



Training New Teachers to Understand Motivation in the Classroom: How Teacher Preparation Programs Are Educating Teachers on the Pedagogical Implications of the Social Psychology of Motivation

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Social psychological research in school contexts has highlighted the critical role that educators play in shaping students' psychological experience of learning and school, which influences their academic motivation, engagement, and outcomes. Despite this growing body of scientific evidence, many teacher preparation programs do not appear to be incorporating practical insights from this research into their programs so that new teachers understand important determinants of motivation and how pedagogy can support (or undermine) students' motivation. It is unclear whether this is due to a lack of awareness of the research, negative perceptions about it, or other unidentified barriers to adoption.

To begin exploring this topic, the Mindset Scholars Network launched a project to interview teacher preparation program stakeholders within organizations that have begun incorporating this body of research. These interviews focused on understanding the processes, successes, and challenges stakeholders report they have experienced related to integrating research on motivation into their programs. The goal of this project was twofold: to begin to understand how the scientific community could support teacher preparation stakeholders in utilizing this research and to expose questions and concerns among teacher training program faculty and administrators that could be considered in future research.

HIGHLIGHTS

- Wide variation and notable gaps exist in current approaches to training teacher candidates on the social psychology of motivation among programs that have begun incorporating this body of research; the field lacks a clear definition and examples of psychologically attuned teaching, what gets covered depends on faculty expertise and interest, and ties to the research may not be made explicit
- Participants felt that programs are not yet doing enough to cultivate teacher candidates' knowledge and skill in building inclusive classroom environments that support belonging, which is foundational to creating contexts that support motivation
- Participants are seeking clearer connections between the social psychology of motivation and other topics of interest in teacher education, including culturally responsive pedagogy, trauma-informed practice, universal design for learning, and the science of learning
- Research on the social psychology of motivation is most compelling when the practical significance is clear, compelling, and actionable; when it connects with faculty and candidates' lived experience and prior knowledge; and when there is guidance on exploring its implications for practice
- Other challenges to integrating this body of research include navigating complex processes for curriculum redesign in traditional universities, difficulty changing long-standing norms among faculty, and addressing specific practices that new teachers struggle to apply in the classroom

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The Mindset Scholars Network is a group of leading social scientists dedicated to improving student outcomes and expanding educational opportunity by advancing our scientific understanding of students' mindsets about learning and school.

DEFINING THE "SOCIAL PSYCHOLOGY OF MOTIVATION"

For this project, we defined the “social psychology of motivation” for participants as follows:

We are interested in social psychological factors that support—or undermine—students’ motivation to learn and that can be shaped by teachers’ practices and the classroom environment they create on a daily basis. These social psychological factors include: beliefs about the malleability of ability, sense of belonging or belonging uncertainty, perceptions of the value and cost of engaging in tasks, experiences of social identity threat (or worries about being judged negatively based on your identity), and experiences of bias and prejudice.

STUDY DESIGN

RESEARCH QUESTIONS

1. What aspects of social psychological research on motivation are stakeholders who are incorporating this research into their teacher training curriculum most familiar with?
 - a. What/who are the sources of information that have had the greatest influence on their decisions to incorporate this research into their programs and course curricula?
 - b. How are they incorporating the research into their programs?
2. What do stakeholders report has been most helpful for generating awareness, interest, and buy-in among their faculty and peers?
 - a. What context factors influence the decision of, or processes used by, stakeholders to introduce new research-based concepts and practices into their curriculum?
 - b. What factors influence their own perceptions of this research and those of other faculty and administrators?
3. What do stakeholders report has been most challenging about incorporating principles from this research into their teacher training curricula?

