If the Script Doesn't Work, Change the Script

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Every career is different, emerging from different circumstances and almost always influenced by unforeseen opportunities and challenges. The script we write will be revised and edited many times. I have found my script changing at important junctures in my career. This reality is difficult to convey to researchers just starting out, but it is important to know. As have others in this series, I hope that some of the opportunities and challenges in my career can inform or support them as they travel similar roads. In looking back on my journey to and through educational research, I will try to show how striving, persistence, and taking risks helped me to forge the path I wanted to travel. I learned that following my own path rather than the current fashion, thinking outside

the box to solve problems, emphasizing the quality of my work and cultivating relationships with schools all helped me to persist and to change the script when I needed to in order to reach my goals.

I Never Knew I Would be a Teacher

I was raised in a middle-class family by parents who had attended 2 years of college – a first in their families. Education was at the center of what my parents wanted for their three children. They sacrificed to send us to Catholic school, convinced that this investment was the best they could make for their children. I quickly took to the academic challenges and extracurricular opportunities I was offered at my Catholic girls' high school. Among those were opportunities for leadership. I was able to use my interest in and talent for art in many ways, becoming the "go-to" person for class art projects. I served as senior class president. I don't think I would have pursued either path had I been a student in a typical co-ed high school. At that time, all the leadership positions in high schools were filled by boys. Girls could, of course, serve as class secretary, and usually did. My high school experience communicated to me that I could do what I wanted, and I would continue to be surprised when circumstances sent a different message, as they would later in my professional life.

In college, I majored in French because I loved it. But, as fate would have it, I met my husband in college and my educational choices began to take a very practical turn. I had to change the script. I needed to think about finding a job after college. I was making this decision right at the intersection of post-World War II American culture, where women like my mother had had very traditional roles, and the advent of the

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Women's Liberation movement. It is said that in the 1950s and 1960s, three career paths were open to women – teacher, secretary, or nurse. At the same time, the women's movement was encouraging us to break barriers. I don't know how the historical time influenced my decision, but I don't believe I chose to teach because it was my only option. Nor was I one of those who always wanted to be a teacher. Rather, I had had the privilege of a good education and I loved to learn, so the profession of teaching was genuinely appealing and was a good complement to my French major.

My first teaching job was in a well-resourced suburb in the Boston area (it was the only job I was offered at a time when teaching jobs were very competitive). I quickly learned to love my 7th and 8th grade students. One of my vivid memories is getting a reprimand from my principal for an anti-Vietnam War Memorial Day assembly I helped my Student Council advisees produce!

As I became a more experienced teacher, I began to "notice" more. I became aware of the different learning trajectories among my students and began to think about why. I began to experiment with different instructional approaches, hoping it

would make a difference. As I look back, I realize that this was the birth of my abiding interest in and passion for how students learn.

I pursued this interest through a master's degree in reading and spent the next 10 years as a reading specialist in suburban and city schools. During this time, I learned two things which were to influence the rest of my career. First, I realized that I was not satisfied with what I knew about learning and instruction. Although I sought out opportunities to learn more about how to improve, there were few. I didn't know anything about research and would have had no idea how to access it. Disappointingly, I felt alone in my quest for ideas about how to be a better teacher. Gradually, I lost interest in working in an environment where professional development was both absent and devalued. I wanted more opportunities to learn.

> **After about 15 years in public schools, I knew I had to strive to find some answers to these questions. Even though I had assumed I would be a teacher forever, I realized that it was time to change the script again.**

The second lesson that I learned came from my students. I taught classes that used to be called "remedial reading." All my students had experienced difficulty in becoming proficient readers. By the time they were in middle school, most had developed low self-concepts as readers. In addition, they experienced this as a stigma. Just entering my classroom gave them the message that they weren't smart. Their low self-efficacy made effort seem futile; they didn't think they could learn. I tried all my

instructional strategies, but I wondered if I really made a difference for them. Only later in graduate school did I realize that their challenge may have been low self-efficacy, a motivation issue. After about 15 years in public schools, I knew I had to strive to find

some answers to these questions. Even though I had assumed I would be a teacher forever, I realized that it was time to change the script again.

In 1985, a job offer to my husband from the History Department at University of Michigan provided an opportunity. I had begun a graduate program in Research and Evaluation at Boston College before the move and found myself falling in love with research. But it was a complete surprise to me that I might consider getting a PhD! I was so focused on learning what l craved that it didn't really occur to me that this decision might mean a whole new career. Once in Ann Arbor and following the bread crumbs, I learned about the Combined Program in Education and Psychology at Michigan and sought entry into the very unfamiliar world of academe.

To contemplate starting a PhD at that age, with two school-age children, was risky. I was giving up what I knew (teaching) and embracing very new challenges. It meant persistence – studying for the GRE again at 39, including 5 A.M. study sessions before the kids got up. I hadn't stopped to consider that I would be almost old enough to be the mother of my 22-year-old classmates. I learned the designation "returning woman," used to describe those of us crazy or ambitious enough to embark on the challenges of a PhD and a second career at such an advanced age!

Finally! I Get to Learn Something New!

