PRE-SERVICE EDUCATOR ATTRITION INFORMED BY SELF-DETERMINATION THEORY: AUTONOMY LOSS IN HIGH-STAKES EDUCATION ENVIRONMENTS

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Abstract

This paper documents results of research regarding one pre-service educator's motivation to remain in the teaching profession at the secondary level. This qualitative research was based on semi-structured interviews and collaborative analysis between researcher and pre-service educator that included an iterative process of theory building informed by a pre-espoused theory treated as a secondary source of data. We present an instrumental case examined through the lens of self-determination theory (SDT), a theory of motivation shown to successfully inform a wide array of psychological data concerning human behavior and optimal functioning in a variety of social contexts but that, nonetheless, remains underutilized in the field of education. Applying this theoretical lens, we document the struggle that early educators may experience as a result of the felt loss of autonomy and volition with respect to the pedagogical competencies that teacher preparation programs help to instill. We provide recommendations for both teacher educators and school administrators hoping to secure educator success and retention in schools operating under strong teacher accountability mandates. We argue that self-determination theory is a powerful conceptual model that may inform and predict the experiences of others like our instrumental case subject working in similar environments, with our ultimate motive being the better preparation of aspiring educators' in terms of their pedagogical savvy regarding professional realities. **Key words**: teacher motivation, retention, self-determination theory, high-stakes testing.

Introduction

Amanda (a pseudonym) was enrolled in a middle school science teaching methods course at a research university in the Midwestern United States in the autumn of 2008. She was a very strong student overall as evidenced by her perfect undergraduate performance, with a grade of "A" earned in every course. Equally commendable were her advanced understanding of science content and her ability to translate pedagogical theory into teaching practice. Amanda demonstrated both mastery and excitement with respect to engaging her peers in scientific inquiry and seemed well primed to engage her future middle-level students (normally ages 11-13 in the U.S.) via research-confirmed best teaching practices. Indeed, during her practicum placements and semester of student teaching in three high-needs science and mathematics

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classrooms, Amanda demonstrated skills and knowledge reminiscent of a more veteran teacher, including her ability to foster students' construction and deep understanding of complicated scientific and mathematical models through advanced pedagogical practices and interpersonal skills. Thus, her university-based science teacher educator was more than a little surprised when, during her last year end of her 4-year teacher training program, Amanda remarked *I am vowing to never step foot in a classroom again after graduation*. Given her incredible potential as an educator in areas of great national need, her teacher educator, also a researcher in science teacher education, discussed the possibility of documenting Amanda's experiences for the greater teacher preparation community. Amanda agreed to this, indicating that she hoped sharing her experience would help teacher educators uncover and alleviate the strength of pertinent factors currently contributing to educator attrition.

Problem of Research

This paper reports on the experiences of one educator's pre-service experience through the lens of one theory of human motivation, *self-determination theory* (SDT), previously shown to successfully shed light on a wide array of psychological data concerning behavior and optimal functioning in a variety of social contexts, including work settings. Applying this theoretical lens, we document the struggle that even pre-service educators may experience as a result of a perceived loss of autonomy with respect to felt competencies within the high-stakes environments that are often the norm in schools in the U.S. and internationally. In light of these findings, we provide recommendations for teacher educators and school personnel hoping to better secure educator success and retention in modern schools.

Research Focus

Professional Educator Retention and Attrition

Inquiry into primary and secondary teacher retention has been the focus of a relatively large body of education research (Guarino, Santibañez, & Daley; 2006; MacDonald, 1999). Particularly well documented are the intrinsic factors that serve as motivation to become an educator initially, including personal commitments to serving others and society (Andrew, 1983; DeLong, 1987; Farkas, Johnson, and Foleno, 2000; King, 1993; Nias, 1989; Place, 1997) and the promise of the profession's match with personal creativity and abilities (King, 1993). Others have documented more externally influenced factors, such as family obligations (Farkas et al., 2000; King, 1993) and the profession's potential towards affordance of personal autonomy and prestige (King, 1993).

