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Teacher Leadership and Intellectual Stimulation: Improving Students' Approaches to Studying through Intrinsic Motivation

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Teachers provide leadership in college classrooms, and the behaviors they exhibit as leaders impact a variety of student outcomes (Bolkan & Goodboy, 2009, 2010; Pounder, 2008). Specifically, transformational leadership (Bass, 1985) has been shown to be an important predictor of student learning (Bolkan & Goodboy, 2009). This study examined a specific component of transformational leadership to investigate how communicating intellectual stimulation transforms the nature of the classroom by encouraging student motivation and, subsequently, students' approaches to their studying. Results suggest that when teachers influence students' intrinsic motivation through the use of intellectually stimulating behaviors, students approach their learning in deep and strategic ways, and are less likely to adopt a surface-level approach to their studies.

Keywords: Intellectual Stimulation; Intrinsic Motivation; Leadership; Studying

Teachers provide leadership in college classrooms, and the behaviors they exhibit as leaders impact a variety of student outcomes (e.g., Bolkan & Goodboy, 2009, 2010; Pounder, 2003, 2006, 2008; Walumbwa, Wu, & Ojode, 2004). Teacher leadership has garnered support in the literature from a variety of sources, and it has recently

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been explored by communication scholars as it relates to a specific type of classroom management style known as *transformational leadership* (see Bolkan & Goodboy, 2010, in press). Based on work by Burns (1978), transformational leadership is defined as a constellation of three behaviors including the ability of leaders to inspire followers (known as *charismatic leadership*), work with subordinates individually to meet their idiosyncratic needs (known as *individualized consideration*) (Bass, 1985), and encourage creative and effortful problem solving (known as *intellectual stimulation*) (Seltzer & Bass, 1990). Transformational leadership focuses on moving ''followers to accomplish more than what is usually expected of them'' (Northouse, 2010, p. 171), and building intrinsic motivation in subordinates (Bass & Riggio, 2006).

Transformational leadership has been applied to the context of a college learning environment because teachers, much like organizational leaders, can transform the nature of the classroom. In a classroom setting, transformational leadership has been shown to correlate with traditional learning outcomes including cognitive learning, affective learning, state motivation, communication satisfaction, student participation, and student perceptions of instructor credibility (Bolkan & Goodboy, 2009). Transformational leadership has also been linked to other instructional outcomes including extra effort and perceived instructor effectiveness (Pounder, 2008).

Although various measures of transformational leadership exist, for some time scholars have failed to identify the specific behaviors students perceive as being transformational in the context of a college classroom. To rectify this shortcoming, Bolkan and Goodboy (2010) conducted an investigation with the aim of creating behavioral measures of transformational leadership for a college context. Based on findings from an initial study (Bolkan & Goodboy, in press), the authors concluded that, although several measures existed for many of the behaviors students perceived as being charismatic and as indicating individualized consideration, a measure of intellectual stimulation was missing from the literature.

To address this shortcoming, Bolkan and Goodboy (2010) developed a valid and reliable scale that measured the behavioral indicators of intellectual stimulation (i.e., using an interactive teaching style, challenging students, and encouraging independent thought). Importantly, results from their study suggest that teachers who promote intellectual stimulation empower students and promote both cognitive and affective learning. However, the study of intellectual stimulation is in its infancy; and, to date, scant research has been conducted on its influence in the classroom. Specifically, although Bolkan and Goodboy (2010) demonstrated that intellectual stimulation has the ability to influence student learning, scholars have yet to determine the mechanisms that operate to promote this result.

Rationale

One of the reasons intellectual stimulation results in enhanced learning outcomes may be due to transformational leadership's association with intrinsic motivation. Transformational leadership has been linked to intrinsic motivation in subordinates both theoretically (Bass, 1985; Bass & Riggio, 2006) and empirically (Piccolo & Colquitt,

2006; Shin & Zhou, 2003), and studies suggest that the impact of transformational leadership on intrinsic motivation leads to positive organizational outcomes including task performance, organizational citizenship behaviors (Piccolo & Colquitt, 2006), and follower creativity (Shin & Zhou, 2003). Considering that transformational leadership has been linked to positive outcomes in organizations by way of intrinsic motivation, it may be the case that transformational leadership has the ability to foster intrinsic motivation and, as a result, positive learning outcomes in the classroom as well.

