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## Degree of Alignment between Beginning Teachers' Practices and Beliefs about Effective

Alysia D. Roehrig, Jeannine Turner, Crissie Mae Grove, Naomi Schneider, and Zhu Liu



Running head: ALIGNMENT OF PRACTICES AND BELIEFS

Degree of Alignment between Beginning Teachers' Practices and Beliefs about Effective

Classroom Practices

Alysia D. Roehrig<sup>1,2</sup>

Jeannine E. Turner<sup>1</sup>

Crissie M. Grove<sup>1</sup>

Naomi Schneider<sup>1</sup>

Zhu Liu<sup>1</sup>

<sup>1</sup>Florida State University

<sup>2</sup>Florida Center for Reading Research

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Abstract

Six beginning teachers were compared to an exemplary, experienced teacher. Teacher beliefs, classroom practices, and student engagement data were coded from theory-driven and data-driven perspectives. The strongest teachers demonstrated alignment between promotive/positive practices, beliefs, and students' engagement. The weakest teachers, whose students were less consistently engaged, demonstrated alignment between undermining practices and beliefs. For beginning teachers, with misaligned practices and beliefs, there may be potential for improving practices with experience. A testable model emerged depicting a metacognitive feedback loop for teachers who are aware of their shortcomings and place responsibility for students' behaviors and learning on themselves.

Keywords: Teacher Effectiveness; Teacher Behavior; Teacher Beliefs; Student Motivation

## Degree of Alignment between Beginning Teachers' Practices and Beliefs about Effective Classroom Practices

Research on teachers' effectiveness has highlighted the importance of teachers' beliefs and behaviors for supporting students' motivation and achievement (Deemer, 2004; Turner et al., 1998; Urdan & Turner, 2005). However, little is known about these links for beginning teachers. How do new teachers begin to integrate their beliefs, instructional practices, and classroom management in ways that reflect effective veteran teachers? What cognitive, emotional, and behavioral skills do some new teachers exhibit that suggests they may become effective teachers? Our research sought to answer these questions.

### *Classroom Practices of Effective Teachers*

Both quantitative and qualitative findings support the conclusions that effective teachers' instructional and classroom management practices are related to higher levels of students' academic motivation, engagement, and achievement (e.g., Foorman et al., 2006; Pressley et al., 2001; Taylor, Pearson, Clark, & Walpole, 2000). For example, teachers whose students are highly engaged in academic tasks tend to spend more time on instructional activities like reading books to the class, using active small-group instruction, and making cross-curricular connections, than teachers whose students are not highly engaged. In addition to instructional practices, teachers' effective classroom management and their encouragement of students' self-regulation also have been shown to lead to higher levels of students' academic engagement and achievement (Foorman et al., 2006). In these classrooms, disciplinary actions are rarely needed because, in addition to providing students with engaging instructional activities, effective teachers emphasize students' self-regulation. Additionally, effective teachers rarely use tactics that undermine motivation, such as punishment or sarcasm (Bogner, Raphael, & Pressley, 2002;

Dolezal, Welsh, Pressley, & Vincent, 2003).

*Alignment and Consistency of Teachers' Beliefs and Practices*

One factor that may influence teachers' classroom practices, and hence student outcomes, is the beliefs they hold about teaching and learning. Research focused on the consistency of teachers' beliefs and their practices suggests that alignment between teachers' beliefs and practices differ across domains of beliefs, content areas, and teachers' abilities. While studies have found teachers' beliefs match their practices (Artzt & Armour-Thomas, 1999; Reed, 2002; Tsai, 2006), other studies have shown contradictions between teachers' espoused beliefs and their actual classroom practices (e.g., Vartuli, 1999).

*Reasons for mismatches between beliefs and practices.* Research has revealed several reasons for mismatches between teachers' beliefs and practices. For example, mismatches may occur because of teachers' lack of knowledge. In one study of teachers' beliefs about constructivist practices, their beliefs often did not match their observed instructional practices (Lockwood, 2007). Lockwood concluded that, while most teachers in her study believed constructivist teaching methods were helpful, they struggled to implement practices because of "scant understanding or experience incorporating these practices into their instruction" (p. 134).

Mismatches between teachers' beliefs and practices also may be due to their lack of self-awareness, such as when teachers do not do what they think they do or when they do more than they recognize (Sahin, Bullock, & Stables, 2002). In Sahin et al.'s study, teachers were not aware they used impromptu questioning of students' actions, thus helping students with their comprehension. Only two of thirteen teachers stated they used questioning during lessons, but observations showed many teachers used this type of questioning.

Although results of Sahin et al.'s (2002) study showed teachers may do more than they

are aware, for some teachers, the mismatch between their beliefs and actions may be caused by their lack of awareness regarding their practices and the effects of those practices on their students (Richardson, Anders, Tidwell, & Lloyd, 1991). For example, Carlman (2004) concluded some teachers may have mismatches because they are “at different points in their ability to examine their teaching practices” (p. 197).