PARTICIPANTS AND METHODS

We engaged a total of 17¹ U.S.-based participants from 15 institutions in the project through 11 one-on-one, semi-structured interviews and one focus group with seven participants. Participants included faculty and deans at traditional schools of education (n = 9), faculty and administrators at residency programs and teacher induction programs (n = 5), and intermediaries that support schools of education and residency programs (n = 3).² Recruitment focused on those who are integrating some aspects of research on the social psychology of motivation. Participants were recruited using a snowball sampling method. To our knowledge, this is the first project to systematically examine these research questions, which merited a design and sample of this type. Preliminary findings were presented to researchers and practitioners in a focus group with 16 participants during a convening held in November 2018 by the Mindset Scholars Network. Recommendations from this focus group have been incorporated into the Future Questions section.

FINDINGS

Findings reveal four key areas of insight. First, wide variation and notable gaps exist in current approaches to training teacher candidates on the social psychological aspects of motivation. Second, there is a strong desire to better understand the links between social psychological research on motivation and research and practice focused on diversity, equity, and inclusion taking place in other domains. Third, we gained insight into what makes research compelling and which factors have been most helpful in navigating the logistics of incorporating the research, such as translational literature and “knowledge brokers.” Lastly, participants shared factors that have created challenges in incorporating the research, such as complex governance structures that make curriculum change difficult, causes of resistance among some faculty, and certain research-based principles teacher candidates find most challenging to apply in their practice.

1. WIDE VARIATION AND NOTABLE GAPS EXIST IN CURRENT APPROACHES TO TRAINING TEACHER CANDIDATES ON THE SOCIAL PSYCHOLOGY OF MOTIVATION

Participants broadly agreed that all of the constructs we described are important for teacher candidates to understand and know how to apply. However, there was wide variability in terms of which constructs are being

¹ One participant participated in the focus group and an interview.

² Participant demographics: 13 women, 4 men; 12 white, 2 black, 2 Latinx, and 1 Asian-Pacific American.

addressed by faculty, when during their training candidates are learning about them, and how they are learning about the concepts and their application in practice. Most participants reported that some aspects of growth mindset and belonging are being addressed in candidates' coursework, but many felt candidates were only gaining a surface-level understanding. Factors contributing to this variability are discussed below.

Which constructs get featured—and when they get covered in the curriculum—varies significantly and is largely driven by individual faculty decisions

The decision-making processes of faculty and program administrators on which constructs to highlight are complex and may benefit from further exploration with a broader sample. Preliminarily, some decision-making factors include perceptions of which constructs are the highest leverage, which constructs have an empirical evidence base and also align with candidates' and faculty's own lived experience, and clarity about how to logically integrate constructs. Notably, the field does not currently have recommendations for a developmental sequence to help teachers build their knowledge and skill in psychologically attuned practices: teacher moves and instructional practices that align with what we know from social psychological research on motivation.

Given these factors, it is unsurprising that the constructs teacher candidates are learning about in their coursework vary significantly between programs. And while a couple of participants reported that their programs are integrating aspects of the research in a sequenced way that spirals throughout their curriculum (e.g., embedded into both content and methods coursework over the duration of the program), participants from most traditional universities reported bringing in the research within individual courses, largely based on one-off faculty decisions. In these undergraduate programs, when teacher candidates learn about theories of motivation and constructs such as growth mindset, they typically do so long before they are in a position to practice applying them in real classrooms. They may also be introduced to the same construct by more than one professor but rarely in a coordinated or coherent fashion.

Faculty differ significantly in their approaches to integrating principles from motivation research and commonly used approaches do not always make explicit links to the research

Some faculty are teaching candidates practices that appear aligned with the research, but are not drawing explicitly on the constructs, theory, or empirical literature directly in doing so. For example, some are building psychologically attuned practices into their content area instructional strategies (e.g., changing how mathematics is taught in ways

that are aligned with principles from research on growth mindset and relevance) but may not help candidates see the connection between these instructional practices and students' motivation. This is notable since motivation and engagement is a common point of concern among candidates. Others, particularly Minority Serving Institutions (MSIs), were described by a participant as more traditionally oriented toward the "social side of education" and the idea that "students' whole identities have to be valued in the classroom in order to bring about learning;" faculty and administrators at these institutions may promote ideas aligned with this body of social psychological research but may not connect these ideas explicitly to the literature. A third approach privileges candidates learning through discovery without faculty making explicit connections to the research. Faculty may need a clear and compelling rationale for why teaching students about the research more explicitly is an important complement to their current approaches.