According to Deci and Ryan (2000), intrinsically motivated behaviors are defined as actions that do not require external reinforcements and are a function of basic psychological needs. Generally, the authors assert that ''intrinsic motivation concerns active engagement with tasks that people find interesting and that, in turn, promote growth'' (p. 233). As it pertains to classroom learning, ''intrinsic motivation is derived from factors that are inherent in task completion'' (Wolters, 1998, p. 226), and is related to students' interest, value of the material, and perceptions of mastery (compared to extrinsic motivation, which is related to teacher praise, grades, or competition). Of course, motivation is not a new construct, it has received ample attention from instructional communication scholars (for a review, see Millette & Gorham, 2002). Similar constructs in the instructional literature have been conceptualized and operationalized as student interest (Weber, Martin, & Cayanus, 2005; Weber & Patterson, 2000) and learner empowerment (Frymier, Shulman, & Houser, 1996; Houser & Frymier, 2009). Gorham and Christophel (1992) and Gorham and Millette (1997) revealed numerous motivators/de-motivators for college students including context motivators (e.g., grades/credit), structure/format motivators (e.g., course design), and teacher behavior motivators (e.g., teacher competence). Indeed, much of what instructors say or do in the classroom influences student motivation (for a review, see Waldeck, Plax, & Kearney, 2010) including teacher immediacy (Christophel, 1990), teacher power use (Richmond, 1990), and teacher confirmation (Goodboy & Myers, 2008). According to the literature in instructional communication, intrinsic motivation is specifically fostered through a teacher's communicative style (Noels, Clement, & Pelletier, 1999); and, as Millette and Gorham noted, ''changes in behavior are most productive and lasting when intrinsic motivation is tapped and students become, in the best sense, self-motivated'' (p. 144).

Intrinsic motivation in education is important because the classroom environment is a context where motivational orientation plays a salient role in performance outcomes (Harter, 1981). For example, after reviewing the literature, Wolters (1998) concluded that students who are intrinsically motivated persist in their tasks longer and are more deeply engaged with their studies than those who are not, and that students who use intrinsic regulation strategies are more likely to use critical thinking. Furthermore, the goal of mastering a task for self-improvement (an idea similar to intrinsic motivation) has been related to deep-processing cognitive learning strategies and self-regulation strategies (e.g., self-testing while reading and monitoring one's understanding of class lectures) (Pintrich, 1999). Finally, intrinsic motivation has been linked to cognitive engagement and classroom performance by way of self-regulation

and the use of adaptive strategies for studying (e.g., elaborating on class material and organizing class notes) (Pintrich & De Groot, 1990).

The studies cited earlier suggest that intellectual stimulation is linked to intrinsic motivation, and that intrinsic motivation has the potential to influence students' use of effective studying behaviors. Of interest to this investigation is how intrinsic motivation influences three specific studying behaviors: a deep approach, a surface approach, and a strategic approach (Duff, 2003). The deep, surface, and strategic approaches to studying are associated with germinal research on student learning conducted by Entwistle, Hanley, and Hounsell (1979), and reflect students' basic approaches to their schoolwork. Students who study using a deep approach look "for meaning in the matter being studied" and relate it "to other experiences and ideas with a critical approach," whereas students who study using a surface approach rely on "rote-learning and memorization in isolation to other ideas" (Duff, 2004, p. 57). Students who study strategically do so in organized and effortful ways, and "optimize success . . . through effective use of space and time" (Mattick, Dennis, & Bligh, 2004, p. 535). Understanding how students approach their studying is important because research has demonstrated that a deep approach to learning is associated with "higher quality learning outcomes" (Prosser & Trigwell, 1999, p. 12) when compared to the surface approach, and that general academic performance tends to be positively associated with deep and strategic approaches (which are generally correlated with one another) to studying and negatively associated with a surface approach to studying (Duff, 2003).