*Reciprocal relationships of beliefs and practices.* Raymond (1997) proposed a reciprocal model to explain the relationship among a teacher’s beliefs, personality, practices, experiences/training, and immediate classroom situation (including students’ attitudes and behavior). Her research suggests teaching practices may have a moderate influence on one’s beliefs, while the immediate classroom situation also may have an influence on one’s beliefs. Conversely, a teacher’s beliefs may be a key influence on practices; however, immediate classroom situations and social teaching norms might impact a teacher’s choice of what to put into practice. She suggested “competing influences on practice[s]...are likely to interrupt the relationship between beliefs and practice” (Raymond, p. 567), which may serve as a cause of inconsistency between teachers’ beliefs and practices.

The possible influences of teachers’ practices and beliefs, as well as mismatches between practices and beliefs, are of particular interest to those wishing to influence the process of teacher change—whether that change is the goal of school reform or beginning-teacher induction. Our previous research (Roehrig, Bohn, Turner, & Pressley, 2008), focused on mentors’ influence of beginning teachers, suggested that beginning teachers who were more effective at the end of the year had greater metacognitive awareness of their strengths and challenges related to using effective classroom practices than less effective beginning teachers. Since, as a whole, our results suggested mentors did not seem to have a large impact on the effectiveness of beginning

teachers' practices, we wanted to explore why some beginning teachers seemed to be more effective than others. To this end, we chose to investigate the extent to which these beginning teachers were aware of their practices and their beliefs about their practices. In particular, because most previous research in this area has been on more experienced teachers, we were curious about the alignment between beginning teachers' beliefs about effective classroom teaching and their actual teaching practices.

### *Current Study*

The goal of the current study was to explore the alignment of six beginning teachers' beliefs and practices, in comparison of an experienced, exemplary teacher. To further explore relationships between teachers' beliefs and practices, we also explored aspects that might help beginning teachers become more effective. Thus, in addition to theory-driven coding, we analyzed interview responses using data-driven open coding. Finally, we conducted a cross-case analysis to identify key similarities and differences across teachers (Stake, 2000). Using a grounded theory methodology (Strauss & Corbin, 1998), we developed a testable model about potential mechanisms underlying the alignment of beginning teachers' practices and beliefs.

## Method

### *Participants*

Participants included six *beginning* primary school teachers (completing their first or second year as full-time teachers) and one *experienced* teacher (completing her 13th year of teaching). Beginning teachers had participated in the mentoring study previously described (Roehrig et al., 2008), thus at the end of their year-long mentoring experience they were known to vary in their implementation levels of exemplary teaching practices (i.e., practices identified by Pressley and his colleagues; Pressley et al., 2003). The experienced teacher, Naples, had been

previously identified as exemplary (in Bogner et al., 2002). Naples also served as a mentor in the Roehrig et al. (2008) mentoring study; as the most effective teacher observed in that previous study, she was selected for the current study as the model to which the beginning teachers were compared.

Each teacher taught at a different parochial school located in a small Midwestern city. Two taught kindergarten (Nickles and Lindsey), three taught first-grade (Naples, Jackson, and Thomas), and two taught second-grade (Smith and Lockmaster). All participating teachers were female Caucasians, reflective of US demographics indicating teachers are primarily female and Caucasian (Taylor & Sobel, 2001). Ms. Nickles and Ms. Jackson entered teaching by completing undergraduate teacher education programs at top ranked private universities. Ms. Thomas, Ms. Smith, and Ms. Lindsey also entered teaching through the traditional route, obtaining their bachelor's in education from the regional campus of a local state university. Ms. Lockmaster, who was not a certified teacher, had neither obtained a degree in teacher education nor engaged in a formal alternative preparation program.

Each teacher's classroom varied in the number of students and range of students' SES levels (i.e., percent of students at the school eligible for free/reduced-price lunch [FRL] reported when data available; Indiana Department of Education, 2003). Ms. Nickles' kindergarten had 9 half-day and 15 full-day students, with 2% FRL. Ms. Lindsey's kindergarten had 13 morning and 8 afternoon students, with 6% FRL. Ms. Naples' first-grade had 25 students, with 14% FRL. Ms. Jackson's first-grade had 20 students, with 1% FRL. Ms. Thomas' first-grade had 15 students. Ms. Smith's second-grade had 10 students, with 72% FRL. Ms. Lockmaster's second-grade had 16 students. Teachers provided reading instruction to students whose reading abilities varied greatly in fluency and comprehension (Roehrig, 2003).



### *Data Collection*

Data were collected during and after teachers participated in year-long teacher-induction mentoring programs; beginning teachers were mentees, and the experienced teacher served as a mentor for one of these beginning teachers. Primary data sources included interviews with teachers and classroom observations.

*Classroom observations.* Classroom observations were conducted during the spring, with the goal of observing a few representative school days, to obtain data regarding usual classroom atmosphere, instruction, and management. The observers (i.e., always the first author joined by one of two trained research assistants) sat in the back of the classrooms and independently took fieldnotes summarizing instructional activities, lesson content, student-teacher communications, descriptions of students' and teachers' demeanor and behavior, counts of students exhibiting engaged on-task behavior during each activity observed, and classroom organization. Each classroom was visited 2-4 times, with each observation lasting from 1-2 hr. Multiple visits were made to teachers' classes until no new conclusions could be drawn from the observations.

