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Implicit Theories of Learning as Reflected in One Upper Elementary Teacher's Talk

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Abstract: Strong empirical evidence exists indicating language can influence students' beliefs about ability. Professional literature for teachers offers practical advice on how to adjust their classroom-based talk to support student achievement by orienting students toward an incremental theory of ability. Yet, little empirical work has been done to investigate how teacher talk plays out moment-to-moment within the classroom context. This study reports on a qualitative analysis of one upper elementary teacher's talk with regard to implicit theories of learning. Findings suggest teacher talk is dynamic and overlapping, operating along a continuum from entity-oriented talk to incremental-oriented talk across varied classroom situations. Additionally, a relationship was identified between teacher autonomy and the implicit theories of learning used in the teacher's talk. Examples of varied teacher talk during classroom activities are presented, and scholarly and practical implications for language use, learning, and instruction are included.

Introduction

Beliefs about student capabilities as related to learning and instruction is of great importance in the field of education. Research focused on implicit theories of learning support linking academic outcomes to how students perceive their individual abilities (Yeager & Dweck, 2012). Specifically, self-perceptions of ability influence how an individual may respond to setbacks and failures and develop attitudes toward learning goals (Dweck, Chiu, & Hong, 1995). Thus, it is important to consider factors that could influence an individual's beliefs about intelligence and an individual's ability to learn.

One such factor is the language used by the classroom teacher, teacher talk. Previous research has indicated the verbal behaviour of classroom teachers may influence how students feel about their ability to learn, regardless of ability (Gorham, 1988). More recently, Johnston (2012) has illustrated how specific differences in teacher talk can either support a student's persistence towards problem solving, leading to a richer learning experience, or minimise student effort and negatively impact the learning process. Teacher talk provides one observable tool for further examination (Edwards & Mercer, 1987; Mercer, 1995). This manuscript reports on an investigation into how one teacher's talk reflects implicit theories of learning.

The teacher, Gail (pseudonyms are used throughout), taught in an urban public elementary school that drew from the surrounding neighbourhood. This teacher was seen as effective across groups of educational stakeholders including administrators in her school district, families in the neighbourhood, and faculty at the nearby university. Yet, while she was recognized as an exemplar across groups, little was known about *how* she was so effective. Ethnographic data was collected during Gail's 3rd and 4th years of teaching to begin to investigate this matter.

Theoretical Perspectives

Perceptions of learning potential and individual ability are held by individual learners and teachers who guide the learning process (Dweck, 2006). These perceptions, unique to each individual, are shaped by beliefs and experiences (Dweck, Chie, & Hong, 1995). Student perceptions of ability and goal orientation are strong predictors of student's learning strategies, how they approach tasks, and their attitudes towards learning (Ames & Archer, 1988). In addition, they influence student achievement (Brookover, Thomas, & Patterson, 1964). Previous research provides frameworks for considering how perceptions relate to beliefs about oneself as a learner, the value of learning, actions and outcomes (Claxton, 1996), and the influence of experience on implicit theories of learning (Dweck, Chie, & Hong, 1995).

Implicit Theories of Learning

An implicit theory refers to the way in which an individual perceives their own performance across such domains as intelligence, personality, and achievement, though individuals are often unaware of the theory (Yeager, Johnson, Spitzer, Trzeniewski, & Dweck, 2014; Dweck, 2006). Specifically, the term refers to "people's basic assumptions about themselves and their world" (Dweck, 1996, p. 69). Implicit theories of learning represent preconceptions held by individuals. Often picked up tacitly, implicit theories of learning can influence how the individual responds to a task as a learner. They can impact how much effort the individual exerts, their perseverance towards problem solving and task completion, and how they determine learning goals (Claxton, 1996). Ultimately and closely associated with self-efficacy, learners' perceptions of how their actions relate to outcomes is influenced by implicit theories of learning and ability (Hong, Chiu, Dweck, Lin, & Wan, 1999).

Dweck's work on implicit theories centers on perceptions of ability and how changeable learning potential is. She describes two perspectives: entity theory views ability and learning potential as fixed. Those working from this perspective perceive innate, static ability that will not improve with increased effort. Within this framework, learners holding an entity theory of learning are more likely to avoid tasks perceived as challenging and less likely to put forth effort in problem solving. Similarly, teachers who believe that learner ability is fixed are more likely to use ability grouping, less likely to hold high expectations for all students, and may offer fewer academic challenges for students perceived as having low ability (Dweck, 2006). Conversely, incremental theory considers ability and learning potential malleable. Learners with an incremental theory of learning are more likely to increase their problem-solving efforts when encountering a challenge (Dweck, 1986) and display dispositions associated with resilience (Carr

& Claxton, 2002). Though presented as distinct here for clarity's sake, a clear binary does not always exist. The perspectives are not static.

