Student Engagement, Context, and Adjustment:
Addressing Definitional, Measurement, and Methodological Issues

Abstract

The goal of this special issue is to examine relationships among context, student engagement, and adjustment. We begin by describing the reasons for the increased popularity of student engagement in research, policy, and practice, and then describe how researchers in the field define and study this construct. Next, we outline some of the issues and challenges around the definitions, measurement, and analytic techniques that have been used in prior research. Finally, we provide a short overview of the papers in this special issue highlighting their theoretical frameworks, methodologies, and analytical techniques by which many of the challenges outlined in this introduction are addressed. The overall findings of these papers come from samples in Finland, Korea, and the United States.

Key Words: Student Engagement, Measurement, Context, Motivation

Over the past two decades, there has been an explosion of research on student engagement because of its potential in addressing persistent educational problems such as low achievement, high dropout rates, and high rates of student boredom and alienation (Chapman, Laird, Ifill, & KewalRamani, 2011; Fredricks, 2015). Engagement has been studied in different nested contexts (e.g., prosocial institutions, schools, classrooms, and learning activities) (Skinner & Pitzer, 2012) and time frames (moment to moment to longer-term engagement). Although conceptualizations of engagement vary across studies, most scholars assume that engagement and motivation are related, but distinct constructs (Christenson, Reschly, & Wylie, 2012; Filsecker & Kerres, 2014; Martin, 2012; Wang & Degol, 2014). In addition, in most studies, engagement and disengagement are viewed and measured on a single continuum, with lower levels of engagement indicating disengagement. However, some researchers have begun to view engagement and disengagement as separate and distinct constructs that are associated with different learning outcomes (Skinner, Furrer, Marchand, & Kindermann, 2008; Wang, Chow, Hofkens, & Salmela-Aro, 2015).

There are several reasons for the increased popularity of engagement in research, policy, and practice. First, engagement is a key contributor of learning and academic success. A growing body of research has linked student engagement to higher grades, achievement test scores, and school completion rates (Fredricks, Blumefeld, & Paris, 2004; Wang & Holcombe, 2010; Wang & Fredricks, 2014). Student engagement also has protective benefits in terms of lower rates of delinquency, substance use, and depression (Wang & Fredricks, 2014; Li & Lerner, 2011). Second, engagement has appeal because it is a “meta-construct” that includes observable behaviors, internal cognitions, and emotions (Fredricks et al., 2004). Third, engagement and disengagement are easily understood by and salient to practitioners, with many teachers

reporting student disengagement as the biggest challenge they face in their classrooms (Fredricks, 2014).

Finally, engagement is appealing because there is evidence that it is malleable and responsive to changes in teachers' and schools' practices. As a result, engagement holds tremendous potential as a key target for interventions and is an explicit goal of many school improvement efforts, especially at the secondary level (Appleton, Christenson, & Furlong, 2008; National Research Council & Institute of Medicine, 2004). For example, research shows that engagement is higher in classrooms where students have developed strong relationships with their teachers and peers; where teachers support students' autonomy; where teachers hold high expectations and give consistent and clear feedback; and where tasks are variable, challenging, interesting, and meaningful (Fredricks, 2011). Additionally, research has shown how school-level factors like size of school, disciplinary practices, opportunities for participation in extracurricular activities, and school culture influence student engagement (Fredricks et al., 2004; Lawson & Lawson, 2013).

Research on engagement has grown out of a variety of different theoretical traditions. Some scholars have used motivational theories such as self-determination, self-regulation, flow, goal theory, and expectancy-value to examine links between contextual factors, patterns of engagement, and adjustment. Other scholars have used school identification, school connection, and life course theories to explain the role of engagement in the process of dropout and school completion (Fredricks, 2014). The diversity of theoretical traditions guiding this work has led to a fragmented literature, where scholars have tended to select measures from prior research without questioning the theoretical framework and construct definition (Sinatra, Heddy, & Lombardi, 2014). This has made it difficult to compare findings across studies and examine how

engagement is similar and different than these other bodies of literature (Christenson, Reschly, & Wylie, 2012).