Classroom observations were coded from a theory-driven perspective using the Classroom AIMS Instrument schema (Roehrig, 2003; Roehrig, Dolezal, Welsh, Bohn, & Pressley, 2002), which was developed based on the effective teaching literature (Pressley et al., 2003). It describes practices characteristic of exemplary primary teaching in areas of classroom Atmosphere, Instruction/content, Management, and Student-engagement. Within the major categories or scales of Atmosphere, Instruction/content, Management, and Student-engagement, each of 130 AIMS items was rated on the extent to which a characteristic of effective classrooms was observed across the spring observations of a given teacher. Following prescribed methods, category scores could range from 1 to 3, with 3 representing when teacher and student practices

were often observed to reflect exemplary practices and 1 when practices were rarely observed to reflect exemplary practices. Using AIMS, observers independently coded their spring classroom observation fieldnotes for each teacher as a single set. The coders then met to discuss their observations and ratings, consulting their fieldnotes to resolve any disagreements until reaching 100% agreement. Interrater reliability using AIMS to code a sample of 36% of observation sets was high, with 97% of items receiving identical (70%) or contiguous ratings (27%).

*Teacher interviews.* Individual structured interviews were conducted, during which the same set of questions was asked of each teacher, with general probes used to encourage teachers to expand their answers. Interviews with all seven teachers were conducted at the end of the school year by the first author and lasted approximately 1 hr each. The purpose of the interviews was to have teachers describe their beliefs and practices related to classroom practices characteristic of exemplary teachers. Rather than revealing to interviewees our perspective on exemplary classroom practices, we asked questions that framed practices in a neutral light.

Teachers' interview responses were analyzed using two perspectives, one theory-driven and the other data-driven. The theory-driven coding framework was based on the scales and subscales represented in AIMS (i.e., the same framework used to code classroom observations to facilitate comparisons between teachers' own practices and teachers' perceptions or beliefs about practices associated with effective teachers). In addition to theory-driven coding, data-driven open coding of teachers' interview data was conducted to identify emerging themes within interview responses that were not captured by the AIMS theoretical framework. The authors independently coded transcripts of each interview, then met to discuss their coding and any discrepancies. Interrater reliability for initial coding of interviews was high, with 73% of codes agreed upon by at least 3 of 4 raters. All disagreements were resolved through discussion until

reaching 100% agreement.

### *Data Analysis: Model development*

The goal of data-driven model development was to understand how emerging themes teachers discussed in interviews related to what they did and believed, as well as to explain differences in alignment that occurred between beliefs and practices. In order to facilitate identification of patterns between both theory- and data-driven themes as well as across participants, we quantified the coding described above. First, from the observation fieldnotes, we calculated scores on AIMS scales, which reflected the consistency with which teachers were observed using exemplary classroom practices in the spring (i.e., those promotive of students' engagement and learning). We then counted the number of unique comments in interviews that reflected consistency or inconsistency with exemplary practices portrayed by AIMS scales, and identified those teachers with matches or mismatches between their beliefs and practices. We also tabulated the unique number of promotive (positive) and undermining (negative) views of students expressed, the unique number of internal (positive) versus external (negative) attributions teachers made related to their sense of responsibility for class outcomes, and the number of unique metacognitive statements presented in interviews. Using these quantifications as shorthand for the coding of the full text of classroom fieldnotes and interview transcripts, we ranked teachers according to scores and counts in each of the theory-driven and data-driven categories. The resulting table facilitated the inductive search for patterns between teachers and groups of teachers and was the basis from which a model representing the patterns was developed.

## Results

Our first analyses focused on understanding the extent to which teachers' practices were

aligned with (1) exemplary, effective classroom practices (as described in AIMS) and (2) their beliefs about effective classroom practices (aligned with AIMS categories). In addition to comparing teachers' practices and beliefs using AIMS, we also compared their practices and beliefs using categories that emerged from open-coding of teachers' interviews. To interpret associations of teachers' practices and beliefs both within and across teachers, we rank-ordered teachers from strongest (i.e., Naples) to weakest (i.e., Lockmaster), according to each of the variables represented in Table 1. Specifically, teachers with positively matched beliefs and practices were ranked highest, while those with negatively matched beliefs and practices were ranked lowest. The order of teachers within the positively matched, negatively matched, and mismatched groups respectively, were ordered taking into account their AIMS scores, as well as the counts of positive and negative interview statements derived from both theory- and data-driven coding.

#### *Theory-Driven AIMS Categories*

In addition to rating teachers' observed classroom practices using AIMS, their interview comments also were coded using AIMS categories. When teachers endorsed practices that were consistent with AIMS practices in their interviews, those comments were coded as "promotive" (i.e., positive) of students' engagement and learning within the appropriate AIMS category. When teachers endorsed practices that were inconsistent with exemplary AIMS practices, their comments were coded as "undermining" (i.e., negative) of students' engagement and learning. Not surprising, the experienced exemplary teacher (Naples), provided the most AIMS-aligned and promotive statements (see Table 1). The two strongest beginning teachers gave high proportions of AIMS-aligned promotive statements, while, the two weakest beginning teachers provided the highest proportions of non-exemplary, undermining statements. Similarly, the

observed classroom practices of the experienced exemplary teacher had the highest AIMS scores, while the two weakest beginning teachers had the lowest scores. AIMS scores reflecting student engagement observed during classroom visits also approximated this trend.