Implicit Theories and Learning Tasks

A teacher's beliefs influence their effectiveness and how they facilitate student learning (Combs, 1999; Usher, Usher, & Usher, 2003). Those with an incremental view of learning may hold higher expectations for learning and thus be more likely to challenge themselves and their students. Likewise, they may be more likely to support student growth through practices that encourage effective responses to setbacks, the development of problem-solving skills, and the attainment of personal learning goals. Teachers who hold an incremental view of learning will engage in classroom practices that emphasise growth, high expectations, effort and perseverance, and adaptive approaches to problem solving. However, it is important to remember that implicit theories are vulnerable to external influence.

Early research in implicit theories of learning questioned whether "the effects of implicit theories, such as those of 'ability', *are* dependent on certain kinds of content, task demand and context" (Claxton, 1996, p. 54, italics in original). In fact, the malleability of implicit theories has been demonstrated across a variety of ages and settings. Mercer and Ryan (2009) found that theories of learning operated across a continuum and could be influenced towards either an incremental or entity orientation. Burke & Williams (2012) demonstrated that children's concepts of intelligence, including implicit theories, could be altered by a thinking skills intervention.

Teacher Talk as Evidence of Implicit Theories of Learning

Teachers' beliefs about others structure how they understand and react to learners and learning outcomes (Dweck, Chiu, & Hong, 1995). Language is one tool teachers use to create effective learning environments (Johnston, 2004). Across content areas and age groups, teachers' talk can positively or negatively impact how students approach learning. Teachers' oral feedback has been shown to contribute to increased student effort on math problem solving tasks (Siegle & McCoach, 2007). Teacher talk also influences problem solving behaviours among preschool aged students (Pawlina & Stanford, 2011).

Due to the importance of context in learning and bearing in mind the dynamic nature of implicit theories, we believe that thoughtful consideration of the ways in which implicit theories of learning are evidenced by teacher talk is warranted, with particular attention to how teacher talk may be influenced by instructional context. We recognize that teacher beliefs drive their behaviour including their talk (Splitter, 2010); however, we know little about how a teacher's moment-to-moment, classroom-based talk reflects their implicit theories of learning. Therefore, this manuscript addresses the following research question: How are implicit theories of learning evidenced in the teacher talk of one upper grade elementary school teacher?

Methods

This study is inductive and draws on ethnographic methods, a long-term systematic study of a group of people that prioritizes the use of participant observation (Erickson, 1985). Discourse analytic methods, the close analysis of naturally occurring talk within an identified context, also used (Mercer, 1995).

In a previous study, ethnographic data were collected and analysed to reveal one upper-elementary teacher's use of culturally relevant teaching and how that teaching related to classroom interactions (May, 2011a; May, 2011b). On average, across two school years, the first author visited the classroom twice a week across both school years with most visits lasting between one and three hours. Field notes were expanded as soon as possible after the visit (usually within 24 hours). Classroom talk during instructional times was audio and video recorded. Additionally, five semi-structured interviews were conducted and multiple types of classroom artifacts were collected. Given the large body of data and the recognised quality of the teacher, it was determined that a secondary analysis incorporating the use of teacher talk in this upper elementary classroom would contribute to our evolving understanding of implicit theories of learning.

Data Sources and Analysis

This paper uses extant data (interviews and classroom observation data) to closely examine the ways in which this teacher's talk reflected implicit theories of learning using Charmaz's (2010) description of grounded theory. In the first cycle of analysis, two members of the research team independently coded the teacher's talk extracted from the five semi-structured interviews for the type of implicit theories of learning described. This analysis resulted in initially identifying Gail's talk as overall more reflective of an incremental theory of learning. The second level of analysis focused on reviewing the classroom observation/talk data to examine how an incremental theory of learning was presented during classroom instruction, particularly in the teacher's talk. During this analytic level, Gail's talk was found to be dynamic, fluctuating within and across instructional tasks, and along an entity-incremental theory of learning continuum (see Table 1 for examples).