Beginning my PhD was both exhilarating and daunting. I had not been a Psychology major like many of my colleagues in the Combined Program and I felt intimidated. To my surprise, my advisor, Scott Paris, told me how valuable my experience as a teacher was. That boosted my confidence. This is also where my experience teaching students with reading difficulties and low self-efficacy became relevant. I gravitated to the literacy research being done by Karen Wixson and Annemarie Palincsar. My interest in

classrooms led me to Phyllis Blumenfeld's research on motivation in classrooms. Scott Paris's research integrated literacy and motivation and he became my dissertation chair. My dissertation research examined the development of motivation for literacy in 1st-grade classrooms (Turner, 1995). It remains one of my favorite projects. I was fortunate to receive both the best dissertation award from the School of Education and the best dissertation award from the International Reading Association in 1993.

Figure 2. University of Michigan School of Education

I dove deeper into motivation by studying with Marty Maehr and Paul Pintrich. Marty had just come to Michigan from the University of Illinois, where he had been developing a new theory in motivation, achievement goal theory, along with Carole Ames, John Nicholls and Carol Dweck. I was very fortunate to have participated in an intervention study led by Marty and Carol Midgley at schools in Ypsilanti, Michigan. There, we worked with teachers to promote an emphasis on mastery goals in their classroom instruction. I loved the mix of theory and practice. It was the first of many classroom projects that were to become my life's work.

In terms of studying motivation, I was in the right place at the right time. Michigan was becoming a hub of motivation research, and goal theory would go on to dominate motivation research for several decades. It was an exhilarating time for motivation research and the Combined Program provided an exceptional experience. Our professors were extraordinary mentors and they created professionalization

opportunities for all of us. My fellow graduate students in motivation and I all began our careers fortunate to work with goal theory pioneers and all of us have continued in goal theory or motivation research. Indeed, our training made us a force to be reckoned with. At AERA in the 1990s, we were called the "Michigan Mafia" (behind our backs). Fellow graduate students Eric Anderman, Tim Urdan, Lynley Anderman, and Helen Patrick have become lifelong friends and colleagues. At AERA, I met Debra Meyer, a fellow graduate student from University of Texas. Finding similar interests, we began a long-distance collaboration that has lasted to this day. Much of what I have learned and accomplished I owe to Deb's collaboration.

Figure 3. Penn State Department of Education

The only thing harder than graduate school was to find a job! Not only was I older than most job candidates, but I was also married with a family. My husband was a tenured professor at Michigan, and he wasn't easy to "move." To pursue a professional career, I would need to find a position elsewhere, but that meant splitting up the family. This is a very real dilemma that many women face, and I knew women who gave up their careers or took a poor second best because the husband's career took precedence. I was not going to do that; I had to embrace the risk. I revised the script again, taking a position in Educational Psychology at Penn State and moving there with our 10th grade son. The high school in State College was a great experience for our son, and he and I remained there until his

graduation and my move to Notre Dame, but it was a long three years.

Obstacles Along the Way

An offer from Notre Dame to my husband provided the opportunity to negotiate a "spousal hire" for me. Although we were grateful to live together again, this move proved to be a major challenge for me professionally, as it is for many in two academic couples. I left a tenure track position at Penn State for a non-tenure track assistant research professor position at Notre Dame. It was a risky decision. With no colleagues at Notre Dame and no shared interests with Psychology faculty (there was no Education Department), I had to find a way to make it work.

At the beginning of this essay, I mentioned that striving, persistence and willingness to take risks were threads woven through my research career. By far, the challenge that required the most striving and persistence was making a place for myself at Notre Dame. As many "spousal hires" know, it is the *spouse* who received the initial offer and the opportunity for the other spouse can vary from a good to a poor fit. The chair of Psychology seemed mostly unaware of my presence and assigned me an office that had been a workroom in a then-disused lab. I was never introduced to other faculty and had to try to make those connections myself. My position as assistant research professor offered me little status among tenure track faculty. I was left to try to make connections on my own, just striving to "be seen." I don't think this

Figure 4. University of Notre Dame Psychology Department

treatment was intentional, but it signaled to me how little the Psychology Dept. was invested in my success and that I would have to make my own way.

During this difficult time, I was fortunate to receive crucial support from Carol Midgley, a Michigan mentor. Carol believed that I was on to something with classroom observations as a measure of student motivation. She invited me to write a proposal with her to the Spencer Foundation. The Spencer Grant provided me some visibility and credibility among peers, although the general sentiment among the Psychology faculty was that "applied" research was second class. At the same time, I was striving to move to a tenure track position, which took several years. I relied on colleagues outside of Psychology to make my case, and I was formally granted tenure, not in Psychology, but in a department consisting of faculty from many different disciplines. A few years later, I negotiated tenure in Psychology. It was only in my last year at Notre Dame that I achieved full professor status. But I could not have achieved my goals without continual striving to make my way and a great deal of persistence.

One of my proudest accomplishments at Notre Dame was the founding of the minor in Education, Schooling, and Society. We attracted many students who were interested in teaching and education. The minor provided an opportunity for many students in both Psychology and other majors to explore topics in education. It filled a real need given that Notre Dame did not have an education department. The quality of our students soon gave the program status and we were among the most sought-out minors at the university.

Later, as I contemplated retirement, I sought other ways to stay engaged in educational research and to support its dissemination. I was fortunate to serve as editor of the *American Educational Research Journal* for four years along with my outstanding co-editors Mark Berends, Francesca López, Sadhana Putambekar and

Suzanne Wilson. As an editorial team, we sought to invite and publish interdisciplinary manuscripts with diverse methodologies representing a broad range of education research and researchers. It was a rewarding end to a satisfying research career.