#### *Data-Driven Categories*

Two categories of beliefs emerged from the data-driven open coding of teachers' interviews: *Sense of Responsibility for Class Outcomes* and *Views of Students* (see Table 1). Regarding teachers' *Sense of Responsibility for Class Outcomes*, we coded teachers' expressions of internal attributions (teachers' responsibility) and/or external attributions (e.g., students' or parents' responsibility) from their interviews. For example, the exemplary teacher, Ms. Naples, provided an internal attribution of responsibility, saying, "[Students] may be in La-La Land sometimes. You need to teach them how to be self-regulated." On the other hand, Ms. Smith, a weaker beginning teacher, explained students sometimes are not well-behaved because of the "time of day...they are good from beginning of the day to first bathroom break, then it breaks down," which was coded as an external attribution of responsibility.

Regarding their *Views of Students* (see Table 1), we coded teachers' comments representing positive/promotive or negative/undermining views they held for students. For example, Ms. Nickles, one of the strongest beginning teachers, described her students in a positive light as "loving," explaining, "they really do want to learn, want to be here." In contrast, Ms. Lockmaster, the weakest beginning teacher, when asked about making connections between school and home, said, "[It] helps me understand the kid, that they are not just lazy or a brat," which was coded as an undermining view of students. In comparison with the exemplary teacher, only the strongest beginning teacher made no negative comments about students. The remaining beginning teachers provided a mix of promotive and undermining views of students.

*Matches among Practices and Beliefs*

Ms. Naples, the exemplary teacher, and Ms. Jackson, the strongest beginning teacher, were the only ones who demonstrated complete matches between effective practices exhibited and promotive beliefs expressed (represented as “+” in Table 1, under *Match Between Beliefs and Practices*). The two weakest beginning teachers (Smith and Lockmaster), also demonstrated complete matches between their practices and beliefs; however, theirs were matches between ineffective practices exhibited and undermining beliefs expressed (represented as “-”). The following are examples of practices and beliefs that were aligned (promotively or underminingly) in the three areas of AIMS classroom practices.

*Atmosphere.* An example of consistent promotive practices and beliefs related to classroom atmosphere was exhibited by Ms. Naples. Her comments were aligned with her practices, particularly related to her focus on effort rather than performance. She reported in the interview, “I really stress students’ progress and improvement. I talk about that when we talk about what grades mean. The effort grade is the most important grade.” In practice, she was observed urging students to try hard and “do your best” in every activity. When students received their report cards, she reassured them their most important grade was for effort. In contrast, Ms. Smith’s beliefs and practices related to atmosphere were aligned, but undermining. In particular, she held undermining (or negative) views of students, which also were reflected in the classroom. Smith described her class, stating, “I only had 10 [students], but it felt like 20....They would argue and fought like siblings.” She also stated, “Some days lots of nasty things come out [of my mouth], although I didn’t mean it.” Consistent with her views, she was observed using sarcasm with students. For example, when one student was concerned about another student and asked, “Is she at the real hospital?” This teacher replied, “No, she is at the *fake* hospital.” Not

surprisingly, throughout the school year, Smith's students also were observed acting negatively with each other; students often were observed arguing with one another and with the teacher.

*Instruction.* An example of consistent promotive beliefs and practices related to classroom instruction/content was exhibited by Ms. Naples. She articulated processes, and was observed using strategies/problem solving in both the realms of instruction and classroom management. In her interview, Naples explained that when teaching students a literacy strategy it was important to “model it and teach it directly: sounding out, [using] chunks, stretching [words] while stretching a rubber band.” She also indicated that when writing in front of the class, she would think aloud by asking herself “does it look right?” in order to model “the writing process, proof reading.” In practice, Naples was observed modeling instructional strategies. For example, she demonstrated repeatedly how to look up words in the dictionary. On the contrary, both Ms. Lockmaster's and Ms. Smith's practices and beliefs were aligned with respect to instruction/content, but were undermining. For example, Ms. Lockmaster had difficulty fostering instructional density in the classroom. When observed, students often were working on worksheets, while the teacher sat at her desk. When interviewed, Lockmaster stated, “In second-grade, nothing is really dense.” She also struggled with including engaging content in instruction. Similarly, instead of being concerned with students' lack of attention, Ms. Smith stated students could learn “off the posters” if they were not listening to her. She also presented material without enthusiasm, and students appeared disinterested and mirrored undermining vocalizations (e.g., “Then do we have recess?”). Students were consistently off-task in Smith's class, asking about non-academic matters, or talking to each other.