Although there has been large variation in how engagement has been defined and studied, there is some agreement that engagement is a multidimensional construct. The most prevalent conceptualization in the literature is that engagement consists of three distinct, yet interrelated dimensions – behavioral, emotional/affective, and cognitive engagement (Fredricks et al., 2004). Behavioral engagement has been defined in terms of participation, effort, attention, persistence, positive conduct, and the absence of disruptive behavior (Connell, 1990; Finn, 1989; Finn & Rock, 1997). Emotional engagement focuses on the extent of positive (and negative) reactions to teachers, classmates, academics, or school; individuals' sense of belonging; and identification with school or subject domains (Finn, 1989; Voelkl, 1997). Cognitive engagement is defined in terms of self-regulated learning, using deep learning strategies, and exerting the necessary effort for comprehension of complex ideas (Fredricks et al., 2004; Pintrich & DeGroot, 1990; Zimmerman, 1990).

More recently others have proposed additional dimensions of engagement. For example, Linnenbrink-Garcia, Rogat, and Koskey (2011) expanded on this tripartite conceptualization of engagement to include a social-behavioral dimension of engagement, relating to students affect and behavior during collaborative group work. Additionally, Reeve and Tseng (2011) proposed agentic engagement as an additional dimension to address how students proactively contribute to the instruction teachers provide. More recently, Filsecker & Kerres (2014) suggested volitional engagement to theoretically justify engagement as “energy in action”. Further research is necessary to determine the extent to which these are unique dimensions of engagement.

One problem with engagement as a broad construct is that it has resulted in considerable

variability in definitions both within and across different types of engagement. In other words, one author's conceptualization of behavioral engagement can be and often is the same as another author's operationalization of cognitive engagement (Christenson et al., 2012). Defining it broadly has also increased the overlap of engagement with other motivational and cognitive constructs, making the unique contribution of engagement less clear (Fredricks et al., 2004; Eccles & Wang, 2012). One concern is that by defining engagement so broadly the field runs the risk of explaining almost everything related to students' experiences in school, and as a result not really explaining anything at all. Researchers need to be clearer about how they are defining engagement, at which level they are measuring, and the "value added" from studying engagement as opposed to these earlier literatures (Fredricks et al., 2004). Greater definitional clarity is critical for making more informed predictions about the relations between contextual factors, engagement, and learning outcomes, as well as designing more effective interventions to increase engagement (Eccles & Wang, 2012).

In addition to definitional clarity, there are challenges with measurement and statistical methodologies. The most common method of assessing engagement is self-reports. In a recent review of self-report measures, Fredricks and McColskey (2012) found few valid and psychometrically sound measures of student engagement that incorporate a multidimensional construct. Moreover, items in these instruments were used inconsistently across behavioral, emotional/affective, and cognitive engagement scales, making it difficult to compare findings across studies. In order to measure engagement on multiple levels (i.e., school, class, and learning activities), it is important to incorporate additional quantitative and qualitative methodologies that allow researchers to measure longer-term engagement and variations across activities, as well as engagement in both individual and group contexts.

Although most theories assume a reciprocal relation between context and engagement, our current understanding is largely based on cross-sectional and short-term longitudinal studies that have investigated unilateral influences (Fredricks, 2015). This research tends to be interpreted as context influencing engagement, neglecting the fact that adults and peers also respond differently to children depending on their level of engagement and disruptive behavior (Kindermann, 2007; Skinner & Pitzer, 2012). Another concern is that the majority of research has been based on variable-oriented techniques that examine overall relations between engagement, predictors, and outcome variables. This analytic technique provides insights into relations for “average” students across an “average set of features”, but can conceal relations for different subpopulations of students (Lawson & Lawson, 2013; Lawson & Masyn, 2015). Person-oriented techniques can be used to describe patterns of individuals’ engagement within and across time, which is critical for research, practice, and policy with discrete subpopulations of students (Eccles & Wang, 2012).

This special issue includes papers from scholars in the United States, Finland, and Korea that approach the study of engagement through different theoretical frameworks, methodological approaches, and analytic techniques. Each author was asked to outline his or her working definition of engagement, methods for capturing engagement, and to reflect on how the choice of methods may inform a theory of engagement. Our hope is that greater specificity about how engagement is defined and measured and the theoretical framework guiding this work will lead to less fragmentation and allow us to begin the work of synthesis. This will lead to greater clarity in the field about what engagement is and how it is different than other constructs and make it easier to compare findings about the relations between context, engagement, and adjustment.