Given that I had to create my own opportunities and space at Notre Dame, I set out to follow my path with determination. In the next section I detail some strategies I employed as well as the thrust of my research career – studying motivation in classrooms.

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Why Classroom Research?

My teaching career must have been an important influence in the way I conceptualized motivation research. Teachers are usually keenly aware of their students' responses to instruction and how that affects their learning. Because of my experience, I always thought of student motivation as a classroom issue, not as an individual difference. Granted, students enter classrooms with all kinds of differences, but to be successful, a teacher has to forge with them a shared experience that supports their engagement and learning. The memories of my middle school reading students were still fresh – what could I have done better for them? It was inevitable, then, that I would return to the classroom to study how teachers and students interact to create their learning environment. I was going to be a classroom researcher.

It is important to note that most "classroom" motivation research at the time

(indeed, even today) was survey research. In this approach, or research *about* classrooms, researchers might visit classrooms to administer student surveys, but it was uncommon to observe classroom activity. This social cognitive approach reflected psychology's longstanding emphasis on individual differences and the influence of the cognitive revolution that had established the importance of individuals' perceptions of their environments. But it also acknowledged reciprocal influences of personal and environmental factors. In this view, it was enough to know *what* students perceived in a social setting like the classroom but it was not necessary to document *why*. My experience as a teacher validated my belief that what teachers said and did during instruction was influential in students' motivation to learn. So, while most people were studying students' *perceptions* of their classrooms, I set out to explain how students *formed* those perceptions. I reasoned that most of students' time at school was spent engaging in instruction, yet the effects of instruction were left implicit in motivation research. I decided that teachers' instruction would be the focus of my research on students' motivation to learn.

Answering those kinds of questions meant that I needed to be in classrooms – not just administering surveys, but also observing teacher instruction and student behavior. At the time, this approach was novel in motivation research. Although some theories proposed that certain instructional practices (e.g., emphasis on effort, supporting autonomy) supported student motivation to learn, there was no explanation of what that might look like during instruction.

What exactly might a teacher do and say in a lesson on percentages, for example, that supported student effort or autonomy?

Looking back, I realize that my research career has two phases. Although my central research question, "How does teachers' instruction help explain students' motivation to learn?" didn't change, my methods did. In the first phase, I focused on teachers'

instruction, but documented students' motivation largely through survey responses. I was always dissatisfied with this static approach because it didn't measure the interaction between teachers and students. In the second phase, I adopted different theoretical perspectives and methods to portray the interaction between students and teachers.

Figure 5. 1995 family vacation in NM with sons Peter and Chris and husband Jim

As I embarked on my research career, I realized that my earlier career as a teacher would be an advantage. In every study I conducted, the fact that I had been a classroom teacher and understood situations from a teacher's perspective helped me establish relationships with the schools and teachers I wished to work with. My advisor, Scott Paris, had been right about that! I learned to mention that fact very early in every conversation I had with superintendents, principals and teachers. It was a great tool for getting my foot in the door.

In my first study after graduate school, we investigated middle grade students' motivation to learn mathematics from the theoretical perspective of "flow" theory. In order to justify that instruction was pivotal in motivation, as I believed, we needed a theory of "good instruction" for our observations. For this, we relied on Debra Meyer's dissertation research on scaffolding, which theorized effective instruction from a Vygotskian perspective. From this perspective, teachers who negotiated meaning with students, transferred

responsibility to them when ready, and supported effort would offer moderate challenges, which would support student involvement. In contrast, teacher "telling," the asking of "right answer" questions or tasks that required memorization of algorithms would diminish student motivation because it did not offer challenges and thus, students would report more boredom.

As we would do in a few studies, we observed teachers' mathematics instruction in seven classrooms using a rubric based on scaffolding. We asked students to report their experience of instruction using an experience sampling form at the end of each class. Teachers who scaffolded their students' learning had students who reported more flow or involvement (Turner et al, 1998), as we predicted.

Our contribution was to *interpret* students' perceptions of classroom instruction by specifying *why* they reported involvement or boredom. Our analyses of classroom instructional practices provided empirical evidence that teacher discourse and behavior mattered to student motivation. It is worth noting that this research was done with no external funding; my graduate students and I did all the observations and analyses in long distance collaboration with Debra Meyer. This type of collaboration, often involving colleagues from graduate school, was key in all my work. These collaborations contributed both to the development of my thinking and to the actual classroom research and data analysis.

Extending Classroom Research

Although the script I had written assumed that I would have research colleagues at my university, that had to be revised again when I moved to Notre Dame. To implement the Spencer grant, I relied professionally on my Michigan colleagues, Helen Patrick and Deb Meyer as well as graduate students from Michigan and Notre Dame. We did a large 2-year longitudinal study in three districts,

including intensive observations in 6th and 7th grade classrooms in one district. Using achievement goal theory, we studied the relations between the classroom learning environment (e.g., students' perceptions of the classroom goal structure and teachers' instructional discourse) and students' reported use of avoidance strategies (self-handicapping, avoidance of help seeking). Achievement goal theory proposes that teachers send messages about competence that are important in their classroom. These messages, or goal structures, influence students' goals for learning and thus their motivation to learn. The suggestion is that students are more likely to adopt the goal structures emphasized in their classroom. A mastery goal structure sends the message that increasing competence through effort is most important. A performance goal structure sends the message that demonstrating competence by outperforming others is to be desired. Research has demonstrated that mastery goal structures are related to positive motivational outcomes. However, teachers can be unaware both that they *are* sending those messages and *how* they do so. We wanted to document the kinds of messages being sent in classrooms and whether students reported more or fewer avoidance behaviors in relation to their perceptions of mastery or performance goal structures.