As mentioned earlier, the things teachers do in the classroom have been found to influence students' motivational orientations (Noels et al., 1999). Therefore, motivational orientation should be viewed as specific to a student's circumstances and changeable based on situational exigencies, including teaching style (e.g., Harter, 1981; Pintrich, 1999). Thus, based on the theoretical assumptions of transformational leadership, it seems possible that teachers who engage in intellectually stimulating behaviors may have the ability to foster intrinsic motivation in students. Furthermore, based on the findings from studies investigating intrinsic motivation and student learning, intrinsic motivation may, in turn, influence the behaviors students engage in to promote learning. Consequently, the aim of this study was to investigate how teachers' use of intellectual stimulation influences student motivation and, subsequently, students' approaches to their studying.

Although the theoretical relationship exists, intellectual stimulation has yet to be investigated as it relates to intrinsic motivation in a classroom environment. To examine this relationship, the following hypothesis is offered:

> H1:   Student perceptions of their teachers' intellectual stimulation (using an interactive teaching style, challenging students, and encouraging independent thought) will be positively associated with intrinsic motivation.

Moreover, although several researchers have documented the relationship between intrinsic motivation and approaches to learning and studying, of interest to this study is the way that intrinsic motivation mediates the relationship between intellectual

stimulation and student approaches to studying. To examine this relationship, the following hypothesis is offered:

> H2: *Intrinsic motivation will mediate the relationship between intellectual stimulation and student approaches to studying (deep, strategic, and surface).*

Method

Participants and Procedures

Participants were 268 undergraduate students recruited from a large Northeastern and a large Southwestern university, and were given extra credit in return for their participation. Participants were 130 men and 137 women (one unreported), ranging in age from 18 to 44 ($M = 20.23$, $SD = 2.68$). Participants responded to the survey items as they related to the teacher they had previous to the time of data collection (Plax, Kearney, McCroskey, & Richmond, 1986), and were asked to report their sentiments as they related to the measures described below.

Instrumentation

Student intellectual stimulation was measured using a 10-item scale developed by Bolkan and Goodboy (2010). The scale is segregated into three constructs that reflect teacher behaviors including using an interactive teaching style (four items: e.g., "uses exciting teaching techniques in class," and "helps students get excited about learning through classroom activities"), challenging students (three items: e.g., "challenges me to be the best student I can be," and "makes me work hard to ensure that I really know the material well"), and encouraging independent thought (three items: e.g., "helps me think deeply about the concepts taught in class," and "encourages me to come to my own conclusions about course material"). Responses ranged from 1 (*never*) to 7 (*always*). The alpha reliabilities of this scale are as follows: interactive teaching style, $\alpha = .93$ ($M = 3.59$, $SD = 1.56$); challenging students, $\alpha = .90$ ($M = 3.99$, $SD = 1.66$); and encouraging independent thought, $\alpha = .87$ ($M = 4.31$, $SD = 1.63$). Previous reliabilities for this scale have been .92, .88, and .85, respectively (Bolkan & Goodboy, 2010).

Students' studying habits were measured using the Approaches to Learning and Studying portion of the Shortened Experiences of Teaching and Learning Questionnaire (Economic and Social Research Council, 2005). This measure consists of three constructs assessing students' approaches to studying, including a deep approach (nine items: e.g., "Ideas I've come cross in my academic reading often set off long chains of thought," and "In making sense of new ideas, I have often related them to practical or real life contexts"); a surface approach (four items: e.g., "I've tended to take what we've been taught at face value without questioning it much," and "I've just been going through the motions of studying without seeing where I'm going"); and an organized, effortful (i.e., strategic) approach (four items: e.g., "I have generally put a lot of effort into my studying," and "On the whole, I've been quite systematic and organized in my studying"). Responses ranged from 1 (*rarely true*) to 5 (*usually true*). The alpha reliabilities of this scale are as follows: deep approach,

$\alpha = .83$ ($M = 3.12$, $SD = 0.78$); surface approach, $\alpha = .56$ ($M = 2.65$, $SD = 0.77$); and strategic approach, $\alpha = .73$ ($M = 3.22$, $SD = 0.88$). Previous reliabilities for these scales have been .75, .67, and .75, respectively (Economic and Social Research Council, 2005).