These papers measure engagement at both individual and group levels and apply different analytic techniques that allow researchers to examine sub-populations, developmental relations,

and reciprocal relationships. These studies use a variety of cutting edge methodological techniques to measure engagement and contextual factors, such as the use of experience sampling methods to capture moment to moment engagement, the use of observational techniques to collect data on collaborative engagement, the use of person-oriented approaches to determine engagement profiles, the use of confirmatory factor analysis to test a bifactor model of engagement, and the use of longitudinal multi-level structural equation modeling to test bidirectional relations between context and engagement. In addition, a newly developed and validated measure of math and science engagement and a new observational measure of the learning environment are presented. Together these studies contribute to our understanding of differences in the meaning, structure, and consequences of engagement and disengagement; the features of the learning environment that influence student engagement; the extent to which students' engagement and teacher practices support each other; and the emergence of collaborative engagement in group activities.

The first two articles address gaps in the literature related to measurement. In the first article, Fredricks and her colleagues present results from in-depth interviews with middle and high school students and teachers about their conceptualizations of math and science engagement and disengagement. The qualitative analysis of these interviews provides a more detailed and nuanced picture of engagement than has been outlined in the academic literature. Results show both large commonalities in students' and teachers' perceptions of math and science engagement and some differences between subject matters (e.g., paying attention and focusing in math classes versus sharing ideas and building knowledge with others in science classes). Next, the authors describe how they used the qualitative information from these teacher and student interviews to develop a new self-report survey measure of math and science engagement.

In the next article, Wang and his colleagues present psychometric results from these newly developed measure of student math and science engagement. In a large sample of middle and high school students, they test the psychometric properties of the math and science engagement scales. Results show that engagement is a multidimensional construct, whose dimensions (i.e., behavioral, emotional, cognitive and social engagement) are also differentially predictive of academic achievement and educational aspirations.

Next, Jang and her colleagues use self-determination theory as a framework to test a dual-process mediational model of the relation between teacher practices and student engagement and disengagement. Specifically, using multilevel structural equation modeling, they investigate how teachers' autonomy-supportive and controlling practices shape students' engagement and disengagement, and in turn, how students' engagement and disengagement levels shape teachers' motivating styles. Results show that students are generally influencing teachers more than teachers are influencing students and that the associations are stronger for negative interactions.

The next article by Järvelä and her colleagues examines engagement in collaborative groups. Specifically, they investigate the role of individual and group level self-regulatory processes for successful engagement in collaborative mathematics tasks. They provide a theoretical overview of collaborative engagement from a socially shared self-regulated learning perspective. Results of an observational study of 44 teacher-education students working in groups as part of a seven-week didactic math course are then presented. Differences in collaborative engagement by phases of self-regulated learning (i.e., forethought, performance, reflection) and type of learning task (student-led, teacher-led) are discussed.

Shernoff and his colleagues identify theoretically and empirically supported features of the learning environment expected to influence student engagement. These dimensions of the learning environment are assessed with a newly developed observational measure called the *Optimal Learning Environment – Observational Log and Assessment* (OLE-OLA). Student engagement was conceptualized using flow theory and measured by experience sampling techniques. Ratings of environmental complexity (i.e., environmental challenge and environmental supports) are used to predict student engagement. Results show a significant variation in both engagement and the quality of experience across different instructional episodes. After controlling for background variables, only the environmental support was positively associated with student engagement, whereas the environmental challenge was not.

Finally, Salmela-Aro and her colleagues examine emotional engagement and disengagement (i.e., burnout) in two samples from the United States and Finland using both survey and experiencing sampling methodologies (ESM). They use variable-oriented approaches to examine relations between survey measures of engagement and disengagement (i.e., burnout) and in-the-moment measures of situational resources, demands, and emotional engagement collected from ESM. Additionally, person-oriented approaches are used to describe subgroups of individuals with different profiles of engagement and burnout. Results show four profiles in both countries, but with different prevalence: engaged, burned-out, cynical toward school, and simultaneously engaged and burnout. The authors pointed out that engagement not always is a positive experience and found a group of students that were both highly emotionally engaged and disengaged (i.e., burnout).

The special issue concludes with commentaries by Eccles and Boekaerts, two of the leading scholars on motivation, self-regulation, and engagement. These commentaries explore

key themes that cut across the papers, outline shortcomings of these studies, and highlight implications for future research in the field. Eccles' also provides a historical context to the work on engagement and lays out the arguments for a renewed focus on the theoretical underpinnings of engagement. Finally, Boekearts outlines three key issues that need to be addressed in future research on engagement including: 1) examining the degree of overlap between engagement and self-regulated learning, 2) taking into account goals when studying engagement, and 3) addressing the way that affect influences engagement.

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