We observed teachers' mathematics instruction and audio-taped teacher and student discourse. We analyzed teacher discourse using Deb Meyer's categories of scaffolding and non- scaffolding instruction. Scaffolding discourse supports effort by offering supports to students as they learn and then transfers responsibility to them, conveying confidence in their ability to increase competence. Non-scaffolding discourse highlights the importance of "right answers," sending the message that a student is either "smart" or not. This message could encourage students to compare their ability to others, thus discouraging those who can't compete. I will always have vivid memories of those classrooms, now, more than 20 years later. I

can recall how one teacher encouraged her students to help each other and how she celebrated their progress. Her message was, "All of you can learn if you try and I am here to help you." I can also recall how a different teacher sent messages that some students weren't smart, thus discouraging effort. If students did not know the answer, the teacher asked another student, but did not usually stop to explain the answer, depriving students of opportunities to learn. This practice sent the message that only some students could learn and encouraged students to adopt avoidance behaviors as a way of protecting their self-worth. By analyzing the discourse in our observed classrooms for its mastery or performance goal emphases, we were able to demonstrate that students in classrooms where the emphasis on mastery was high and teachers scaffolded learning, students reported significantly fewer avoidance behaviors, a positive motivational profile.

This was the second study in which classroom observations and instructional discourse analysis helped us understand *why* students perceived their classrooms as supportive (or not) and how these perceptions were associated with certain positive or negative behaviors and beliefs (Turner et al, 2002). Looking at the research as a whole, I was becoming convinced that to really understand students' motivation to learn, we had to document what they experienced in the classroom, and this had to include teacher instruction. In an attempt to make the case for motivation research *in* classrooms, my colleagues and I argued our rationale in several articles (Turner, 2001, 2010; Turner & Meyer, 1999; 2000; Turner & Patrick, 2008).

Next Step – Taking it to the Teachers

It might seem obvious that observing very different patterns of discourse and practices in classrooms led me to wonder what might seem obvious now. How do teachers understand and explain their instructional practices? Did they have theories of motivation? When we asked the teachers in the Spencer-funded study how

they engaged their students, their answers revealed implicit, or lay, theories of motivation. One teacher claimed that she "made learning fun." From our perspective, she had a sophisticated implicit understanding of how to involve and support students in learning, but she did not use our theory or language to explain it. More disheartening, some of the other teachers seemed to hold implicit theories that threats and demeaning remarks would "motivate" students to obey the rules and learn. I realized that although our research was contributing to the literature, it wasn't helping teachers. Some might even say we were using teachers to advance our own research ends. It didn't seem ethical to study teachers but not give them an opportunity to think about how their instruction affected their students' motivation. After all, my overall professional goal was to contribute to engaged learning. I came to believe that this goal would be impossible unless we worked with teachers. To me, this was the next logical step in acknowledging and demonstrating the importance of classroom interaction in motivation to learn.

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Taking it to the Teachers

Teachers are keenly interested in motivating their students, but they cite it as a constant challenge. This fact provided an opening in recruiting local teachers at one intermediate school in Indiana who were dissatisfied with their students' "motivation." Initial conversations with teachers revealed that most thought motivation was a trait that could not be changed. Therefore, I wanted to convince these 5th through 8th grade teachers that it was instead a state, one that could be altered through their instruction.

Beginning in 2005, I met monthly with these six mathematics teachers to discuss a motivational framework that I tried to tie

closely to instruction and then to student motivation. I had become dissatisfied with goal theory, partly because it didn't make sense to teachers. The notion that students' (unobservable and implicit) goals to increase or demonstrate competence was related to their behavior in the classroom was a stretch for teachers. Teachers couldn't "see" students' beliefs the way they could "see" their behavior. For example, several teachers in this study defined motivation as "bringing a pencil to class." In fact, such behavior may have no relation to achievement goals and may just reflect how teachers and students "do school." For teachers, that is covering the curriculum and for students it is cooperating. Motivation to many teachers means following the rules and doing what is required so that teachers can do their job. Motivated students are those who "bring a pencil to class," and unmotivated students are those who don't cooperate. In this enactment, it is hard to see how goals figure in.