*Classroom management.* In the area of classroom management, Ms. Jackson, similar to the exemplary teacher, communicated the importance of routines and responsibilities and was

observed to enact this belief. In her interview, she commented, “Students need to know what good behavior looks like so they can internalize it and be able to do it on their own. You have to teach them what a good student acts like and you have to show that to them—‘This is how you sit.’” This structure and routine was observed in her class, similar to her mentor (Naples). On the other hand, the practices and beliefs demonstrated by Ms. Smith in the area of management were undermining of students’ engagement and learning. In the interview, she responded pessimistically about the potential for students’ behavioral self-regulation, stating, “Sometimes we all just want to be told what to do. It is easier than having to think.” In observations, instead of teaching self-regulation to students, she reacted to students’ misbehavior as it occurred, threatening to turn his or her card to red on the disciplinary chart. Even while playing games, instead of having established guidelines for behavior, Smith reacted to uncooperative behavior by threatening, “I’m going to disqualify somebody!”

#### *Mismatches of Promotive and Undermining Practices and Beliefs*

Instead of alignment of practices and beliefs, three teachers (i.e., Nickles, Thomas, and Lindsey) demonstrated mismatches between their beliefs and practices. Although these teachers were consistent in their Instruction/content practices and beliefs, mismatches (denoted by “≠” in Table 1) occurred in the areas of Atmosphere and Management. Two of the teachers (Nickles and Lindsey) expressed promotive beliefs while their practices were observed to be undermining. For example, in terms of fostering community, Ms. Lindsey explained she

tried all year to get them to realize we are all friends and [at school] for the same reason. We are all different, but have something to offer.... We did the friendship circle game: had to say why they like the person next to them, that person thanks them and says how that makes them feel. They started with the physical and moved towards personality. It



really worked.

In observations, however, Lindsey was seen delivering undermining statements. In the spring, the kindergarten students were playing a game during which they passed a bowling pin, and Lindsey exclaimed sarcastically, “Did you guys want to pass it or *not*?” Students, too, were observed undermining each other, calling names and using sarcasm with no teacher intervention.

*Potential for Improvement: Metacognition*

Despite occurrences among beginning teachers of inconsistent practices and beliefs, analyses of interviews suggested Ms. Nickles, Ms. Thomas, and Ms. Lindsey had potential for improving their practices, and perhaps their beliefs, as they gained experience. This perceived potential was grounded in statements that indicated they were aware of shortcomings in their practices. Accordingly, a data-driven category that emerged from teachers’ interviews was *Metacognitive Awareness* (see Table 1). For example, in talking about her attempts to provide students with choices, Thomas said, “I am not sure I did a good job, I was afraid to give too much leeway.” This statement demonstrated Thomas was aware of choices in her own behaviors, and that her choices affected students’ behaviors. Interestingly, teachers whose practices and beliefs were consistent, but undermining, provided few if any comments indicating they experienced metacognitive awareness of their instructional choices and/or a connection between their practices and students’ behaviors. These teachers also tended to make comments indicating they did not place responsibility for students’ behaviors and learning on themselves. Looking across teachers’ comments, observed instructional behaviors, and observed student-engagement, we constructed a model depicting thematic relationships.

Proposed Model

Throughout our analyses, teachers demonstrated one of the following alignment patterns:

(1) complete promotive alignment of practices and beliefs, (2) complete undermining alignment of practices and beliefs, or (3) mismatches of promotive and undermining practices and beliefs. Emerging from our thematic analyses outlined in Table 1, a testable model was formed (see Figure 1). This model depicts proposed directions of relationships among the following variables: responsibility for students' learning (A), beliefs about instruction and management (B), classroom practices (C), students' academic engagement and motivation (D), and metacognitive awareness (E). Arrows with dashed lines indicate that the relations between some variables may only exist for subsets of teachers. A metacognitive feedback loop, if present, suggests that developing beginning teachers (particularly when they have mismatches between beliefs and practices that prompt reflection) may revise their beliefs and practices to better align with those exhibited by exemplary teachers. When there is no mismatch between beliefs and practices, whether in the case of an expert teacher like Naples or of an underdeveloped teacher like Lockmaster, the feedback loop may be less relevant to the model.

*Promotive Alignment of Beliefs, Practices, and Outcomes*

Ms. Naples described in her interview a strong sense of responsibility for class outcomes (A, Figure 1). In considering how to keep students engaged in learning activities, she indicated her behaviors were important and emphasized the importance of "teacher's attitude." She explained, "if I enjoy it and am engaged, if I think it's important, then they do." Naples also expressed the belief that she had a role in helping students develop academic self-regulation, particularly by using modeling and making student-expectations clear. She expressed only promotive beliefs about classroom atmosphere, instruction/content and management (B, Figure 1). For example, with respect to instruction/content, Naples expressed beliefs about making content engaging and stressed the importance modeling and teaching thinking processes (aspects

aligned with research on effective teaching; see Pressley et al., 2003).

In accordance with the sense of responsibility she expressed and her positive/promotive beliefs, Ms. Naples' classroom practices were consistently observed to be representative of exemplary classroom atmosphere, instruction/content, and management (C, Figure 1). In practice, Naples was observed creating an upbeat and happy classroom, filled with a variety of enjoyable activities. In keeping with the rich content and explicit instruction provided by Naples, her students were the most engaged students observed in all seven participating teachers' classrooms (D, Figure 1). Naples additionally demonstrated metacognition (E, Figure 1) when she explained, "[I] haven't got them [the students] doing it [monitoring their reading comprehension] on their own yet. [I am] getting better at explaining [thinking practices] directly and modeling what I'm thinking while reading—'Oh, I'm confused...!'"