<u>Theory of Learning</u>	<u>Learning Characteristics</u>	<u>Examples: Quotes</u>
Entity	<ul style="list-style-type: none"> ● Ability grouping ● Expectations match perceived potential 	<p>“Number 15 isn’t a hard question.”</p> <p>“The point is to write a good story.”</p>
Incremental	<ul style="list-style-type: none"> ● Challenge students ● High expectations for learning ● Feedback connects actions and outcomes ● Encourage problem-solving ● Support personal learning goals ● Emphasize persistence 	<p>“I’ve been working really hard to challenge him more in school because I don’t feel like he’s challenging himself enough.”</p> <p>“So, what did we learn from that?”</p>

Table 1: Examples: Characteristics of Coded Teacher Talk

Further analysis revealed that this fluctuation in the theory of learning reflected in the teacher’s talk seemed to relate to the amount of autonomy the teacher had in any given instructional task. For example, we found that institutional assessment benchmarks and other types of mandated requirements appeared to foster entity-oriented talk from Gail. In contrast, during an activity that Gail led (e.g., practicing writing process), she focused more on incremental-oriented teacher talk.

Using these initial patterns, we moved into a third cycle of analysis that would allow us to examine theories of learning and teacher talk as bound by task and its level of autonomy. We reviewed the classroom observation recordings to identify and transcribe classroom activities that represented the range of events along a teacher autonomy continuum, from district-mandated tests and practice assessments to morning community circle meetings and loosely structured holiday activities. We determined whether an activity was considered as a high, medium, or low teacher autonomy task based on the amount of flexibility and freedom the teacher appeared to have in executing the task. We acknowledge that these activities are only 7 of many events observed as part of Gail’s daily instruction and yet they serve as a proxy for tasks that teachers have freedom with and those they do not. Table 2 provides an overview of the final seven activities we used in the line-by-line analysis of teacher talk as it related to implicit theories of learning during the next level of analysis.

<u>Activity</u>	<u>Description</u>	<u>Autonomy</u>	<u>Examples of Teacher Talk</u>
Morning Meeting	Most mornings began with a brief meeting with the primary goal of community building. Class participants shared outside-of-school happenings and their thoughts about school occurrences.	High	<p>“...I’m so excited that everyone wants to share...”</p> <p>(It is notable that very little teacher talk occurs during this activity; this is a time for student voices to be heard.)</p>
Holiday Activity	The day before the semester break, the day was spent engaging in holiday-related activities including movies and parent-led crafts and games (e.g., the Dreidel game, reindeer craft). On this day, the class was watching <i>Polar Express</i> while making ornaments with Gail’s assistance. Gail debriefed with the class about how it went.	High	<p>“That’s right. You are learning something new, aren’t you?”</p> <p>“Okay, that sounds like a problem that you need to solve.”</p>
Literature Circles/Readers Workshop	Students have selected from three teacher-provided book choices. After a brief reminder by Gail of the individual goals they had set for their reading time, class members spread out across the room and read their books then met with others who had selected the same book in literature circles.	Medium	<p>“How did our reading go today?”</p> <p>“You set good goals for yourself.”</p> <p>“Anyone else have anything to notice?”</p>
Science Lesson	The class read a brief text provided by the district-provided FOSS kit on muscles then engaged in an activity that illustrated muscle strength and stamina. Throughout the lesson, class members were adding information to the class inquiry chart.	Medium	<p>“Does that answer any of our questions?”</p> <p>“What was something you just learned from what we read?”</p> <p>“That’s a good idea.”</p>
Reading-Social Studies Integration	As a part of a unit that integrated teaching comprehension strategies with the Civil Rights Movement, Gail read aloud a book, <i>Cracking the Wall</i> (Lucas, 1997), to the class. The read-aloud was interactive with Gail thinking aloud and children spontaneously sharing comments and questions (see May, 2011a; May, 2011b) for more on how this instructional practice took place in this classroom).	Medium	<p>“I can tell that you already know a lot about this story.”</p> <p>“Guys, I’m real frustrated...you really do a really nice job but while some of us are talking about the observations, there are other conversations going on.”</p> <p>“You talked through the whole book saying awesome things, but I want somebody else’s voice.”</p>
Social Studies Benchmark	Once during the year, the district mandated a practice test for the state Social Studies exam. Because Social	Low	<p>“Okay, if you are finished with your test and you are working on your reading or your writing, then you</p>