I wanted a theoretical framework that would both make sense to teachers and that had strong empirical support. Helen Patrick (in press) explains this very well in a recent chapter. She argues that some motivation constructs "lend themselves to practical application better than others" and that "motivation researchers could better meet teachers' needs if researchers began with issues or questions that teachers themselves identify as important and relevant to their teaching" (p. 8). Thus, the motivational framework I chose was a hybrid, derived from two existing theories, self-determination and interest, and more relevant to classroom reality. This was a departure from traditional motivation research where researchers mostly worked within one theory and some even worked within one theory for a career, but without documented value for communicating with teachers. This hybrid theory focused on student engagement, the teachers' main concern. It proposed that students are motivated to learn when they feel *competent*, are granted some *autonomy*, feel that they *belong* in the classroom, and when their

learning is *meaningful*. I placed emphasis on *why* these features of instruction would be motivational and *how* certain instructional practices could support student competence, autonomy, belongingness and meaningful learning. We also discussed how teachers could tell if a student felt competent; for example, by greater participation. Participation was one thing all teachers wanted. At the end of each meeting, teachers agreed to try out some of the instructional practices we had discussed. These ideas were clearly new to the teachers. At the outset of the project, the tools they used were mostly extrinsic, like offering praise and rewards. When that failed, some resorted to threats and punishments. I was suggesting that they might think differently and that they risk trying new practices. I didn't know if teachers would be receptive to this approach, but I risked it because I thought they would see differences in their students' engagement. And their current practices weren't working!

> **I was asking them to think differently and to risk trying new practices. I didn't know if teachers would be receptive to this approach, but it was a risk I needed to take because my goal was to make a difference.**

The methods also included observing and videotaping teachers' instruction. I then edited the video to several classroom events and discussed the lesson with the teachers. I was interested in the instructional decisions teachers had made and how the teacher viewed student responses in terms of motivation and of learning. I also conducted interviews with each teacher at the beginning and end of the project. This multi-method approach proved fruitful not only as a validity check, but also as insight into teachers' thoughts and fears about changing familiar instructional practices.

In Turner et al. (2011), we described three teachers who participated. All three teachers tried to learn the new concepts and

to apply new instructional strategies. Although each teacher took a different path, their efficacy proved to be central in their success, both as an obstacle and as a validation of change when they observed the positive results with their students. One obstacle, a challenge to their efficacy, was fear of losing control if new strategies backfired. The monthly meetings in which teachers asked questions and discussed their experiences provided some support when obstacles surfaced. Incidentally, it was unusual in schools at this time for teachers to be able to meet to discuss instruction, and so this support made a difference. Also important to their journeys was the dissatisfaction they felt with current practice. As one teacher put it, her instruction was "so stinkin' borin' that [students] don't care about it anymore."

Working with teachers this way was both exhilarating and humbling. It was exhilarating to be able to hear their reflections, see their growing understanding, and then see them put changes into practice. In most cases, those new practices produced visible changes in terms of student engagement, the teachers' goal. It was humbling to learn about the challenges that teachers faced on a daily basis from school, district and national policies. This was a time of intense pressure from standardized testing as a result of No Child Left Behind.

This study marked a turning point in my career. For once, I was changing the script because I wanted to! My research had changed from observing and analyzing to establishing relationships and supporting teachers who also had to manage myriad stresses in their professional lives. Out of the four teachers who participated regularly, two made significant changes and two did not. Many researchers would call that year-long effort a waste of time. Not me. I had become interested in motivation because of my experience with my own students. I was in this profession because I wanted to make a difference with real people – students and teachers in school – and I believed that we needed to be in classrooms with them to

make it possible. Maybe I was finally realizing what I wanted to do.

Scaling it Up

Reflecting on my final project and the second phase of my research career, it seems overly ambitious, and perhaps it was. This time, we had the opportunity to collaborate with an entire school with the goal of giving teachers tools to support their students' engagement. Our research questions focused on whether and how our professional development could help teachers change instructional patterns and whether student engagement changed as a result. As I detail below, this project stands out as a culmination of the research I had been doing since the beginning.

We conducted this three-year project at a local, mostly rural, middle school. For the first time in my research career, the principal actively supported our work. She committed all the teachers in the school to the project. Although this was a boon to the research – all teachers could participate, creating opportunities for sharing and discussion – it was also an impediment because teachers did not have a choice about participating. This dilemma would persist throughout the project and is part of the challenge of doing professional development in schools.

> **…we helped teachers form professional learning communities (PLCs) [and] in the project's final year, the school's rating from the state moved from a "D" to an "A," based on student achievement.**

In the first year, we introduced the same four motivational principles from the earlier project to teachers who met in content area groups. Teachers were encouraged to try strategies in their classrooms and to report back to their groups. As in the previous study, it was challenging for teachers to both try new strategies and to adapt them to their content areas, as it challenged teachers' efficacy. For example, one teacher admitted

that she did not know how to ask open-ended questions. Because the principal had committed the teachers to participate, some teachers were seemingly defensive, publicly dismissive of the project, complained about time away from the classroom, and sought to sabotage the project in small ways. It also challenged some teachers' epistemological beliefs, because our approach contradicted many of their beliefs about learning and motivation. As a result, this project required us to assess continuously how teachers were accepting and evaluating our professional development and how to craft it to be more meaningful to and supportive of them. Therefore, we adapted our approach as we went.