#### *Undermining Alignment of Beliefs, Practices, and Outcomes*

Ms. Smith, in contrast with Ms. Naples, did not reveal a sense of personal responsibility for class outcomes in her interview (A, Figure 1). Smith blamed the weather and time of day for students' lack of self-regulation. She also expressed undermining beliefs about classroom atmosphere, instruction/content and management practices, as well as an undermining or negative view of students (B, Figure 1). In describing her students, she appeared to focus on negative non-academic traits; she said, "They would argue, had [their] own opinions, didn't get along very well, fought like siblings."

While Ms. Smith provided some promotive beliefs about instruction/content, she also provided disconcerting comments. For example, she said, "Covering material is not as important as focusing on specific skills. Acquiring knowledge will be easier with skills. It is important to have time to read, relax, go out for recess, and have the choice to color after done with work" (B,

Figure 1). Hence, Smith was observed during free reading to allow students to select books (without teacher guidance) that they were unable to read independently (C, Figure 1). Focusing on skills was important for her students, who were primarily below grade-level in reading and often not academically engaged (D, Figure 1); however, if students are not practicing reading in books at the appropriate level, they may have fewer opportunities to practice skills.

During classroom observations, Ms. Smith also was seen presenting material with no enthusiasm (C, Figure 1) and likewise, her students were uninterested in the material. Students were frequently off task; however, Smith did not redirect their attention but instead ignored them until their behavior become disruptive to the class. In one observation, Smith was explaining sentences, but students were not looking at the text or teacher, some were talking, and one fell off his chair while she proceeded with the lesson. In keeping with her inconsistently effective instruction/content beliefs and practices, her students were inconsistently engaged (D, Figure 1).

#### *Importance of Metacognitive Feedback Loop*

If beginning teachers' beliefs and practices are misaligned, what potential exists for them to develop a promotive match? Beginning teachers may or may not be aware that their practices are not aligned with their beliefs. They also may or may not take responsibility for students' learning, potentially placing little responsibility on themselves for changing their practices if their students are not engaged. If they are aware of the mismatch, then beginning teachers may be able to improve their practices. Teachers' sense of responsibility, however, may play a potentially important moderating or mediating role impacting their ability to align their practices and promotive beliefs (see Figure 1). The presence of a metacognitive feedback loop in a beginning teacher may signal their potential for improvement and future expertise, since experts characteristically have higher levels of reflectivity or self-monitoring than novices (e.g., Berliner,

1988; Borko & Livingston, 1989).

Ms. Jackson, who seemed to be the most effective beginning teacher, was the only beginning teacher to have promotively aligned beliefs and practices by the end of the school year. She also provided the most examples of metacognitive awareness. Jackson's instructional practices improved over the school year (Roehrig et al., 2008) and her awareness of how she was struggling to meet students' needs may have helped her advance her practices. When asked what she thought about challenging her students, she stated, "[students] need to be challenged. [It's] hard to challenge high [achieving] students because it's hard to keep low students on track without getting discouraged. I had an issue with a parent that said her student was bored, [so] I had students writing on their own level, they picked their own books out of baskets, had reading groups." Her response indicated an awareness of her strengths and weaknesses as well as beneficial instructional practices. Additionally, Ms. Jackson's statement may exemplify effective beginning teachers' potential to be reflective in ways that facilitate their making positive instructional changes to align with their beliefs about successful teaching practices.

### Discussion

The goal of this study was to examine interconnections among teachers' classroom practices and their beliefs about students and teaching. In particular, we explored the alignment between six beginning teachers' use of exemplary classroom practices and beliefs that are promotive of student engagement and learning, and contrasted this with the practices and beliefs of one exemplary, experience teacher. Our results suggest beginning teachers who used exemplary practices more consistently, tended to have more promotive (positive) beliefs. Looking for alignment of beginning teachers' practices and beliefs, our findings reveal some beginning teachers' practices and beliefs were aligned, while others' were not. The testable model

developed from our data suggests a mechanism by which beginning teachers may improve the quality of their practice. That is, when beginning teachers are aware of the mismatch between their practices and beliefs and have a concomitant belief they are responsible for students' learning and engagement, they may have the potential to align their practices with their promotive beliefs through a metacognitive feedback loop.

#### *Alignment of Beginning Teachers' Practices and Beliefs*

Teachers, whose beliefs and practices were positively aligned, expressed beliefs in exemplary practices, held optimistic views of their students, and used exemplary practices. In essence, these teachers knew what they should be doing and were doing it. The alignment of the most effective beginning teacher's practices and beliefs, like that of the experienced teacher, suggests their education, personal experiences, and individual characteristics may have worked together to effectively engender the use of exemplary teaching practices. While these observations are encouraging, that only one of six beginning teacher participants demonstrated a promotive match between beliefs and practices suggests preservice teachers' preparations are only partially successful.