	Studies state exam results were not high stakes (e.g., included in the school’s ranking, etc.), Gail used this test as an opportunity to teach content while fulfilling the requirement that they take the exam.		may line up for lunch. If you are still working on your test, then you may hand me your test and then line up for lunch.”
District Writing Benchmark	Every few months, the school district required a test practice for all students in the grade level in which the writing state exam occurred. Because writing was a high stakes assessment and only tested in one elementary grade level, participant performance was monitored and used for subsequent instruction.	Low	<p>“Right now, you’re reading quietly.”</p> <p>“Do an awesome job. I know you can. Be creative.”</p> <p>“You cannot add any paper. You cannot write down here. It has to be on the lines. That’s the only part they’re gonna’ grade.”</p> <p>“You should write a story that is this long. If your story is this long, it shows me that all you really did is answer the question.”</p>

Table 2: Activity Descriptions and Level of Teacher Autonomy with Examples of Teacher Talk

Finally, a dynamic recursive process was utilised for subsequent collapsing of coded data, resulting in the creation of three main categories of teacher talk: 1) fostering independence; 2) expectations for learners; and 3) extension of learning. These three main categories were created to include examples of both incremental and entity-oriented teacher talk and were used in the final analysis of how the implicit theory continuum was represented by Gail’s talk within each category, and how teacher talk varied when engaging in instruction across various contexts.

Fostering Independence

Fostering independence includes instances of teacher talk in which students are encouraged to work through challenging and/or potentially frustrating situations without reliance on direct teacher intervention. This category consists of teacher talk focused on resolving conflicts, solving problems, and responding effectively to tasks or situations perceived as difficult or challenging. Talk that fosters independence may incorporate a focus on awareness of how behavior affects others, self-regulation, and self-determination through choice-making. Talk that is supportive of flexibility in problem solving or encourages the use of new or different learning strategies may also fall into the category of fostering independence. For example, Gail said, "I don’t need them to be completely successful at that but just so they can problem solve and that they can be independent..." (interview transcript, January 29, 2006).

Expectations for Learners

Teacher interviews and transcripts of instructional talk during classroom activities provide evidence for Gail’s high expectations for learners; however, her expectations for learners were not always perfectly aligned with district mandated requirements. At times Gail’s talk explained how she navigated the differences between her expectations for learners and the

expectations of the school curriculum. An example of this type of teacher talk is found in a Gail's description of one of her students. Gail stated,

...I think there are some limits that are preventing her from shining as much as she can. 'Cause she doesn't look, like the creativity and how artistic she is, you don't see that in the classroom. Like she does what's expected of her and that's it and does it perfectly. (interview transcript, June 22, 2006)

In this example, Gail references both limitations preventing this student's performance, as well as expectations that the student is required to meet. Characteristics of talk within this pattern of language include direct or indirect references to important factors in student learning, a focus on setting learning goals, and/or the application of labels to student abilities or classroom tasks and activities.

Extension of Learning

This language pattern involves language related to student acquisition of knowledge, making progress, or the importance of learning. Teacher talk in this category describes aspects of learning and instruction such as moving beyond grade level requirements or supplementing school curriculum with additional resources. In short, it involves challenging students to pursue learning. Gail's talk provides evidence for pushing students to analyse information, engage in inquiry, and pursue learning goals based on individual areas of interest. Talk associated with extension of learning also demonstrates the extent to which Gail encourages students to generate knowledge. The following example is reflective of the types of teacher talk that were categorised as extending learning: "I want it to seem like we're learning it together...I always want it to go further...and I don't feel that [only] questioning is really an effective way of starting conversations." (June 22, 2006)

Prolonged engagement, persistent observation, and triangulation were employed to safeguard trustworthiness of the findings reported in the next section. As the research team included members with both emic and etic perspectives of the data, frequent meetings and discussion were important to the process of categorising data, as well as interpreting and clarifying findings.

Findings

We found that Gail's language was indicative of both incremental and entity theories of learning in ways that were dynamic, overlapping, and related to the types of instructional tasks. During individual interviews, Gail talked of her desire to teach in ways that aligned with an incremental theory. However, we found evidence to suggest a relationship between the level of teacher autonomy afforded during classroom-based tasks and the implicit theory of learning reflected in the teacher's talk during those tasks. During high autonomy tasks, teacher talk appeared to be more closely aligned with an incremental theory of learning, with less use of entity-oriented talk. Although incremental talk was present across low, medium, and high autonomy activities, instances of entity talk increased during medium and low autonomy tasks, surpassing the amount of incremental talk. See Table 2 in Methods section for an overview of

the ways in which teacher talk was determined to vary across contexts, as well as by level of teacher autonomy.