Yet attrition from the teaching profession in the U.S. is higher than that from most other professions (Ingersoll, 2001) and most common among those teachers within their first two years of teaching and just a few years out of their teacher preparation programs (Darling-Hammond & Sclan, 1996; Hanushek, Kain, & Rivkin, 2004; Kirby, Berends, & Naftel, 1999; Mac-Donald, 1999). Attrition from the teaching profession is of growing national concern in the U.S. given the great need to staff the thousands of teaching positions created each year due to the growing school children population coinciding with retirements of the generation born during the post-WWII baby boom. Of extra concern is how to fill the secondary science and mathematics positions vacated at a higher rate than teaching positions in other disciplines and at the primary level (Henke, Zahn, and Carroll, 2001; Ingersoll, 2001; Kirby et al., 1999).

Of recent scholarly focus is the relationship between educator autonomy, and encroachments on autonomy, such as mandates and policies regarding teacher accountability. Various researchers have linked teachers' felt autonomy, and school leaders' support of this autonomy,

with teachers' professional satisfaction (Shen, 1997; Stockard and Lehman, 2004; Weiss, 1999). Ingersoll (2001) has reported that schools in which teachers reported greater autonomy and administrative support experienced higher levels of teacher retention. Yet the relationship of teacher autonomy with respect to educator motivation, and how this may foster retention in the profession, is still underexplored. According to Guarino et al. (2006), few studies have explored psychological factors underlying individuals' motivation to remain in the teaching profession. This paper explores one pre-service educator's decision to leave the profession, in light of one research-confirmed theory of motivation, self-determination theory. Analyzed through this lens, our research provides insight into the interplay of teacher motivation, autonomy, and retention and how to secure a more effective and committed teacher workforce.

A Review of Self-Determination Theory

Self-determination theory, or *SDT*, was first conceptualized by Deci and Ryan (1985) to explain a wide array of psychological data concerning human behavior. Like many other cognitive theories of motivation, SDT is based on the premise that humans are naturally "growth-oriented." SDT postulates three needs as central to motivation, that humans naturally act to 1) coordinate their actions to foster their growth towards a more unified and personally determined sense of self (*autonomy*), 2) better understand and interact with the world around them (*competence*) and 3) achieve better social integration (*relatedness*). With respect to autonomy, competence, and relatedness, SDT helps to explain and predict the types of goals humans attempt to achieve as well as the psychological strength of these goals.

Unlike many other contemporary theories of motivation, SDT also considers the underlying bases of goal pursuits, or *regulatory processes*. Anything impacting the regulatory processes of goal pursuits can, according to SDT, impact motivation to act. *Orientation* with respect to goal pursuits is influenced by an individual's perception of autonomy, competence, and relatedness. Thus anything impacting an individual's perception of his or her autonomy, competence, and relatedness may ultimately impact an individual's goal pursuits and, thus, his or her motivation. The dialectic between individuals and their social backdrops serves to support or thwart both the perception and the seeking of satisfaction of an individual's motivation.

According to most modern motivation theories, an individual is assumed to be intrinsically motivated to act if one views the act itself as inherently rewarding. This stands in contrast to extrinsically motivated behaviors that are performed for some outcome outside of the act itself. Key to all types of motivation, intrinsic or extrinsic, is one's perception of the level of autonomy one holds with respect to the action. As it relates to SDT, *autonomy* can be conceptualized in two ways. According to Deci and Ryan, autonomy is "equated with the ideas of internal locus of control, independence, and individualism" (2000, p. 231), a definition many resonate with in terms of autonomy. Yet Deci and Ryan assert that SDT is most predictive and explanatory when *autonomy* is also recognized as "volition-the organismic desire to self-organize experience and behavior and to have activity be concordant with one's integrated sense of self" (2000, p. 231). An individual's motivation with respect to an action can change in terms of the level of autonomy they perceive with respect to the action. As such, individuals can even *internalize* the importance of an action that was originally extrinsically motivated.

Various researchers have confirmed the tenants of SDT in helping to explain and predict human behavior in a variety of settings and more than 100 research reports of the applicability of SDT in education contexts have been published so far (see http://www.psych.rochester. edu/SDT). The vast majority of this work has researched the motivation of students. Some researchers have explored teachers' motivation, the societal effects impacting this, and how the motivation of teachers manifests as effects on students. Pressures emanating from school ad-

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ministration have been linked with low levels of teacher motivation (Pelletier & Sharp, 2009). Low teacher motivation in turn, specifically low felt autonomy, has been correlated with low student motivation and performance (Pelletier & Sharp, 2009). Teacher limits on student autonomy, often prevalent in high-stakes teacher accountability environments, are correlated with low student motivation and engagement (Assor, Kaplan, Kanat-Maymon, & Roth, 2005; Assor, Kaplan, & Roth, 2002; Reeve, 2006).

