INTRODUCTION/EDITORIAL
The Problem of Motivation in the Middle Grades

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Everywhere I turn, as a middle school educator, I hear the voices of teachers and administrators telling me the problems they are facing educating our children are less cognitive and more due to motivational factors. "My kids are smart!" they assert, "yet I am having difficulty reaching them." The comments I hear deal primarily with science, technology, engineering and math (STEM) teaching and learning, but I also hear language arts teachers, concerned that the reading list they have been handed does not meet the interests and cultural identities of their pupils. When I contemplate this trend, I have to look to the research on motivation and academic engagement and performance to help my colleagues work through these issues. What I find is that we *do* know quite a lot about the kinds of motivational patterns in students that lead to deeper engagement and better learning (Schunk, Pintrich, & Meece, 2008). We also have good information regarding the kind of instructional climates and teaching strategies that can improve students' valuation of academic subject matter (Wentzel, 1999). We also have insight into intervention strategies that can help students develop productive goal orientations and mindsets (Anderman & Anderman, 1999; Blackwell, Trizniewski, & Dweck, 2007).

But even with all of this knowledge, we *still* face the fact that U.S. students (and, to be honest, students in other nations with similar cultures) tend to show decreasing motivation to learn over the middle grades, particularly in STEM content (Gottfried, Marcoulides, Gottfried, Olivier, & Guerin, 2007). This special issue of *Middle Grades Research Journal* is intended to highlight a set of rigorous empirical studies that shed light on productive motivational beliefs in middle school children, classroom norms, and teaching behaviors that together, paint a picture for the future of middle level education.

The first two studies are quantitative, showing the impact of motivation on the kinds of learning strategies students employ, and the kinds of affective and interest-based patterns that drive middle grades students, and how to assess them cleverly. McClintic-Gilbert, Corpus, Wormington, and Haimovitz (this vol-

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ume) show that intrinsic motivation—engagement for its own sake—tends to recruit deeper learning strategies than extrinsic motivation which tends to recruit more surface-level strategies. Their study shows that, in middle grades classrooms, fostering of intrinsic motivation should prove to improve students' learning of the content, and enjoyment of it. However, they also found that neither intrinsic motivation nor deep learning strategies showed a significant positive relationship with achievement as measured by grades.

Ely, Ainley, and Pierce (this volume) teach us that interest is associated with positive affect, including student feelings of happiness, excitement, pride and hopefulness. One of the most interesting nonfindings in their study is that academic subject matter doesn't seem to appear in middle schoolers' self-identification of their interests. This is heady stuff. Research shows that personal agency depends on interest as a key determinant of engagement. Without interest, students are reduced to instrumental considerations of utility when deciding what to engage in. Hope really *is* hard to find.

Together, these studies show that, individually, the development of interest promotes more effective cognitive processing of academic content, and engenders positive affect and feelings of future success. Moreover, personal interests seem to differ by individuals and by gender, leading us to conclude that meeting the affective needs of middle school students depends on tapping into a varied set of interests, requiring flexibility of interest assessment, and, as I project, multiple avenues for students to see themselves in the content in which they are engaged.

Following this, we have two qualitative studies of how motivation plays out in middle grades mathematics classrooms, showing the fact that teachers matter, and the kinds of teaching styles and social interactions that promote positive social motivation. Jansen and Bartell (this volume) describe classrooms where teachers enact care in their mathematics instruction. Caring teachers, according to middle school students and their teacher, know their students well, and go out of their way to learn about their students' interests, abilities and predilections. They do not just try to reach every student, they make instructional decisions that insure that all students have significant, meaningful interactions. They hold high expectations, and explain mathematics thoroughly to insure students are successful. This study paints a picture of a positive motivational environment that has the potential to improve instruction for middle grades students. But the authors also note that caring instruction is not necessarily good or effective instruction. Other key considerations like mathematical knowledge for teaching, curriculum, and even student buy-in also impact instructional quality. Care seems to be a necessary but not sufficient condition for positive mathematical affect.

Megowan-Romanowics, Middleton, Ganesh, and Joanou (this volume) paint a similar picture. We show that students and teachers often have competing goals for mathematical behaviors. The negotiation of these goals, and the degree to which they are cooperative or competitive are determining factors for student buy-in to rigorous mathematical study. The classrooms studied had primarily performance goals, as opposed to learning goals, and students tended to put out minimal effort to placate the teacher with minimal disruption as opposed to two contrast classrooms with primarily learning goals where students tended to take charge of their learning. Key to this study is the fact that students, when they matriculated from one class to another with different goal structures and associated norms, displayed fundamentally different motivational patterns.

Taken together, these two studies show that teachers matter. Teachers have the power to change students' motivational patterns by working to really know their students, enact appropriate, tailored, *caring* practices that induce students to buy-in, even in mathematics.

The bookend to this volume is my large-scale study utilizing the High School Longitudinal Study 2009 sample of 24,000 recent middle school graduates, showing that motivation, though important and predictive, is only part of the larger picture of achievement-producing variables. Interest only accounted for 6 to 10 percent of the overall variation in mathematical achievement of U.S. students. This is significant, but not sufficient to explain the great variation in mathematics performance we see across demographic categories, social strata, and schools and communities. The evidence suggests something else has to be causing the majority of change, filtering and aligning through students' motivations.

What has been lovely about editing this volume is, when the initial disappointment that my own interest, *interest,* did not account for student performance to the degree I had hypothesized, had faded, I realized I had a partial answer in the wonderful work of my colleagues. Teachers matter! Affect matters! Cognitive strategies matter! Tasks matter! The new task for motivation researchers is to attempt to connect these pieces in an ever more provocative puzzle that is the relationship among motivation, practice, emotion, curriculum, and even policy in the design of quality educational experiences of middle schoolers who display such variety in interests, abilities, and expectations for their future.

Moreover, we also must conclude that experimental research, analytic cases, and large-scale studies work hand in hand in informing motivation theory. This volume was organized to create a kind of back-and-forth in the mind of the reader, so that the inner workings of the classroom are shown as the causes of the larger motivational patterns uncovered in the nomothetic pieces. Individual and social motivation are mutually constitutive, and neither can be understood in its entirety without the other.

Motivation is a hot topic right now. All of the work on standards, assessment, block scheduling, curriculum development and policy have failed to inspire students to take a greater responsibility over their learning. It is clear that attention to the interests and emotional structures students bring to the middle school classroom, and the ways that we select and hone them as a function of schooling are critical to the problem of performance. More than motivation, we are at the point in middle level education research where these factors can be manipulated together to engineer effective, useful, interesting, and hopeful schools.

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