We now turn to our first finding; Gail's talk fluctuated along the entity-incremental continuum of implicit theories in ways that were dynamic and overlapping. Specific examples are provided to illustrate the complex nature of the talk observed and to facilitate consideration of the ways in which teacher talk may be influenced by contextual factors. Following, we describe how a relationship appears to exist between the level of teacher autonomy afforded by instructional tasks and the type of implicit theory reflected in this teacher's talk. We demonstrate how activities that afforded low teacher autonomy were conducive to entity-oriented talk, whereas activities that afforded high teacher autonomy facilitated incremental-oriented talk.

Dynamic and Overlapping Nature of Teacher Talk

Gail had previously been identified as an effective teacher. During classroom visits, positive and supportive interactions between teacher and students were consistently observed. Furthermore, initial coding and data analysis indicated that the majority of Gail's talk was oriented towards the incremental end of the implicit theory continuum. However, subsequent analysis and categorization of our data showed that Gail's talk reflected both entity and incremental-oriented talk.

During teacher interviews, Gail's talk revealed her belief that hard work and meeting challenges are important aspects of teaching and learning. For example, while discussing a particular student, Gail reflected on the performance of the student and herself:

I've been working really hard to challenge him more in school because I don't feel like he's challenging himself enough. That makes me feel like a failure as a teacher that I've had him for two years and haven't taught him to challenge himself enough. (interview transcript, January 29, 2006)

Rather than simply defining herself as a strong or effective teacher (which would align with an entity view of learning by holding an ability as fixed), Gail talked about *working hard* to challenge this particular student. Gail's talk implicated her expectation that students should be challenged, and should also seek to challenge themselves. Within this single example; however, Gail's talk simultaneously hinted at an entity view of learning. She described her feelings of failure for not having met her own high expectations for teaching and for motivating students to seek challenges. By assuming full responsibility for this outcome, Gail seemed to disregard the student's own level of effort and motivation to challenge himself. In this example, she recognised her own effort as critical to student learning, but not the role of the student's own approach to learning. Gail described herself as a 'failure' for her perceived 'inability' to motivate a student. This and other expectations of self and students were often a focus of Gail's talk, and those expectations influenced the ways that her talk reflected views of learning. The context appeared to shape Gail's talk.

Teacher Talk and Instructional Context

Consistent with the findings of previous research, (Agee, 2004; Bomer, 2005), Gail sometimes indicated a tension between constraints placed upon her teaching by external sources and her own goals as a teacher, which may have influenced the types of talk used in the

classroom. The school district in which she worked had significantly increased the use of prescribed curriculum and monitoring of teacher instruction. Students were expected to master state standards at increasingly higher levels as the district's instructional planning guides for teachers became more detailed and scripted. Gail found ways to stay true to her own teaching goals but had to carefully negotiate multiple sets of expectations. In her interviews, Gail spoke candidly about the various expectations for students held by those inside and outside the school walls which did not prioritize the same instructional approaches.

Gail's classroom talk reflected her need to facilitate the class in ways that addressed multiple, and at times competing, requirements. An example of this talk was found during a mandated a Social Studies benchmark assessment which offered low teacher autonomy. Introducing it to her students Gail remarked,

The announcement [this morning] said that we could start taking it beginning today. We've just started Human Bodies and Explorers. I think since we've already started those things, we should go ahead and take care of this and get it out of the way so that we can get back to our units that we've been working on. (classroom transcript, January 9, 2006)

Gail referred to the principal's morning announcement notifying teachers of the exam administration window, and then made explicit her thinking about instructional decision-making. Her description of the test as something to "take care of" in order to "get it out of the way" communicated to her students how she valued this activity. Gail's talk in this context also alluded to the continuum of implicit theories that potentially undergird her actions as she suggested that she wants to place her focus on the activities in which learning takes place. To Gail, active engagement with students in learning activities was more important than an external measure of student learning.

The previous examples illustrate the dynamic, overlapping nature of Gail's talk. It included utterances that could be interpreted as both entity and incremental, and reflected the influence of the instructional context. Gail's talk did not strictly reflect one implicit theory of learning. Rather, it reflected the continuum of implicit theories as outlined by Dweck (2006). There were occasions when Gail referred to students using specific labels (i.e., smart, creative) At other times, she described her students in terms of how hard they worked or how much progress they had made. Her attempts at navigating her own expectations against those of others influenced her teacher talk in ways that suggested both entity and incremental views of learning. Furthermore, Gail's talk was found to vary according to instructional context.

Influence of Teacher Autonomy on Teacher Talk

Gail's talk varied according to the level of autonomy she was afforded by different types of instructional tasks and classroom activities. Teacher and student-directed activities provided more frequent examples of incremental-oriented talk. In contrast, district mandated activities resulted in an increase in the amount of entity-oriented talk. Consistent with our first finding, both types of talk were present across all levels of autonomy, although the amount of each type of talk varied.