The relationship between teacher autonomy, motivation, and attrition from the profession, however, has not yet been fully explored within the most powerful psychological theories of human motivation. This paper attempts to make salient that the self-determination theory of human motivation is a powerful theoretical model that may allow moving beyond the interpretation of the experiences of one pre-service teacher to predicting the experiences of others like her working in high-stakes teacher accountability education environments. Our ultimate motive is to inform those working with aspiring educators to help them better prepare for their professional realities.

Methodology of Research

Theoretical Framework

This study was conducted under the assumptions of an interpretivist theoretical framework with acknowledgement of the preconceived biases of the study participants, both preservice teacher and university education researcher. The university researcher's role was one of empathizer who attempted to understand the pre-service teacher's motives, overall cognition, and actions. While we attempt to report as accurately as possible the experiences of the pre-service teacher, the university researcher admittedly co-constructed meaning of these experiences. Research was phenomenological as described by Schutz (1973) with acceptance of Weber's 1968 *postulate of subjective interpretation* that assumes that humans are conscious beings able to convey information about activities they deem relevant in a reliable and meaningful way. The reflection of teachers, specifically, regarding their personal histories has been shown to be reliable and powerful in terms of explaining the influence of past experiences on current cognition and action (Eick, 2002; Hawkey, 1996; Kelchtermans & Vandenberghe, 1994; Nias, 1989).

Procedures and Instruments

Analysis was a continual collaborative endeavor between researcher and subject (Feldman, 1996; van Driel, Beijaard, & Verloop, 2001) and every attempt was made to validate the university researcher's analysis of the pre-service teaching by having the pre-service teacher critique and correct any analysis of her experiences. While we do not argue for vast generalizability of our findings, given both interpretivist assumptions and limitations of analysis regarding just one case, we do assume that the pre-service teacher may serve as an *instrumental case* (Stake, 1995) and may provide insight into the experiences of other early-career educators.

Our research questions were:

- I. What experiences and factors are salient regarding one pre-service educator's motivation to remain, or not, in the teaching profession?
- II. How does using self-determination theory as a theoretical lens inform understanding of the factors impacting one pre-service educator's decisions regarding her attrition from the profession and recommendations arising from the analysis of her experience?

Our research is based on data gathered during two semi-structured interviews. The first occurred between the semester of Amanda's practicum, a five-week segment of practice and

observing teaching in local schools, and her semester of full-time student teaching. A follow-up interview was conducted during her semester of student teaching. Interview questions, created by the university researcher, prompted Amanda to reflect on the evolution of her motivation towards serving as a middle school teacher and probed what she attributed changes to regarding this motivation, including what she felt could have protected against these changes. Amanda's responses were recorded verbatim. Formal analysis of her responses followed others' recommendations concerning an iterative process of theory building informed by pre-espoused and well-tested theories that could serve as secondary sources of data (Glaser, 2001; 1992; Hutchison, 1993; May, 1994; McGhee et al., 2007; Strauss & Corbin, 1990). Recognizing the salience of the concepts of autonomy and competence during the coding of the initial interview, the university researcher applied SDT in subsequent analysis of existing data while remaining attentive to the possibility of other theories that could potentially inform Amanda's case. While SDT was used as an analytical theoretical lens, every effort was made to allow for necessary redirection regarding theory with respect to the data at hand, including the potential need to modify the theory of SDT as per Amanda's experiences (Agar, 1996; Hammersley & Atkinson, 1983; Yin, 2002).

Results of Research

Amanda reflected on her motivation to work and remain in the teaching profession with respect to three main research questions as prompts. Selected responses follow.

Question 1: Reflecting on the relevant experiences in your life, including during your teacher preparation program, chronicle your motivation/interest towards becoming a middle school science and math teacher.

Amanda responded by sharing her earliest memories of being in school.

Beginning as early as elementary school, I thrived in and fully enjoyed school in its entirety. I simply loved to learn new things, I loved to create, I loved seeing my friends, I loved interacting with the teachers, I loved the opportunity to achieve and accomplish.

