Friends, academic achievement, and school engagement during adolescence: A social network approach to peer influence and selection effects

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ABSTRACT

Peers become increasingly important socializing agents for academic behaviors and attitudes during adolescence. This study investigated peer influence and selection effects on adolescents' emotional (i.e., flow in schoolwork, school burnout, school value), cognitive (i.e., school effort), and behavioral (i.e., truancy) engagement in school. A social network approach was used to examine students of post-comprehensive education in Finland ($N = 1419$; mean age = 16). Students were asked to nominate peers to generate peer networks and to describe their own school engagement at two time points (one year apart). Network analyses revealed that the degree to which peer influence and selection effects occurred varied by dimension of school engagement. Over time, peers influenced students' emotional, cognitive, and behavioral engagement. Similarity in behavioral engagement, but not in emotional and cognitive engagement, increased the likelihood of forming new peer relationships. Additionally, some of the peer influence and selection effects on school engagement were moderated by student academic achievement.

1. Introduction

Active engagement in school promotes the skills, knowledge, values, and social capital needed for adolescents to make a successful transition into adulthood (Wang & Holcombe, 2010). Behavioral and psychological engagement creates a motivational context that shapes how adolescents cope with both academic and social difficulties and setbacks in school (Skinner, Kindermann, Connell, & Wellborn, 2009). Engaged youth are more likely to persist and re-engage with challenging school tasks. On the other hand, disengaged youth have greater difficulty coping with school problems, leading to devaluation of their academic success and further disengagement from school (Skinner & Pitzer, 2012; Wang & Fredricks, 2014). Youth who disengage may also struggle to find a meaningful connection with school and are more susceptible to developing behavioral problems that further interfere with their schooling (Skinner, Kindermann, & Furrer, 2009; Stewart, 2003). Consequently, enhancing school engagement has been identified as a prime catalyst for boosting academic achievement and reducing dropout rates among adolescents (Fredricks, Blumenfeld, & Paris, 2004; Wang & Eccles, 2012). As developmental research indicates a significant decline in student engagement during adolescence (Fredricks

et al., 2004; Wang & Degol, 2014), understanding the contextual factors that promote or undermine student engagement in school is critical for prevention and intervention efforts targeting poor academic achievement and retention.

During adolescence, as youth spend greater amounts of time with their peers, the norms and characteristics of peer networks become increasingly important socializing agents (Ryan, 2000). The academic norms of a peer group, therefore, may be immensely influential over each individual member's own academic engagement, beliefs, and achievement (Laninga-Wijnen, Ryan, Harakeh, Shih, & Vollebergh, 2017; Rodkin & Ryan, 2012). Although researchers generally agree that adolescents within the same peer networks tend to be similar across a range of academic and behavioral outcomes (Li, Lynch, Kalvin, Liu, & Lerner, 2011; Rambaran et al., 2017), most extant studies focus on student academic achievement and disruptive behaviors. For example, a growing body of studies found that students seek out friends who are similar to themselves in regard to academic achievement and school attendance, and students are also influenced by their friends' disruptive behaviors, academic achievement, and school attendance (Flashman, 2012; Gremmen, Dijkstra, Steglich, & Veenstra, 2017; Rambaran et al., 2017). However, research of peer network effects on school

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engagement remains relatively scarce and limited in scope. Many studies have neglected to examine the underlying processes that reinforce peer similarity in academic engagement. This peer similarity may arise from youth selecting peers with similar academic values and behaviors and/or from youth conforming to be more like their peers over time. In the interest of combatting declines in student engagement during secondary school, it is important to distinguish whether peer similarities in student engagement are attributed to youth adjusting their behavior to become more comparable to their peers over time (i.e., influence effects), or actively choosing peer affiliates based on similarities in their own academic behaviors and beliefs (i.e., selection effects). This distinction between influence and selection effects is especially relevant since most peer network studies do not examine academic engagement as a multidimensional construct with behavioral, emotional, and cognitive components (Fredricks et al., 2004; Wang, Fredricks, Ye, Hofkens, & Linn, 2017). By parsing out these effects, we will have a better understanding of the positive and negative influences peers have over youth academic engagement.

The present study was carried out in the context of the Finnish educational system. The transition from basic education into either an academic track (i.e., general upper secondary education) or a vocational track (i.e., upper secondary vocational education) is a key educational transition in the Finnish educational system. Comprehensive schools are frequently referred to as 'neighborhood' schools, in which students spend most of their school day with one set of peers and teachers. However, in Finland, when basic compulsory education ends, students may attend upper secondary school by applying to several different programs (e.g., academic track or vocational track). As a result, adolescents' school-based peer relationships are largely reformed during this educational transition (Salmela-Aro, Kiuru, & Nurmi, 2008), as few students will attend the same secondary school as their peers from basic/elementary school (see also Goodwin, Mrug, Borch, & Cillessen, 2012; Hardy, Bukowski, & Sippola, 2002). Since the educational transition from comprehensive to secondary school immerses Finnish students in an entirely new learning environment with a different set of experiences, expectations, and peers, the transition may pose a challenge for many students to feel connected or engaged with their new school (Salmela-Aro et al., 2008; Wang & Degol, 2016).