Tasks and Activities Affording High Levels of Autonomy

Greater teacher autonomy in curricular and instructional decision-making was associated with incremental language about student ability. That is, classroom activities with more flexibility allowed Gail to explicate and emphasise the student learning process, thus representing an incremental perspective. During a science lesson on muscles, Gail encouraged students to implement note taking as a learning strategy. She not only implied learning, but also promoted flexibility in thinking, "Writing these things down on the side [of your paper] just helps your brain remember it because you're thinking about it in a different way." She closed the lesson with a question that maintained the focus on learning by asking, "So, what did we learn from that?" illustrating her expectation that students would have knowledge at the end of the activity that was not there at the beginning. Gail could have asked different questions to obtain similar information such as asking students to repeat the presented information. Gail also could have asked this question during a low autonomy task; yet, this type of questioning was scarce in the low autonomy activities we analyzed. Gail closed this particular lesson by focusing on what the students had *learned* during the task rather than what the textbook or teacher had said, suggesting interest in the growth of her students as learners.

In another instance, in preparation for literature circle work, Gail asked the class to remember to "push each other to further explain their thinking," referring to a student quote on the wall. Gail not only challenges her students to work hard and focus on learning, but also encourages them to adopt similar approaches when working with each other. Again, this sort of talk was much more likely to occur during classroom activities with high levels of teacher autonomy. We noted limited entity perspectives during these same activities.

Gail's classroom talk suggests a high regard for student growth and personal responsibility and, particularly during activities with high and medium levels of teacher autonomy, focuses on choice-making. She framed situations students might perceive as difficult as challenges. These challenges were not limited to the academic domain, but also included responding to frustration and maintaining self-control. Gail often encouraged students to independently solve problems and directed students toward self-regulation of behaviour. For example, when, during a high autonomy activity, a student reported a disagreement between two classmates, Gail responded, "Oh that sounds like a problem we can work out. I'm not gonna' tell 'em who can put it in" (classroom transcript, December 15, 2005). This brief response acknowledged the student's concern while also communicating an expectation that students should work to resolve minor conflicts on their own. This talk also served as an indirect communication of Gail's expectations to other students. Students close enough to hear, including the two classmates having the disagreement, were provided the expectations but not how or what the outcome should be. The high teacher autonomy during this interaction facilitated Gail's ability to be flexible in her response and allowed her to give students time to resolve their own conflict. Had a student conflict arisen in an instructional context with lower teacher autonomy, Gail may not have had the same flexibility.

This sort of flexibility was also used to support student response to frustration and take advantage of opportunities to challenge students and engage them in mini self-assessments and self-regulation of behaviour. "Can you handle it?" and "Steven, do you have it under control?" (classroom transcript, December 15, 2005).

As observed during classroom activities, Gail also expressed the importance of behavioural self-regulation during individual interviews. She stated in one such interview that,

“Self-control is just something I felt like we needed to work on” (interview transcript, January 29, 2006), indicating her belief that students can improve self-control by working on it.

Evidence of incremental teacher talk was not isolated to activities with the highest autonomy. For example, work towards her inquiry-oriented goals for her students was prevalent amongst the high autonomy tasks. Within the context of medium autonomy tasks, Gail maintained some ability to explore student interest areas. Gail’s talk indicated her inquiry-oriented goals for her students. Students’ interests also influenced Gail’s consideration for navigating the multiple, and at times conflicting, expectations held by herself and others,

I didn't even want to go into the war stuff...Bradley I think said that he had an uncle who lived in Vietnam...He said he had an uncle who lived in Vietnam and ate rats there and I was like oh, got to do something about that. So I was like, was he in a war? And he said yeah, he was in the war there. And so none of them, they'd heard of it but they didn't really know. And I learned a lot too...And it works so nicely too because...they've been noticing that you know people are upset about the war in Iraq and that people are protesting and they see it on TV on the news because stuff is happening here. (interview transcript, January 29, 2006)

In this instructional situation, Gail maintained enough autonomy to allow authentic student interest to take control of a unit originally focused on a specific reading comprehension strategy. In this way, she navigated school expectations and personal expectations including the expectation that students should engage in inquiry through exploration and critical thinking.