No clear definition of psychologically attuned teaching currently exists to guide faculty and programs' training of teacher candidates

While there is some evidence for which teaching practices matter, participants recognized that we currently lack a clear definition of what psychologically attuned teaching is, and strong, evidence-based examples of what it looks like in action. Participants expressed a desire for more resources that could provide modeling of the practices we know are important in a variety of contexts (e.g., grade levels, content areas) and for observation rubrics and other formative feedback tools so that candidates can receive productive coaching. Such resources could also support skill-building among faculty.

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Addressing teacher beliefs and biases is seen as important yet insufficiently addressed by many teacher training programs

Most participants, regardless of their role, saw addressing candidates' own beliefs and biases as foundational to preparing them to create inclusive environments that support

motivation for the diverse population of learners served in schools. Faculty believed they had to address candidates' own fixed beliefs about ability (particularly around mathematics), for example, before candidates could effectively address such beliefs in their students. And many participants said that since the vast majority of teachers in the United States are white and female, there is a need to actively address what this means for candidates in terms of how their cultural lens and prior experiences shape their beliefs about their students, the choices they make, and what one participant called the "critical awareness" required to build meaningful relationships with students, families, and communities across lines of difference. Multiple participants expressed a desire to better understand the role of implicit bias in teaching. Few felt like their programs—or others with which they were familiar—were addressing these issues of teachers' beliefs and biases adequately, and sought guidance on how to do so effectively.

2. UNDERSTANDING THE LINKS TO DIVERSITY, EQUITY, AND INCLUSION ARE A PRIORITY

Participants strongly agreed that it is important for new teachers to understand how to use pedagogical practices that create inclusive classroom environments and support a sense of belonging among student bodies that are diverse in terms of economic, racial, ethnic, and linguistic background, ableness, gender identity, and sexual orientation. Several areas of concern emerged related to how to prepare teachers, and how to advance research in this area.

Many felt they were not yet doing enough to build teacher candidates' ability to create inclusive environments that support belonging

Many participants felt that their programs needed to do more to cultivate teachers' knowledge and skill in building inclusive classroom environments that support belonging, which is foundational for academic motivation.³ They also felt they were not doing enough to train teachers on what to do when placed in schools that may be enacting inequitable policies or when challenged by more experienced teachers who may question their approach.

"[Faculty in one program] consistently talked about belonging and how important it is and how being known, loved and cared for, and having people believe in your own possibilities is so important for learning. And literally, [I] went into a high school that they partner with that was tracked . . . like most large comprehensive American high

schools are tracked. . . . The Advanced Placement classroom was [almost] 100% white students and the other side of the hallway in the lower track classroom was [comprised of] students of color. And there was no conversation that the program was having, [or] the cooperating teachers [at that school] were having, with the candidates about the systems that produced that inequity."

Faculty and administrators want to better understand how to prepare candidates to recognize the multiple levels on which belonging can be signaled (or undermined), and become—as one participant described it—"critically reflective" about their own practice, while also recognizing that larger structural factors outside their control may also influence motivation in the classroom.

Unpacking belonging with teacher candidates is seen as an area that needs development

Some participants expressed concern that the nuances of belonging are not well-understood or well-defined. One participant articulated three layers of belonging that she thought needed to be addressed in training new teachers:

- *Who is accepted?* "Am I an outsider in this space or am I actually welcome? Is there a climate that embraces who I am holistically... or am I only welcome here as, [for example], a 'smart African American'?"
- *Who has "opportunities to be smart"?* "Do you have the opportunity to be smart in this space or interpreted as being smart in the space? [This] is not just climate and culture, but also gets into bias for or against certain individuals."

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³See, for example, [Walton & Brady, 2017](#) and [Gray, Hope, & Matthews, 2018](#).