Amanda described an overall positive affect regarding school experienced from her time in grade school through her time at university. This affect was, at first, attributable only to her experiences as a student. Her first true teaching experience was not until her time as a university student when she worked as a summer camp couselor. Her positive affect towards school and towards teaching and learning was further strengthened as she began to recognize new personal competencies.

I began to thrive on the smiles on the children's faces. Each and everyone of them taught me something about myself I had never seen before-I had the ability, the drive, and the desire to influence and mold their lives.

Amanda looked forward to a teaching career. Yet like many teacher candidates in the U.S. Amanda did not have a sustained experience in an actual formal classroom until late into her university training. It was then that her motivation to become an educator began to wane.

Question 2: When did you experience change with respect to motivation/interest regarding becoming a middle school science and math teacher and to what do you attribute this change?

Amanda's motivation was significantly affected during her time in her 5-week long practi-

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cum experience in the schools. She attributed her change to the realization that teachers had little choice and control over teaching and learning as they responded to external pressures.

As I began to observe in the same classroom I saw a world of education that only those who actually work in it know exists. It is a world constricted by red tape and government agendas, burdened by tests, rules, and regulations, and one that has made me severely question my future. Long gone are the days where educators have the freedom and the respect to move their classroom at the pace and in a way that they deem acceptable and most appropriate for their group of students... it seems every single order is passed down, leaving the educator virtually free of having to make a single decision regarding their classroom.

Amanda cited the high stakes testing environment, and those that perpetuate and enforce it, as the most salient external pressures on teachers.

As school districts receive pressure from the state to achieve at "distinguished" levels, the threats and pressure trickle down to the teachers in the educational trenches who do not dare color outside the lines. Who would risk taking time using manipulatives in mathematics or using model-based teaching when the time until testing is clicking away?

Amanda recognized manifestation of the pressure to "teach to the test" as teacher burnout.

Educators no longer get their creative juices flowing. They merely copy twelve multiple-choice questions and paste them onto the test, leaving their job mundane, routine, and below the level that they can and should be achieving at.

Amanda's subsequent semester long student teaching experience in her senior year further decreased her motivation to become a teacher. It was during this time that Amanda was able to witness the long-term negative effects of the high-stakes testing environment on students.

In the school district I work with, every teacher is to give this type of test at least every month. I do understand the logic behind this process. Using standardized testing procedures prepares students for the state testing, comparing data allows us to find weaknesses that can be tweaked and worked on, so there are reasons...However, I see multitudes of problems. Imagine the boredom that comes for students and not every student is going to test well in this format, no matter how many times you try it on them. Not only is having a singular type of assessment boring and ineffective, but the level of learning and understanding required to answer these types of openresponse and multiple-choice questions leaves little reason for teachers to push their students into creative zones of thinking where they are forced to analyze situations or create new ideas. Rather, most students have learned through their repetitious encounters how to merely get by with enough points to please parents and educators; however, they are being cheated of possible achievement and advanced levels of understanding.

Amanda conveyed a certain degree of relatedness with other educators during her student teaching semester but these relationships overwhelmingly fed her negative impression of the profession.

I took a poll of all of my friends who are teachers, there were seven girls that I spoke to. All of them said that if they went back to school they would choose a different career, all of them. While in practicum this past semester I actually had a teacher tell me that if her daughter had wanted to become a teacher she would not have paid for her education. Now, how am I supposed to feel about entering this profession when I am being bombarded by negativity, feelings of despair, and frustration?

Question 3: Do you have any sense of what, if anything, may have protected against change in your motivation/interest to teach or could strengthen your motivation/interest to teach in the future?

Amanda hoped during her remaining time as a pre-service teacher, via her semester of student teaching, to witness other teachers being successful and seeming fulfilled in the class-room.

As I [go through] student teaching I hope to see teachers daring to push the limits of the state mandates through creativity, exploration, and investigation. I hope to have all the opinions and observations I have formed up to this point in my education completely unfounded, inaccurate, and totally reversed. Though, being a realist in nature, I am very aware that this is more than likely not what I will find.

While Amanda grew ever more positive about her own pedagogical abilities through student teaching, she experienced accumulating concerns regarding her potential to remain in the profession.