Based on her implied belief in the importance of extending one’s learning, it is not surprising that Gail also spoke highly of a student who worked hard over time to achieve learning goals. She described one of her students as follows:

Ava is such a hard worker...she is one who last year when I got her, she was not reading very much at all...she's made huge jumps...I mean it's amazing the things that she can do now. She's reading like crazy. And before she just wasn't even choosing to read. (interview transcript, January 29, 2006)

Gail’s description focused on student effort and individual growth rather than intelligence, attributing her student’s success to effort. This focus could also be seen in the emphasis she placed pushing student learning beyond basic skills.

I'm teaching them how to interact with a book. I'm teaching comprehension, I mean just to be general about it. Um, I'm teaching them to think about what's happening in a book and to analyse it and to enjoy the book too and put themselves in the book. (interview transcript, June 22, 2006)

Gail helped her students extend their knowledge through reading by focusing on strategies for obtaining deeper meaning from the text. She also indicated her value of reading for meaning and enjoyment. As with other examples, Gail teaches students to think for themselves rather relying on the transmission of information from their teacher allowing them to develop strategies for learning that they can apply to other areas of life. “I really want my kids to be thinkers when they leave me, and not just about academics but about life, and I don’t necessarily need them to accomplish every skill I teach” (interview transcript, January 29, 2006).

The preceding examples demonstrate Gail’s ability to engage in classroom talk more closely aligned with incremental theories of learning when afforded a high level of autonomy. Although high levels of teacher autonomy did not completely eliminate the occurrence of entity-oriented teacher talk, it did appear to facilitate teacher talk that focused on growth, independent

problem solving, and student learning. We now turn to an examination of Gail's talk in low autonomy situations.

Tasks and Activities Affording Low Levels of Autonomy

Teacher talk was much more likely to reflect an entity theory of learning during activities with greater limits on instructional freedom, such as a district-required writing benchmark monitoring progress towards the state assessment with strict instructional procedures. In discussing the purpose of the activity with her students, she made statements such as "The point is to write a good story," suggesting that only a particular type of story, as determined by an external measure, is "good." This language contrasts with talk during other writing activities with comments more reflective of an incremental theory such as "The purpose of this activity is to improve your writing." Though Gail continued to use encouraging talk during low autonomy activities, the talk used static characteristics. For example, "Be creative," suggesting that students could either be creative or not, not working hard to express creativity. This type of binary, entity-oriented teacher talk was uncommon in the context of high-autonomy activities. Yet, as contextual factors restricted her autonomy, entity talk increased.

But even during low autonomy tasks, Gail continued to use incremental language. During one such task, she fostered independence by encouraging students to become aware of their behaviour and the impact that it might have on others, encouraging self-reflection and self-control without directly targeting any individual or providing a specific solution. Rather than asking for specific behaviours, she guided students towards choosing effective behaviours by stating, "There's a lot of moving and talking right now and I want you to think about how that affects people who are trying to concentrate" (classroom transcript, December 5, 2005). This example brings student attention to how movement and talking link to the ability of others to concentrate. Rather than describing student behaviour as good or bad, Gail indicates that students working should be able to concentrate. Even though the nature of the classroom task was lower in teacher autonomy, Gail's language use points to her beliefs that learning is important and that students can make choices to support others' learning. Thus, the low autonomy context did not preclude incremental talk completely.

Gail's talk in low autonomy contexts did, though, include more characteristics associated with entity theories. She used specific labels and assigned particular attributes to student work and responses. Additionally, Gail's talk suggested that her capacity to focus on personal growth and individual effort was limited in these contexts. One such example took place while reviewing the district-mandated Social Studies benchmark assessment. Gail directed student attention to a particular assessment item and used dichotomous descriptors when discussing it:

*Number 15. Go to number 15. Number 15 isn't a hard question, but they've written it in a way that makes it seem hard...All they are asking there is what helps us in our classroom get lots of information quickly and from all over the place. Is it computers, overhead projectors, calculators, or tape players?
Answer it yourself. (classroom transcript, January 9, 2006)*

Here, Gail's did not focus on the question's challenge or direct students to look at the assessment item and "try your best." Instead, Gail described the item as "hard" and failed to encourage her students to think about the question or use their problem-solving skills. She simplified the item

suggesting lowered expectations for students. By describing an assessment item as “hard,” Gail risked inadvertently suggesting that only students who are “smart” should attempt it.

Overall, during classroom activities with a low degree of autonomy, Gail shifted to transmitting information. This shift was reflected in her talk during mandated activities and her talk about those activities. In a context in which transmitting information became the focus, Gail was less able to encourage personal growth or push student learning limits. These growth-oriented practices were displaced by providing the fixed information needed to score well on the assessment.