- *Is difference welcomed on a broad scale? “Is this in an assimilationist environment where everybody needs to be the same or is this an environment where I’m free to be me, and I can excel within who I am?”*

Concern that siloing between fields may be limiting advancement in this area

Some participants noted that social psychology needs to be connected with other bodies of work related to culturally responsive pedagogy, trauma-informed practice, universal design for learning, and the science of learning. This involves connecting researchers across disciplines, and also building conceptual maps and syntheses that help educators and those who are training educators make sense of these various strands of work so they can be seen as coherent, rather than different priorities they have to choose between.

For example, one participant observed, “The voices [of MSI researchers] in this body of research is absolutely absent. It’s not because they’re not doing the work, but because it is not recognized and valued.”

“Stealth” approaches from social psychology can seem paternalistic and insufficient

Some participants raised concerns with respect to the “stealth”⁴ approach commonly used in social psychological research. One concern was that these stealth approaches can seem paternalistic in part because such interventions aim to change a person’s perceptions and behaviors and do not explain the object of the intervention in doing so. Second, multiple participants indicated they believe that creating more equitable educational experiences is not possible without confronting teachers’ biases explicitly. For example, one participant said, “I’m now starting to feel like we’re talking about [teacher bias] in a really nice way. It’s about high expectations for students, and I almost feel like the balance needs to swing a little bit more towards being more direct.” On the latter point, it is worth noting that scientists are actively working to understand the impact of different approaches (including stealth and direct approaches) to addressing bias and its consequences on behavior.⁵ Third, some participants noted that efforts to change teachers’ and students’ beliefs and perceptions are incomplete without also making changes to inequitable practices and policies at the school and district level.

3. RESEARCH TRANSLATION PRODUCTS THAT ARE ACCESSIBLE, ACTIONABLE, AND RESONATE WITH LIVED EXPERIENCE GENERATE GREATER INTEREST AND UPTAKE

Overall, there was consensus that scientific research is most compelling when it makes the practical significance clear, compelling, and actionable, and when it connects with faculty and candidates’ lived experience and prior knowledge—regardless of how impressive the method or the results. This may entail working with teacher preparation stakeholders and content area experts to make meaning of the translated research and find ways to integrate it so that it builds on current practice in manageable ways.

Translational writers are influential sources

For many, reading translational work is preferred because they lack the time or appetite to wade through statistics and necessarily-cautious academic language to understand research findings and how to apply them to their context. Participants cited translational sources such as *Education Week* and *Educational Leadership* or synthesis reports from education organizations like Deans for Impact as more likely to present research in accessible language directed at specific educator audiences and to make the connections to practice more explicit and concrete. As one participant noted,

“If it’s sitting in an academic journal somewhere, I don’t think it’s reaching those who really need to be accessing that information... [this research is] not getting translated out with the speed and efficiency with which it could.”

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“Knowledge brokers” can provide valuable guidance and support

One participant saw what she described as “knowledge brokers”—institutions that both translate research and

⁴Social psychological interventions are often “stealth” in nature because they use careful framing to avoid signaling to participants that they are being targeted for help or are being singled out as members of a stigmatized group, for example. This increases the likelihood that people remain open to the message of the intervention. These interventions also activate psychological levers to promote behavior change, similar to active learning strategies (e.g., putting a message into one’s own words and connecting it to one’s own experience, which prompts participants to identify with and internalize the intervention message). For more on these types of interventions, see this [summary](#) of [Walton & Wilson, 2018](#)

⁵See, for example: [Lai et al., 2016](#) and [Dovidio, Love, Schellhaas, & Hewstone, 2017](#).

provide guidance in exploring its implications for practice—as playing an important role in amplifying the integration of this research into teacher preparation programs. Organizations such as Deans for Impact, Branch Alliance for Educator Diversity, and Alliance for Excellent Education, among others, may be well positioned to help facilitate the integration process because they can position the research in a way that resonates with faculty, provide collaborative learning experiences and integration tools, and in some cases, offer technical assistance to leadership during the integration process. Additionally, because these organizations are skilled in communicating between research and practice, they can act as useful sources of insight on where gaps exist in the research agenda.