We were well aware that short term interventions are not effective in changing practice and that it takes time for teachers to develop both new practices and their rationales. We were also cognizant that most teachers had few opportunities to collaborate with and learn from colleagues. Therefore, in the second and third years of the project, we helped teachers form professional learning communities (PLCs). The objective was to foster teacher ownership of new instructional practices in a supportive setting. PLCs were a new concept for the teachers. It wasn't familiar to discuss instruction in terms of supporting student engagement. Teachers were more accustomed to informal conversations about "tips and tricks" or to commiserating with peers about shared problems. Therefore, in some groups, discussions morphed into complaint sessions about students and parents. In others, teachers reminisced about how "it used to be," recalling a principal who had showered them with appreciation. In these cases, we tried to walk the line between acknowledging teacher autonomy and trying to refocus their concerns to the engagement principles and their instruction. But, in other instances, teachers sincerely grappled with how to re-imagine their instruction and shared problems and solutions. The PLCs seemed to provide some support for teachers to think about how their instruction met their

students' needs. As evidence, in the project's final year, the school's rating from the state moved from a "D" to an "A," based on student achievement (Turner et al., 2017).

The central question of this collaborative professional development project was to test whether teachers would find it meaningful to adapt theoretically supported instructional strategies and whether such instruction could increase student engagement. Among our six observed teachers, half showed real change in instructional practices and their students demonstrated increased engagement for 3 consecutive years. The other half of the observed teachers did not change practices and student engagement did not increase (Turner et al., 2014). However, the observed teachers were a small subset of the teachers involved in the research and we can guess that teacher interaction might have helped support the ideas and practices that all the teachers had an opportunity to learn. This "in the trenches" kind of research is hard work for both teachers and researchers, but I remain convinced that it is worth the effort if the goal is to support teachers and their students in learning.

Reconceptualizing Engagement: Methodological Advances

The project described above represented a major change in my thinking about how to conceptualize and measure engagement in the classroom. As I mentioned, I had been dissatisfied for a while with the methods we used with the teacher as the unit of analysis. Although the coding of scaffolding discourse was based on teachers' responses to students and thus included student uptake implicitly, we were still measuring students' perceptions, not their actions and interactions. I sought for ways to measure teacher-student interaction directly because I believed it was the real measure of classroom engagement. Tharp and Gallimore's (1988) notion of teaching as "assisted performance" and teacher-student interaction as "joint participation" (Tharp et al., 2000) provided a theoretical framework

upon which to base an observation tool that could document how engagement was happening in classrooms. We adopted two measures for classroom observation that considered teachers and students acting together. Instead of a static description, the data were dynamic. They depicted how teachers *offered* opportunities for engagement and how students *took them up* over real time in classrooms (Turner et al. 2014). Dynamic Systems theory (Koopmans, 2020; Lewis, 2000) helped us conceptualize how patterns in teacher-student interaction emerge and change over time. State space grids (Hollenstein, 2007) were a wonderful visual tool that enabled us to display dynamic patterns of teacher-student interaction and provided the evidence of change in our observed classrooms. Not only did we know what teachers said and did but we now also had evidence of how students responded. We also wrote specifically about the utility of state space grids as a methodological tool to portray classroom interaction (Turner & Christensen, 2020). This work was the most thrilling and satisfying that I have done. The tools we used were well suited to the research questions, asking not just if, but *how* change happens. This pursuit, documenting how and why change happens, has been the goal of my research career because I believe that if we can help teachers improve their classroom instruction, we can make learning more engaging for all students.

Contributions to Motivation Research

My contribution centers on the animating goal of my career, which is to understand classrooms better and to collaborate with teachers to improve learning and motivation for students. All of my research, starting with my dissertation, was conducted in classrooms. Looking back, I realize that my colleagues Helen Patrick, Deb Meyer and I had been greatly influenced by other work in classrooms by Jere Brophy, Tom Good and Walter Doyle and by Deborah Stipek and Phyllis Blumenfeld's motivation research in classrooms. Following these pioneers, we

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emphasized the importance of putting "context" in the foreground in studying students' motivated learning in classrooms (Turner & Meyer, 2000). This contrasted with a lot of motivation research that placed context in the background while foregrounding the individual. We have always contended that you cannot separate individuals from their situations. We have referred to this approach as "situated" (Turner, 1993; Turner & Nolen, 2015). Thanks to our work and that of others, notably learning scientists, that word and concept has caught on to some extent. For example, Expectancy-Value theory is now Situated Expectancy Value theory (Eccles & Wigfield, 2020).

Although many motivation researchers at the time were asking the question, "What influences students' motivation to learn in the classroom?" my work differed in the way I investigated the question. As I mentioned, many other researchers were answering that question via theory. For example, students who perceived a mastery classroom goal structure also reported desirable beliefs like efficacy. While still making use of such generative theory, my goal was to put flesh on the bones of that theory. *How* do teachers send messages about the goal structure of the classroom? *How* do teachers support efficacy? I settled on one pervasive experience, their classroom instruction. My research placed instruction at the center because teachers and students spend most of their time together during instruction. As such, it *must* be important to motivation. Asking about the quality of instruction naturally turned attention to teachers – what they did, what they knew about the effects of instructional practice on their students, and whether they

could change practices. Thus, each study I did provided new understandings leading to new questions. The second half of my career was spent collaborating with teachers to understand how they thought about motivation and to sharing strategies that I hoped would support their instruction.

I believe that the value of being *in* the classroom as opposed to viewing classrooms through data, is to help convey their complexity. It is easy to prescribe remedies or implications for classrooms if one does not have to understand their complexities. Everything – from classroom management to instruction to student diversity to testing – affects how teachers and students interact and creates the unique culture of their classroom. One of my contributions has been to shine a small light on how teachers' instruction contributes to that motivational mix.