Conversely, weaker beginning teachers, whose beliefs and practices were both undermining, held cynical views of students and did not use exemplary teaching practices. These teachers created classroom atmospheres that were unconstructive, used classroom management strategies that were highly controlling or inefficient and undermined students' self-regulation, used instructional strategies that were *not* associated with exemplary teaching, and they tended to place full responsibility for students' learning on students or parents (placing no responsibility on themselves). Teachers with a match between undermining beliefs and practices expressed pessimistic views about their students' capabilities and motivations, and their classroom

atmospheres were tinged with anxiety or boredom. These teachers seemed not to know effective teaching and management practices and seemed not to know their practices could be enhanced.

*Misalignments of Beginning Teachers' Practices and Beliefs*

Our most interesting findings involved beginning teachers who had mismatches between their practices and beliefs in the areas of atmosphere and management. Each pattern of mismatch offers clues to underlying cognitive mechanisms. One participant, Ms. Nickles, expressed beliefs about providing supportive classroom management strategies, but during observations, her management techniques were often reactive and negative in tone. During interviews, Nickles expressed positive beliefs about students and the importance of using promotive disciplinary measures, but she was unable to consistently enact these behaviors. This situation, where classroom management is a challenge, is not unusual for beginning teachers (Bohn, Roehrig, & Pressley, 2004; Roehrig et al., 2008; Roehrig, Pressley, & Talotta, 2002). These findings suggest teachers could benefit from learning about classroom complexity (e.g., Eliaam & Poyas, 2006).

Another of our participants seemed to have surface-level knowledge of promotive beliefs and strategies—she knew the strategies she should be doing to create a positive atmosphere—but did not implement them. Ms. Lindsey could have been using impression management skills. In this scenario, during the interview she could have given socially desirable answers she thought were “correct,” even though she did not actually enact the behaviors she described. Another possibility is that teachers, who express promotive beliefs yet enact undermining behaviors, may not be aware of the mismatch or they may not be aware their negative behaviors send implicit messages to students. Teachers may send covert messages that provide students with information about the teachers' personal beliefs and values, unspoken rules and procedures, or assumptions about students' characteristics and abilities (Rosenthal, 2003).

Another interesting mismatch occurred when a teacher voiced undermining beliefs yet enacted promotive behaviors. Ms. Thomas expressed apprehensive beliefs about her ability to create a positive classroom atmosphere but actually enacted behaviors that provided students with emotional support and feelings of classroom community. In cases like this, teachers may be underestimating their abilities. Because they are new to the practice of teaching, they may lack self-confidence or clear self-awareness. When learning complex skills, individuals may not have the abilities to accurately evaluate their skills (Kruger & Dunning, 1999; Roehrig et al., 2008).

Additionally, research suggests, during the complexities of classroom teaching, teachers may not be aware of some of the behaviors they enact. This is consistent with results of Sahin, Bullock, and Stables' (2002) research. They found some teachers use more instructionally-supportive behaviors than they think they do. Perhaps teachers, who express negative beliefs but enact positive behaviors, would benefit from (1) obtaining feedback from observations of their teaching before they enter employment, (2) observing videos of their own teaching, or (3) having active mentors provide observational feedback once they have entered teaching as a career. Such mentoring, it should be noted, was not available to Ms. Thomas, who participated in the school-provided mentoring program described by Roehrig et al. (2008). These types of activities might give beginning teachers accurate information about their positive use of effective practices. Receiving positive critiques could boost their confidence and support their self-efficacy—an important element in successful endeavors (Bandura, 1986). Teacher-training programs might strengthen preservice teachers' self-efficacy by providing multiple opportunities for experience and feedback (Darling-Hammond, Chung, & Frelow, 2002).

#### *Cross-Case Analysis: Implications of Metacognitive Awareness*

Our data-driven model suggests teachers' degree of metacognition may help them to



align their beliefs and practices through processes of self-reflection and modification. This seems applicable to teachers who demonstrated mismatches between their beliefs and their behaviors, particularly when teachers voiced a sense of responsibility for student outcomes and said they used undermining practices though they were observed using promotive, effective strategies. The model also suggests teachers' messages impact students' academic motivation and engagement and possibly achievement. From a social-cognitive developmental perspective, "human minds are the product of social relationships" (Pressley, 1995, p. 210). Similarly, the development of children's self-regulation skills (or lack of) may be impacted by the extent to which they experience high quality social interactions (Diaz, Neal, & Amaya-Williams, 1990). Student self-regulation is so important because it can predict achievement and growth in emergent literacy and vocabulary (McClelland et al., 2007). Teachers who have alignment between undermining beliefs and behaviors, as well as teachers who have a mismatch between promotive beliefs and undermining behaviors, may not be aware of the effect negative messages have on students.

Metacognition or self-reflection, for this study, was indicated in teachers' interview responses demonstrating an awareness of what they needed to work on. To be effective, teachers need to be able to reflect on their beliefs, biases, and ideas about education, both teaching and student learning, and how these may influence how they practice (Han, 1995). Providing a forum for reflective thinking is critical during teacher training. Individuals who do not reflect may be less aware of their limitations and, in turn, less able to improve their practices. This complex skill needs to be taught; teacher educators need to support new teachers' attempts to be reflective, metacognitive, flexible, and open to change.

