each answered on a four point likert scale ranging from strongly agree to strongly disagree:

1) I don't have enough control over the direction my life is taking.
2) In my life, good luck is more important than hard work for success.
3) Every time I try to get ahead, something or somebody stops me.
4) My plans hardly ever work out, so planning makes me unhappy.
5) When I make plans, I am almost certain I can make them work (reverse coded).
6) Chance and luck are very important for what happens in my life.

Each of these six items was standardized separately by NCES to a mean of zero and a standard deviation of 1 using the appropriate questionnaire weight. All non-missing components were averaged by NCES, and any student missing all components was assigned a missing value. The reliability coefficient using Cronbach's alpha values for the NCES locus-of-control composites was F1LOCUS2= .71 (Ingles et. al., 1992).

Students' Educational Expectation

For students' educational expectation, item F1S49 was selected. This item asked how far in school the respondent thought he or she would go. This item is from the first follow-up student questionnaires. The first-year variable was coded as follows: 1 = less than high school diploma, 2 = high school graduation, 3 = trade school less than two years, 4 = trade school more than two years, 5 = less than two year college, 6 = two or more years college, 7 = finish college program, 8 = maters degree, and 9 =Ph.D. or M.D.

Peer Academic Value

Prior studies have focused more on the effects of teachers and parents than on the effect of peers on student's academic engagement (Eccles, Wigfield, & Schiefele, 1998). Given that peers constitute an important developmental context for adolescents, examining peer group influence on academic engagement will enrich our understanding on this matter. A peer-related composite was extracted from 3 items (F1S70A, B, and D) included in the first follow-up student questionnaire. The three items were, each answered from 1 (not important) to 3 (very important), as follows: Among the friends you hang out with, how important is it to…1) Attend classes regularly, 2) Study, and 3) Get good grades. The reliability coefficient using Cronbach's alpha values for this sample was .76.

Peer Academic Aspiration

For students' peer's academic expectation, item F1S70I was selected. This item asked among the friends you hang out with, how important is it to continue education past high school. This item is from the first follow-up student questionnaires.

2.3. Analytic method

Structural equation modeling (SEM) was used to assess the hypothesized structural relationships among latent variables. SEM was selected because it represents an appropriate analytic approach for dealing with issues of specifying directionality among variables of interest and generating flexibility with which to test causal relationships. SEM provides a causal model in which the relationships among the variables can be tested simultaneously without having to conduct multiple analyses. This enables us to study indirect effects (mediating variables) as well as direct effects (explanatory or independent variables) on outcome variables of interest.

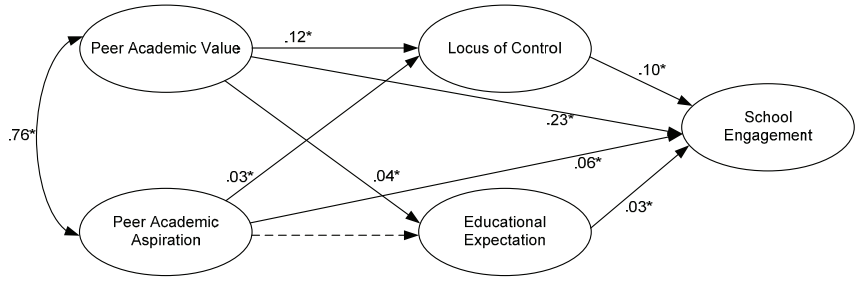
2.4. Model evaluation criteria

The most common index of fit is the chi-square fit index. Although it is widely used, it is also known for its sensitivity to sample size. Therefore the current study used non-normed fit index (NNFI; Bentler & Bonett, 1980) and root mean square error of approximation (RMSEA; Steiger & Lind, 1980), because these indexes are relatively independent of sample size. Another reason for choosing these indexes is that both indexes take into account model complexity, which is an important property for comparing several alternative models with different degrees of complexity. On the basis of simulation study, Hu and Bentler (1999) defined a "good fit" as a NNFI value above than or equal to .95 and as a RMSEA value less than or equal to .05.

2.5. Missing data

As in most longitudinal data, some subjects were unavailable during one or more data collection periods. Pairwise/listwise deletion and substitution with a sample estimate (e.g., mean, median, etc) are often used for handling missing data. However, these common methods tend to produce incorrect estimates (Schafer, 1997). In order to obtain unbiased estimates of the parameters of interest, despite the incompleteness of the data, this study employed full information maximum likelihood (FIML) estimation, available in Mplus (Muthen & Muthen, 2003) for the current analyses.

Figure 1. Final structural model with standardized solution.



Note. **p* < .05; only significant path coefficients are shown in the model.

3. Results

This study explored the process through which peers influence student academic engagement. That is, in addition to the direct effect on academic engagement, I assumed that the impact of peer influence on academic engagement scores might include indirect effects as well. Therefore, I tested the possible influences of external support (i.e., peer academic value and peer academic expectation) on students' academic engagement growth via students' motivational variables (locus of control and academic expectation). The hypothesized model showed an excellent fit with the sample data (χ^2 =89.052, *df* = 9, NNFI= .99, RMSEA=.018). Results from this study indicated that peers have an important influence on the behavior and development of adolescents (see Figure 1). Students whose friends had high academic value and high academic aspiration increased in their school engagement. Peer academic value and academic aspiration had significant direct effects on student's academic engagement. Peer academic value and academic aspiration had significant indirect effects on student's academic engagement via two mediators, with the exception the path from peer academic aspiration to school engagement via mediator academic expectation that showed no significance. Among the paths, the path from peer academic value to school engagement had the largest path coefficient, followed by the indirect path from peer academic value → locus of control → school engagement.

4. Conclusions

Results from the analyses showed that peer academic value and academic aspiration exerted significant effects on adolescents' school engagement. It also exerted a significant indirect effect on school engagement via adolescents' locus of control and academic expectation. The implications based on the results are that perceived support from peers can motivate adolescents to develop a sense of competency and autonomy, and that these self-regulatory processes positively affect their future behavior in the long term. It is possible that some adolescents, in wanting to belong or similar to their peer group, will have thoughts and behaviors in accordance with peers' values and expectations. Therefore, it is reasonable to conclude that peer influence may substantially affect students' academic outcomes.

Understanding the importance of peer influence in relation to student engagement is relevant in that the child's acceptance within the peer group is one of the key measures of positive school experiences. Adolescents may be influenced by their friends' attitudes, behaviors, or other characteristics and as this study discussed, that influence has significant effects on the behavior and development of adolescents. Perceived support from peers can give students a sense of motivation and help students see the importance of pursuing academic success. Previous research asserted that peers influenced adolescents' motivation and school adjustment (Berndt and Keefe, 1999; Gilman, Meyers & Perez, 2004) and that general conclusion is similar to the findings from this study. The information from this study may be useful for designing academic intervention programs. For example, programs intended to help change students' maladaptive orientation toward school involvement and learning may benefit from considering the role of peers and adolescents' perception of their peers in shaping educational experiences.

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