Intrinsic motivation was measured using the intrinsic goal orientation subscale of the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991). This measure consists of four items (e.g., ''In this class, I prefer course material that really challenges me so I can learn new things,'' and ''The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible''), with responses ranging from 1 (*not at all true of me*) to 7 (*very true of me*). The alpha reliability of this scale was .84 ($M = 4.35$, $SD = 1.43$). Previous reliability for this scale has been .74 (Pintrich et al., 1991).

Results

To examine our results, we conducted a path analysis with maximum likelihood estimation using LISREL 8.8 (Jöreskog & Sörbom, 2007). We first analyzed how well the data fit our predicted model (see Figure 1).[1] Results indicated that the data did not fit the model: $\chi^2(11, N = 268) = 48.43$, $p < .01$; normed chi-square (NC) $= 4.40$, comparative fit index (CFI) $= .96$, standardized root mean square residual (SRMR) $= .90$, and root mean square error of approximation (RMSEA) $= .11$. The standardized residuals and the modification indexes indicated the desirability of an additional path between encouraging independent thought and a deep approach to studying. After adding this path, we conducted a second analysis. Results indicated that the data fit the proposed model reasonably well: $\chi^2(10, N = 268) = 33.32$, $p < .01$; NC $= 3.33$, CFI $= .97$, SRMR $= .07$, RMSEA $= .09$. *Hypothesis 1* was supported: Intellectual stimulation was positively related to intrinsic motivation. *Hypothesis 2* was partially supported: Intrinsic motivation partially mediated the relationship between intellectual stimulation and students' approaches to studying (see Figure 2). Correlations between variables are available in Table 1.
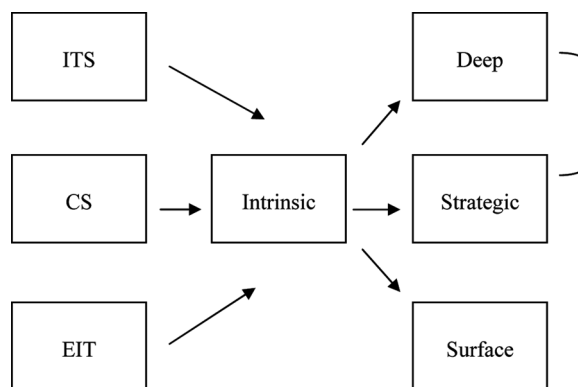

Figure 1 Structural Equation Model: Predicted Solution. *Note.* ITS = interactive teaching style; CS = challenging students; EIT = encouraging independent thought.
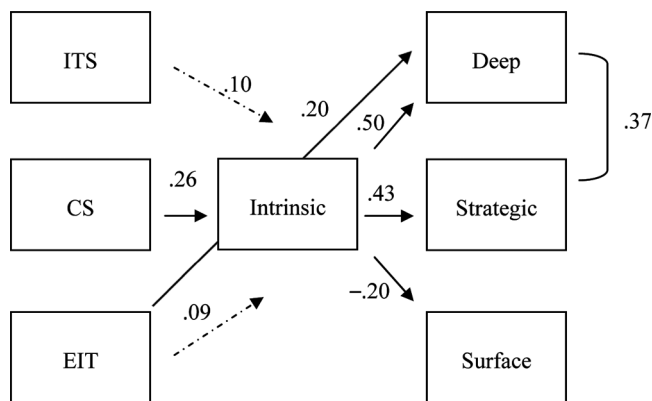
Figure 2 Structural Equation Model: Standardized Solution. *Note.* ITS = interactive teaching style; CS = challenging students; EIT = encouraging independent thought. Correlations between the components of intellectual stimulation are as follows: ITS – CS = .66, CS – EIT = .76, and ITS – EIT = .65. Broken lines represent nonsignificant paths. Except nonsignificant paths, all relationships are significant at $p < .01$. Intrinsic ($R^2 = .17$), deep ($R^2 = .36$), strategic ($R^2 = .18$), and surface ($R^2 = .04$).