Due to our initial finding that the nature of teacher talk is dynamic and overlapping in ways shaped by the instructional context, we have provided examples of one teacher’s classroom talk across a variety of instructional situations in an attempt to shed light on the influence instructional context may have had on the talk this teacher used when providing instruction and talking about student learning. Our analysis suggests that instructional contexts affording the teacher higher levels of autonomy may facilitate talk oriented towards an incremental theory of learning. Conversely, in low autonomy instructional contexts, teacher talk oriented towards an entity view may be more common.

Discussion

Conclusion

In this manuscript, we illustrate the impact of contextual factors on one teacher’s curricular and instructional decision-making as evidenced by how her talk varied across different contexts, oscillating between talk suggestive of incremental and entity theories. During classroom activities with high teacher autonomy, Gail’s talk closely mirrored her stated beliefs about high expectations for learners, the importance of student-directed inquiry, and the positive results of effort towards learning. In contexts of high autonomy, there was a dearth of entity-oriented teacher talk. However, entity talk became more prevalent as teacher autonomy was restricted by district requirements. In these situations, Gail’s use of specific labels for ability increased and her talk became more directive and less focused on student exploration and problem solving. Incremental implicit theory was more likely to occur when the teacher had the autonomy to utilise instructional time to emphasise student learning rather than meet specific institutional requirements.

Our examination of teacher talk in the current study suggests that this teacher may have changed her talk to meet the perceived educational objectives in the moment. Such changes in teacher talk may appear as inconsistencies in theoretical beliefs about learning; however, we argue that variations are more likely due to the influence of external demands.

Implications

Recognition of the role of context and autonomy in instruction has important implications for classroom-based learning and students’ self-perceptions, particularly for teachers working within institutions implementing a mandated curriculum. The variation in teacher-talk observed across low and high autonomy tasks suggests that the types of knowledge presumed for the task differed, and that implicit theories of learning may be domain-specific. Teacher task expectations and experiences influence this assumption, and in turn, influence the learner’s

developing conception of task-response strategy-use. An example can be seen with current approaches to student assessment, a prevalent classroom event in this study. Although student assessment information is important for educational planning, assessment practices that focus on a predetermined level of performance to signify achievement (often based on a fixed set of instructional standards or curriculum), it restricts teacher autonomy during instruction, thereby risking restriction of teacher talk as a result.

Multiple experimental research studies have shown that an individual's beliefs about performance are malleable and can be influenced relatively easily through minimal changes in the explicit verbal content delivered by an adult (for a review, see Yeager & Dweck, 2012). It is a logical step to infer that as students engage in new learning tasks, develop problem solving skills, and encounter challenges in the classroom, teachers should consider how their talk can influence student beliefs about performance and ability. Professional learning literature has built on these studies, offering explicit advice for teachers to use their classroom-based talk (Johnston, 2004; Saunders-Smith, 2014). As teachers work to navigate institutional requirements, they will need to consider how those requirements influence the language they use with students. This will be particularly important during instructional activities that hinder teacher autonomy in the classroom.

Student implicit theories of learning can be influenced by teacher talk, yet there is a scarcity of research in this area. This study contributes to the body of work by demonstrating how the instructional context impacted one teacher in one setting. At the same time, it also raises additional changes and illustrates a large number of related, important questions that remain unanswered.

While we did find evidence for changes in this teacher's talk according to context, it is unknown whether the teacher's implicit theory of learning actually changes with regard to what she thinks students can, or cannot, achieve academically. We were also unable to identify whether or not it was the level of teacher autonomy that influenced how this teacher interacted within a particular task.

It may be that the teacher talk used in the low-autonomy tasks was different because of the types of knowledge she perceived as being required. In this case, perceived knowledge that represents absolutes (e.g., for the test) was presented differently because of the perceived different type of learner response required. In learning situations where knowledge was perceived as socially constructed (high-autonomy tasks) the teacher talk elicited more creative and flexible responses by the learner, and thus represented an incremental view of learning.

Further research is warranted to investigate the relationships between implicit theories of learning, teacher talk, and instructional context. Future investigations should consider the level of awareness teachers report with regard to their use of classroom talk. Future work should also attempt to determine the extent to which teacher talk influences student theories of learning. Given our finding that teacher talk varies according to the level of teacher autonomy, the impact of teacher talk on student implicit theories in the context of low autonomy situations is an important area for further study, as there may be important implications for the ways in which teachers talk about learning and student ability, particularly when required to adhere to a particular curriculum or when administering state mandated standardised assessments.

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