“Knowledge brokers”—institutions that both translate research and provide guidance in exploring its implications for practice—[could play] an important role in amplifying the integration of this research into teacher preparation programs.

Multiple factors influence the perceived credibility of this research

Participants mentioned several factors that affected their perceptions of the credibility of this research, including: the prestige of the publication journal (particularly seeing this research in premier interdisciplinary journals like *Science*); representativeness of the study sample to their own contexts; mixed methods that provided richer insights; a non-deficit framing of the problem being addressed; and the reputation of the researcher.

Participants also identified issues related to the diversity of the participants, the context, and the researchers themselves as important. For example, one participant said,

“Within the [Minority Serving Institution] community, the first thing they look at is the diversity of the study. If it wasn’t a diverse context or if somehow they feel like the diversity was artificial, they automatically reject it. You don’t even get to the results.”

Many participants also noted that seeing their own experience as teachers—both their successes and their challenges—reflected in the research was an important factor in their interest.

4. CHALLENGES TO INTEGRATING THIS RESEARCH INTO TEACHER PREPARATION PROGRAMS

Challenges to integrating this body of research into teacher preparation programs include structural factors that make curriculum change difficult and the degree to which research-based recommendations deviate from existing norms in these institutions. Participants also spoke to specific aspects of the research that new teachers struggle to master.

Change management at traditional universities is complex

For deans at traditional universities, even when they see the need to integrate research on motivation systematically, change is challenging due to governance structures, complex decision-making processes for curriculum redesign, and a strong culture of departmental and faculty autonomy, which can lead to siloing and a lack of coherence across the curriculum.

Some strategies cited by administrators as helpful for creating awareness and buy-in included:

- Providing faculty with data about their candidates’ experiences in the field such as testimonials on where they felt the program did not adequately prepare them.
- Collaborating with district stakeholders (e.g., superintendents and school boards) who can emphasize the need for candidates to understand this aspect of learning.
- Creating space for faculty to engage in their own review of the research and its relevance to teacher preparation.
- Utilizing research translations and syntheses to guide informed discussions with faculty.
- Creating research-informed experiential learning opportunities for faculty that mirror what administrators want for their candidates and their future students.

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Principles from the research can run counter to long-standing norms in teacher training programs

Participants raised two additional challenges related to how principles from this research can run into issues with existing norms and practices in teacher training programs. First, faculty and administrators' receptivity to the research often depends upon the extent to which this research counters what they learned in their own training. In some cases, participants observed that principles from this research may not align with faculty's training. Second, several stakeholders mentioned that an additional barrier to adoption is that this research has not been integrated into the textbooks that faculty assign to candidates (e.g., on mathematics or literacy instruction, and other common topics of education coursework). As one participant reflected,

"In the math education world, research on motivation doesn't fit in very well... I'm going chapter by chapter in my [text]books. There's no obvious place to put in a section on motivation, because the [text]books aren't structured that way."

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Pre- and in-service teachers commonly struggle with certain principles from this research

In addition to issues described above related to candidates' own beliefs and biases, as well as their understanding of belonging, participants named several additional aspects of the research that teachers struggle with in particular, including:

- Giving students feedback on their progress in a way that supports a growth orientation. This is particularly difficult if teachers have not yet developed the deep understanding of the academic content necessary to structure larger learning objectives as a series of smaller progressions and to know how to help students build from misconceptions to accurate understanding.
- Using process praise (praising students' approach and how it led to a positive outcome or improvement) effectively—a practice associated

with supporting a growth mindset. Relatedly, teacher candidates express disbelief that person praise (praising student's abilities alone) is potentially harmful to students' motivation.