A second contribution is to expand thinking about theory. When I began my career, certain motivation theories were dominant and researchers identified with one theory or another. As I did more research in real classrooms and talked to teachers, it became clear to me that no single theory adequately captured the classroom experience. Rather than let theory define how one characterized classrooms, it seemed more useful to let classrooms suggest which theories might serve them best. In my later classroom studies, I married elements of different theories – self-determination and interest – that elucidated the classroom experience and made sense to teachers. Also, with my focus on instruction, I needed theories that would explain not just motivation, but also learning. I saw this inattention to learning as a weakness in motivation theory. The scaffolding theory of instruction, as conceptualized by Deb Meyer, added an explanatory link between teacher instruction and student motivation. Finally, I realized that motivation theory alone was inadequate to answer my research questions about change. Learning about dynamic systems theory (Turner et al., 2014) was a very

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fruitful addition to my theoretical framework and opened up many new understandings about how behavior emerges and changes in human settings. In sum, as my research developed, I became more convinced about the value of interdisciplinary perspectives because they contributed the kinds of insights into classrooms that the research could offer.

A third contribution is the adoption of methodologies that can answer the *how* and *why* questions I have asked. Classroom observation has been at the center of my work. I believe you have to be there to really understand the dynamics of a classroom. This is hard work and very time consuming. Many researchers eschew this approach, wanting something more "efficient" and yielding a larger pool of data. I have found observation to be both revelatory and rewarding. We have used various observation frameworks based on different theories of instruction and interaction, depending on research questions. Over time, my methods have changed from measuring motivation as somewhat static to dynamic. Static measures of what teachers did showed *why* students were engaged (or not). Dynamic measures enabled us to explain *how* behavior and engagement changed over time. For example, in Turner et al (2014), our theory of change posited that teacher-student interaction during instruction was related to student engagement. Our observation instrument measured teachers and students acting together (e.g., in dialogue) rather than separately (Rivera et al., 1999). Our question about whether the professional development we offered teachers could help alter teacher instruction and student

engagement required a way to measure change. State space grids enabled us to document changes in teacher-student interaction over three years, and the changes (or lack thereof) were able to demonstrate the efficacy of the intervention. Finally, I have always used mixed methods because I thought they were both necessary to answer my questions and because they were useful in triangulating data. For instance, one type of data (e.g., observation) could help support other data like student self-reports. Mixed methods also make richer descriptions of the classroom possible, enabling deeper understandings of how classroom cultures emerge and change.

Methodology has always been an important topic in educational psychology and motivation research, but more often it is focused on quantitative approaches. It is still common today for doctoral programs to emphasize quantitative studies that produce large, fast results. In contrast, qualitative methods take time, which can hinder professional advancement in a publish or

Figure 6. Educational Psychologist, an academic journal where I have published

perish world. But research in classrooms requires some qualitative work and it affords a nuanced view not possible with quantitative-only approaches. Qualitative and mixed methods enable the investigation of different questions, as I have demonstrated. Unfortunately, these methods have received less attention to the detriment of our deep understanding of teachers, students and classrooms. I urge researchers interested in classrooms to explore the benefits of such approaches.

As I look back over my very rewarding career, I have learned a few lessons that might be helpful to others just beginning. First, follow your own path. Don't be afraid to pursue what you think is important, regardless of the fashion. Possibly because I was a teacher, I have always thought that the classroom was a necessary site for motivation research. My approach never has been mainstream in motivation research and it is still not today. I have been recognized as a pioneer in this field, which is gratifying. But there is still a dearth of motivation research that investigates how the stuff of classroom life – instruction, materials, relationships, culture and historical antecedents – influence students' motivation and learning. As I noted, I believe that there is still strong pressure on graduate students in educational psychology and motivation to focus on the latest quantitative methods (first) and formulate research questions that can be measured with these methodologies (second). This well-intentioned advice privileges technical innovation (often related to publication) over asking other valuable questions that can inform schooling for both students and teachers.

Second, take those risks that resonate with the questions you want to ask. Because classroom research was not mainstream at the time I did it, I had no assurance that my work would be publishable in the outlets that educational psychologists respected. Amazingly, I don't think I thought about that risk at the time. I was so committed to what I wanted to learn and to its importance that I did the study, and then I thought
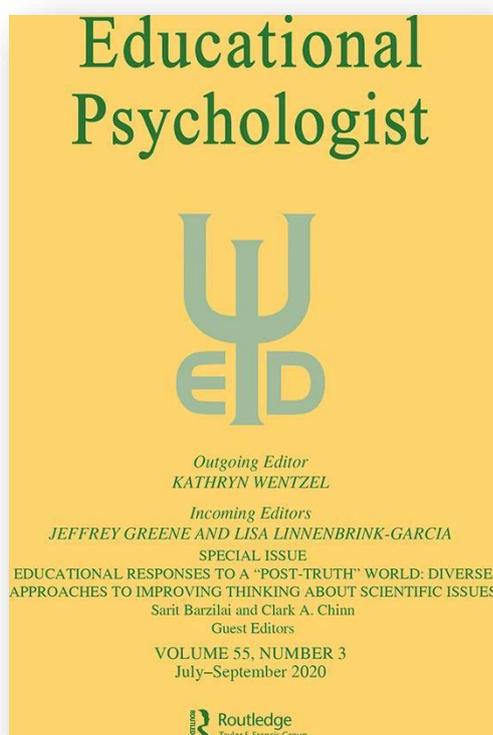
about publication. Each study seems to have been a bigger risk than its predecessor. The two studies based in teacher professional development took years and might have proved unsuccessful. I needed good publications because that affected my professional advancement. I believe that capitalizing on what I learned from each previous study did provide me with rich information to help design the next one, and thus to make the case for their importance.