In order for a teacher to gain expertise, they must have experience, but this alone is not sufficient (Airasian & Gullickson, 1994). In order to grow and improve, teachers should

participate in a continuous cycle of action, reflection, and improvement. Before a teacher is able to reflect *in* action (i.e., on-the-spot decisions to modify the method or implement something different), Airasian and Gullickson contend teachers may need some level of proficiency of reflection *on* action (i.e., reconsidering actions and outcomes from the past). They need depth of knowledge and experience to reflect on what happened and how they could change it before they are able to effectively do this in-the-moment.

Airasian and Gullickson (1994) also claim that before such reflection can take place, individuals must take responsibility for their actions and believe they can alter student outcomes. If teachers do not believe they have control over the situation, reflection will be futile as they view the situation as something they cannot influence. If teachers place the blame on others (e.g., parents, weather), self-reflection may not be useful for inducing teacher change. At this point, self-reflection and self-efficacy merge. Teachers need to believe they can influence outcomes or student learning and must take responsibility for their practices. If teachers have low self-efficacy—do not believe their teaching has an impact on students—they may place the responsibility of student learning on others. When responsibility has been displaced, teachers do not believe they can influence students and, therefore, reflection may be in vain.

While teachers' self-efficacy was not specifically explored in this study, we did get a sense of whether teachers believed they had an influence on students (i.e., feeling they were responsible and could make a difference). When beginning teachers have greater metacognitive awareness, plus a sense of responsibility for students' outcomes, theory and research on deliberate practice in developing expertise suggests they may have a better chance of developing into experts (Ericsson, Krampe, & Tesch-Römer, 1993). Future research should investigate how teachers' metacognition and self-efficacy mediate changes in beliefs and classroom practices.

Given the current focus on raising the quality of teaching (e.g., No Child Left Behind, Reading First, Department of Education Teacher Quality grants), discovering ways all teachers can draw on their promotive beliefs to more skillfully incorporate exemplary teaching practices is of major concern. Studying patterns of beginning teachers' classroom practices and beliefs about students and teaching may help to confirm ways teacher education programs are effective in developing teachers. More importantly, it may offer insights into the gaps or missing interconnections of some beginning teachers' capabilities. Understanding their needs provides information to help enhance both preservice and inservice teacher education programs. The ultimate goal is to prepare aspiring teachers to plan, manage, evaluate, and adjust their behaviors to meet the dynamic complexities involved with teaching a classroom of students.

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Table 1

*Themes Identified in Teachers' Interview and Classroom Observation Data*

		Teacher Beliefs Data from Interviews			Match Between Beliefs and Practices	Classroom Observation Data		Metacognitive Awareness
		Sense of Responsibility for Class Outcomes <sup>1</sup>	Views of Students <sup>2</sup>	Beliefs about Exemplary Teaching Practices <sup>3</sup>		Classroom Practices AIMS Scores	Students' Engagement AIMS Score	Number of Interview Comments
1) Naples	Exemplary Experienced Teacher	+4/-0	+1/-0	A= +14/-1 I= +20/-0 M= +4/-0	+	A= 2.8 I= 2.8 M=2.6	S= 3.0	+2
2) Jackson	Typical Beginning Teacher	+3/-1	+1/-0	A= +10/-0 I= +12/-0 M= +2/-0	+	A= 1.8 I= 2.1 M=1.9	S= 2.0	+7
3) Nickles	Typical Beginning Teacher	+4/-2	+2/-1	A= +12/-1 I= +17/-0 M= +5/-0	+	A= 2.0 I= 2.1 M=1.8	S= 2.0	+3
4) Thomas	Typical Beginning Teacher	+2/-2	+1/-1	A= +7/-2 I= +15/-1 M= +1/-1	≠	A= 2.2 I= 2.1 M=1.3	S= 2.0	+5
5) Lindsey	Weak Beginning Teacher	+4/-3	+2/-3	A= +15/-1 I= +12/-2 M= +1/-0	≠	A= 1.7 I= 1.8 M=1.5	S= 1.5	+3
6) Smith	Weak Beginning Teacher	+2/-5	+0/-1	A= +10/-5 I= +14/-2 M= +1/-2	-	A= 1.6 I= 1.6 M=1.2	S= 2.0	+1
7) Lockmaster	Weak Beginning Teacher	+3/-4	+1/-2	A= +9/-6 I= +12/-5 M= +1/-0	-	A= 1.6 I= 1.4 M=1.7	S= 1.8	0

*Note.* <sup>1</sup> count of (+)internal/(-)external attributions; <sup>2</sup> count of promotive/undermining comments; <sup>3</sup> count of comments (+)consistent/(-)inconsistent with exemplary teaching practices.

Figure Caption

*Figure 1.* Theoretical model representing how a metacognitive feedback loop may align teachers' practices and beliefs. Dashed lines indicate the relations between variables may only exist for subsets of teachers (i.e. developing, beginning teachers with mismatches that prompt reflection).