- Remaining confident in, and advocating for, psychologically attuned practice when challenged by school culture or peer pressure.
- Holding students accountable and providing effective consequences without damaging students' trust or motivation. Teachers often have lay theories (e.g., using rewards and punishments to motivate students) that seem efficient to them in the short term, but that can have negative long-term consequences on student motivation and learning.
- Persisting themselves through challenges when stressed without reverting to ineffective habits that could undermine students' motivation (e.g., switching back to extrinsic rewards or punishments).
- Struggling with the idea that in order to engage in psychologically attuned practices that support students' motivation, they have to loosen their control and allow students to experiment, make mistakes, and struggle, which often feels uncomfortable.
- Elementary level teachers in particular may struggle with their own motivational issues related to mathematics. They may not want to teach mathematics, and their own anxiety about the content and their perceptions about its relevance can affect their instruction.
- Generally, teachers struggle without more concrete examples or case studies to understand what constructs and principles from the research look like when applied to practice.

FUTURE QUESTIONS

This project has surfaced questions related to four topics that the field may want to explore, including:

1. Effective strategies for training educators

Questions related to effectively training educators on creating environments that support motivation for a diverse student population include:

- What is currently known about evidence-based teaching practices that are psychologically attuned?

- How should we define psychologically attuned teaching, and do so in a way that centers on issues of identity, culture, and the heterogeneity of both educators and teaching contexts? What new or existing measurement tools might help answer this question?
- What is an appropriate developmental sequence for training educators on psychologically attuned practice that cuts across key topics in teacher preparation programs (e.g., content-area instruction, classroom management)?
- Which teacher training programs are providing teacher candidates with strong preparation to create classroom contexts that support students' motivation and do so in a way that is responsive to students' cultural background and how they are situated in school and society?
- What new resources could support programs in training teachers to apply research insights across multiple grades, content areas, and contexts?
- How does training school administrators on the social psychology of motivation differ from training teachers? What new or existing resources would support this training?

2. Research on adult beliefs and biases

Questions related to the role of adult beliefs and bias include:

- Given the interest among teacher preparation providers, what is an appropriate research agenda focused on teachers' beliefs and biases?
 - How should this agenda consider biases in structures in addition to biases in individuals?⁶
 - How can researchers from multiple domains (e.g., researchers studying prejudice and intergroup relations, experts on organizational change) work together on advancing this agenda?

3. Synthesis across related domains

Future work on understanding motivation and effective teacher training would benefit from considering:

- How might connections in both research and translation work be encouraged between the social psychology of motivation and other relevant domains such as: culturally responsive approaches; social-emotional learning; the science of learning; mindfulness; learner variability and universal design for learning; and research on adversity and trauma-informed practice?

4. Opportunities and challenges in institutional change

Questions on how to effectively support institutional change within teacher training programs include:

- What resources and support would help position administrators and faculty in teacher preparation programs as change-makers with regard to this body of research?
 - What resources could be provided to increase awareness and buy in?
 - How should the “knowledge brokering” process be supported in this context?
 - How might faculty be supported in an inquiry process that allows them to make meaning of the research and see connections to their practice?
- What are the greatest leverage points for influencing how teacher candidates are taught about this body of research and its implications for creating classroom contexts that support motivation for all learners (e.g., textbooks for pre-service teachers, professional standards, online teacher training programs)?
- Are the adoption challenges identified in these interviews with participants who are already incorporating aspects of the research the same or different than those at other institutions who may not have previous exposure or interest in the social psychology of motivation?

CONCLUSION

Training new teachers on the social psychology of motivation and psychologically attuned practices in an integrated, practically relevant fashion is an important direction for teacher preparation. This body of research recognizes that students' subjective experience of school matters for learning and educational outcomes—and that different students experience classrooms in different ways based on their past experiences and how they are situated in society. This project reported on the experiences and observations of teacher preparation stakeholders who are integrating these insights into their training of new teachers. Their reflections highlight areas where more work is needed in order to integrate this perspective more fully into how we train teachers in America.

⁶See, for example, [Murphy, Kroeper, & Ozier, 2018](#).