In this study, we highlight the role of peers in shaping academic engagement after the transition from basic education to upper secondary education by examining (a) the relative roles of peer influence and selection processes on the development of behavioral, emotional, and cognitive dimensions of school engagement and (b) how the effects of peer influence and selection vary by individual differences in academic achievement.

1.1. The multidimensionality of school engagement

According to theoretical frameworks on the development of academic engagement, schools are powerful motivational learning contexts characterized by multiple developmental processes that have the capacity to either hinder or support the academic engagement of individual students (Skinner & Pitzer, 2012; Wang et al., 2017). Positive experiences in schools are likely to enhance adolescents' engagement, transforming them into academically capable, socially integrated, and committed learners (Fredricks et al., 2004; Wang & Degol, 2014). Thus, engagement results from an interaction between each individual student and his or her context, making student engagement highly responsive to variations in classroom and peer characteristics (Eccles, 2009). Engagement can also be conceptualized as a personal asset that helps adolescents adaptively cope with daily stressors, challenges, and setbacks in school (Skinner & Pitzer, 2012). Understandably, failure to cope with difficulties and challenges in school generates distress in adolescents. As a coping strategy for managing distress and perceived alienation in school, adolescents may turn to risky behaviors and may seek out like-minded deviant peers to associate with (Crosnoe, 2002).

School engagement, in particular, is defined as an energized action or psychological state (both observable and unobservable) that is deliberate, directed, and sustained over time to positively support student interactions with learning activities (Skinner & Pitzer, 2012). School engagement can be further broken down into behavioral, emotional, and cognitive components (Fredricks et al., 2004). Behavioral engagement refers to a student's active participation in academic learning and the absence of behavioral misconduct. Indicators of behavioral engagement, therefore, are largely observable phenomena (e.g., raising hand to answer question; following classroom rules). On the other hand, a student's affective reactions, such as enjoyment and valuing of school are indicators of emotional engagement, which largely manifest as unobservable psychological processes. Similarly, cognitive engagement encompasses a number of unobservable internal driving mechanisms, such as willingness to exert effort in learning and a desire to go beyond minimum course requirements to enhance learning comprehension.

These three dimensions of school engagement are dynamically embedded within the individual, and each represents a unique developmental process for adolescents. Researchers have highlighted the importance of distinguishing these three dimensions of engagement, as they are not only differentially predictive of academic outcomes, but are also likely to be uniquely shaped by peer characteristics (Fredricks et al., 2004; Wang & Eccles, 2012; Wang, Fredricks, Ye, Hofkens, & Schall, 2017). Failure to examine the multidimensionality of school engagement may undermine our ability to identify how much influence peers have over an individual's academic engagement during secondary school. Furthermore, approaching school engagement as a multifaceted construct allows a deeper understanding of each dimension's predictors and consequences, thus suggesting that the design of targeted interventions should be multifaceted as well.

1.2. Peer influence and selection in student engagement

Adolescence is a developmental period characterized by the desire to "fit in" with peers (Hamm, Farmer, Lambert, & Gravelle, 2014). In an effort to fit in, youth may begin to adopt the academic values and behaviors of their peers to avoid the embarrassment and rejection that frequently accompany nonconformity to peer norms. As such, adolescents often find themselves spending time with peers who possess similar beliefs and behaviors (e.g., Kindermann, 2007; Parker et al., 2015; Rambaran et al., 2017). For example, research has shown that peer groups often exhibit similar levels of deviant behavior, and that frequent contact with or aggregation of deviant peers into the same settings may exacerbate the deviant behaviors of individual members (Denault & Poulin, 2012; Keijsers et al., 2012). In addition, frequent association with deviant peers via processes such as educational tracking or intervention programs aimed at reducing problem behaviors, often leads to increases in deviant behaviors among individual group members (Dodge, Dishion, & Lansford, 2006; Li et al., 2011). Likewise, peer groups also possess similar academic behaviors and aspirations. Research on academic socialization indicates that youth are more likely to seek out peers with similar academic achievement, and that these peer affiliations also influence achievement over time (Gremmen et al., 2017; Laninga-Wijnen et al., 2017). Friendship networks have also been found to influence both academic motivation and achievement among adolescents (Blansky et al., 2013; Molloy, Gest, & Rulison, 2011).

When looking across the body of research on adolescent peer effects, it becomes clear that two processes may explain how peers achieve high similarity in academic behaviors and values: (a) peer influence and (b) peer selection (Brechwald & Prinstein, 2011; McPherson, Smith-Lovin, & Cook, 2001). The process of *peer influence* occurs when peers exert influence on students' academic attitudes and behaviors across time, resulting in increased similarity among peers (Delay, Laursen, Kiuru, Salmela-Aro, & Nurmi, 2013). *Peer selection*, on the other hand, occurs