Third, emphasize quality over quantity. In presenting my cases for tenure and promotion, I argued that fewer rich, high-quality research studies are just as (or more) valuable than a large number of publications. Because many departments still use quantity as a metric, learning to defend the value of fewer publications is an important skill for those who do longitudinal and time-intensive research. It is also important to learn to explain what the "quality" of your work is. Despite this path less taken, I have had success publishing in well-regarded journals like *Journal of Educational Psychology*, *Educational Psychologist* and the *American Educational Research Journal*. I attribute that success to making a strong case for the importance of the research and to innovative methodology.

Fourth, if you don't get the grant, move to Plan B. The emphasis on grants is overwhelming today in academe. But you won't get every grant you apply for, and you may get none. If you don't get the grant, figure out how to do the research anyway. I received one large grant from the Spencer Foundation, but all the rest of my research has depended on figuring out resources on my own. I built my own research community by establishing relationships with districts and schools, enlisting graduate school colleagues like Deb Meyer, Helen Patrick, Tim Urdan and Eric Anderman as fellow researchers, using graduate students as co-researchers, and spending a good deal of my time in the classroom as well.

It is never certain how research partnerships will work or develop. My experience has been immensely positive.

This is due in no small part to the work ethic, collaborative and generous instincts, and original minds of my colleagues. Although sometimes our partnerships were born of necessity (and shared interests), they have grown and flowered into a strong intellectual bond where we learn with and from each other. For example, working with Deb Meyer and Helen Patrick on the Spencer project led us to new insights, which we developed into more theoretically oriented pieces. At this moment, I am able to share Helen's thinking on classroom research with teachers, developed in her own work, and I am collaborating with Deb on a book on classroom research. Shared interest in classroom research has also opened up opportunities to work with other colleagues like Nancy Perry and Susan Nolen, very enriching partnerships. Finally, our research at Notre Dame owes a great deal to my former graduate student and colleague, Andrea Christensen, who contributed to every part of our work there. These approaches might have been tailored to the kind of local research I conducted, but it worked when resources were scant.

Figure 7. 2013 AERA annual dinner of our group called "Women in Motivation" including (L to R in back) me, Shirley Wu, Deb Meyer, Lynley Anderman, Allison Ryan and Helen Patrick (in front)

Fifth, cultivate relationships with schools. If you are interested in research in schools or classrooms, think about how to present your research as meeting a pressing need. I found that "motivating students" was a compelling teacher need and helped me gain entry into schools. Also, establish relationships with schools early in your career. You could start with research with one interested teacher. Even work with one teacher enables you to learn a lot about teachers, students and classrooms, gets you into a school where you can meet others and begins to establish your credibility as a trusted collaborator.

Finally, don't give up. As I related, my move to Notre Dame was the most challenging experience of my professional life. Because I had to make it work, I looked outside the box for ways to succeed. In research, this involved forging partnerships with aforementioned colleagues outside of my university. In promotion and tenure, I relied on the support of university colleagues outside my department to recognize my accomplishments. Eventually, I was able to use this recognition to gain tenure in Psychology and finally to achieve

full professor. Although circumstances will vary for individuals, finding an alternate solution to problems can work and did work for me. When the script isn't working, change the script so that it works for you.

Figure 8. Christmas 2021 with one of my three grandsons

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About Acquired Wisdom

This collection began with an invitation to one of the editors, Sigmund Tobias, from Norman Shapiro a former colleague at the City College of New York (CCNY). Shapiro invited retired CCNY faculty members to prepare manuscripts describing what they learned during their College careers that could be of value to new appointees and former colleagues. It seemed to us that a project describing the experiences of internationally known and distinguished researchers in Educational Psychology and Educational Research would be of benefit to many colleagues, especially younger ones entering those disciplines. We decided to include senior scholars in the fields of adult learning and training because , although often neglected by educational researchers, their work is quite relevant to our fields and graduate students could find productive and gainful positions in that area.

Junior faculty and grad students in Educational Psychology, Educational Research, and related disciplines, could learn much from the experiences of senior researchers. Doctoral students are exposed to courses or seminars about history of the discipline as well as the field's overarching purposes and its important contributors.

A second audience for this project includes the practitioners and researchers in disciplines represented by the chapter authors. This audience could learn from the experiences of eminent researchers – how their experiences shaped their work, and what they see as their major contributions – and readers might relate their own work to that of the scholars. Authors were advised that they were free to organize their chapters as they saw fit, provided that their manuscripts contained these elements: 1) their perceived major contributions to the discipline, 2) major lessons learned during their careers, 3) their opinions about the personal and 4) situational factors (institutions and other affiliations, colleagues, advisors, and advisees) that stimulated their significant work.

We hope that the contributions of distinguished researchers receive the wide readership they deserve and serves as a resource to the future practitioners and researchers in these fields.

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