Table 1 Correlations Between Variables

	1. Intrinsic	2. ITS	3. CS	4. EIT	5. Deep	6. Surface	7. Strategic
2.	.33*						
3.	.39*	.66*					
4.	.35*	.66*	.76*				
5.	.57*	.27*	.40*	.41*			
6.	−.20*	−.23*	−.24*	−.29*	−.10		
7.	.43*	.31*	.31*	.23*	.63*	−.11	

Note. ITS = interactive teaching style; CS = challenging students; EIT = encouraging independent thought.
*$p < .01$.

Discussion

Intellectual stimulation works to encourage thoughtful problem solving through careful contemplation (Bass, 1985) and, as a component of transformational leadership, helps foster intrinsic motivation in subordinates (Bass & Riggio, 2006). This may be because, as Deci (1975) suggests, intrinsically motivated behaviors represent activities that a person does when following their inner interests. Considering that transformational leadership has been defined as the ability for a person to align the interests of the individual with the interests of the organization (Bass, 1999), it may be the case that transformational leadership in general (and intellectual stimulation in specific) has the ability to foster intrinsic motivation in the classroom by creating an environment that naturally engages student interests and psychological needs. Importantly, the results of this study suggest that when teachers influence students' intrinsic motivation through the use of intellectually stimulating behaviors,

students approach their learning in deep and strategic ways, and are less likely to adopt a surface-level approach to their studies. This result is meaningful considering that deep and strategic approaches have been linked to positive learning outcomes (Duff, 2003; Prosser & Trigwell, 1999).

In addition to our predicted findings, a few unpredicted findings emerged from our study. First, the only component of intellectual stimulation that had a direct impact on intrinsic motivation was challenging students. It is likely the case that the nonsignificant (direct) paths between both an interactive teaching style and encouraging independent thought and intrinsic motivation are the product of shared variance with challenging students. This result suggests that challenging students in the classroom may be the most influential aspect of intellectual stimulation when it comes to fostering intrinsic motivation, and seems to imply that teachers who push students to know the course material well and who help students to be the best they can be also encourage students to internalize their motives for studying. This outcome may be linked to the notion of relevancy. Recall that teachers who are challenging help students see that their hard work is worth it. By helping students understand how their efforts will pay off in the future, teachers may influence more thoughtful study habits; this finding has support from previous research (e.g., Fransson, 1977; Pintrich, 1999).

A second interesting finding concerns the direct relationship between encouraging independent thought and students' deep approach to studying. This relationship was not predicted, but makes sense considering this portion of intellectual stimulation reflects a teacher's ability to get students to think deeply, critically, and to form their own conclusions about course material. All of these ideas have been linked to a deep approach to studying in previous investigations (e.g., Duff, 2004; Harter, 1981). Although we predicted that encouraging independent thought would promote deep studying by way of intrinsic motivation, it seems that this influence may be more direct than hypothesized.

To summarize, our results suggest that students' approaches to studying are influenced by their motivational orientations and the behaviors teachers employ in the classroom. This study revealed that three such behaviors are factors associated with intellectual stimulation including challenging students, encouraging independent thought, and (to a lesser extent) using an interactive teaching style. One limitation of this study involves the low reliability of the measure of students' surface-level approach to studying. In this investigation, we used an abbreviated version of the Approaches to Learning and Studying inventory and this shortened form may have contributed to the low reliability coefficient. Finally, future researchers may want to continue to examine the types of behaviors that influence students' approaches to studying. By learning how teachers can help students study in deep and strategic fashions, scholars may be able to articulate important behaviors that influence a quality education.

Note

[1]   We decided to correlate deep and strategic approaches to learning based on previous research documenting this relationship (e.g., Duff, 2004).

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