I have become much more comfortable in front of a classroom, I have felt more comfortable having the title of a professional, and I have become more aware of how to relate to and interact with the students in a way in which they will respect you but also genuinely like you. In the end, my teaching or not teaching will merely come down to one simple question, will I be willing to endure the price and, often times, pain that comes with being an educator to fulfill my original goal of working with kids. If my joy can survive and not be extinguished by the state mandates, the administrative hoops that must be jumped through, and I can find a way to be true to my personal teaching style and beliefs in a way in which students can benefit, then I will teach. If I cannot, then I will not, for the good of all of those involved.

Amanda ultimately decided that she could not find a way to do what she knew was right for herself or her future students. In lieu of seeking a job in a classroom, Amanda applied to a graduate program in education in the spring of 2009 with hopes of eventually serving in another capacity.

Discussion

While neither educator disillusionment during the transition from university-based training programs to actual classrooms, nor educator attrition from the profession, are newly identified phenomena, it is our contention that analysis of these through a lens of self-determination theory allowed new insight into these phenomena. Amanda seemed the perfect teacher candidate. Amanda's positive affect regarding her lifetime of schooling was overwhelmingly based on her felt academic competency. She attributed her growing motivation to teach to this affect. Amanda had excelled in the schooling environment throughout all of her life, earning high praise from her teachers and parents, Amanda, as predicted by SDT, eventually internalized others' praises into her own intrinsic motivation to continue to excel. Amanda became interested in the possibility of increasing others' competency with respect to scientific and mathematical knowledge as she further grew her own. As with many others who decide to become professional educators, Amanda expressed intrinsic motivation to serve others in order to "make a difference" and viewed the teaching profession as affording possibilities to do so.

Yet, of SDT's three predicted needs, the need for relatedness was most obvious in Amanda's reflections regarding her decision to become an educator. She had basked in the positive interactions with teachers as a younger student and wanted to be on the other end of that stu-

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dent-teacher relationship. The influence of autonomy with respect to her motivation to become a teacher, in contrast, only became apparent during her first real experience serving as an educator, as a summer camp counselor and well into her time at university. Finally, she was able to effectively put her science and mathematics competencies into action through relationships with students that she was given charge to teach. Amanda spoke fondly of how she "thrived" on her interactions with students and how these relationships cued her into her "ability, drive, and desire" to teach. Amanda looked forward to a career that would serve as an outlet for her competence and secure positive sustained relations with students.

Like many teacher candidates in the U.S. Amanda did not have a sustained experience in an actual formal school classroom until late into her university training. This is when her motivation to become an educator first began to wane. Amanda mainly attributed her diminishing motivation to teach to what she saw as the stripping of competencies of teachers with respect to ability to meet their students' needs. Amanda lamented the constrictions of "red tape, tests, and regulations" and the effects on educators who thus lacked "freedom and respect to move their classroom at the pace and in a way that they deem acceptable and most appropriate for their students." Analysis of Amanda's statements highlights her disillusionment upon witnessing the lack of control that teachers have in their classrooms.

Yet Amanda indicated the main encroachment she noticed was with respect to teachers' volition, in this case the ability to unite their subject matter competencies with their pedagogical ones towards doing what they knew to be pedagogically best for their students. Most depressing to Amanda was the realization that research-confirmed best teaching practices were not encouraged, and were even actively discouraged, by school district administrators who, responding to "pressure from the state," were now overly focused on normalizing teachers' practices towards better preparation of students for success on standardized tests. Teachers' loss of autonomy, in Amanda's view, was totally at the hands of forces external to the teachers themselves. Amanda saw educator burnout as the ultimate result via natural response to the "mundane, routine" work now required of them and that was "below the level that they can and should be achieving at."

Amanda's subsequent student teaching experience in the last semester of her senior year both confirmed and added to her numerous fears and further decreased her motivation to become a teacher. Paramount was Amanda's distress regarding the trickle-down effects of the high-stakes testing environment on students who succumbed to "boredom" and were "being cheated of possible achievement and advanced levels of understanding."

During her sharing of her experiences, Amanda conveyed a certain degree of relatedness with other educators. Yet these interactions seemed only to lower her motivation to teach as they grew her negative impression of the profession, one that predominantly fostered feelings of "negativity," "despair," and "frustration." Relatedness with other educators for Amanda, and perhaps for many practicing teachers, was counterproductive with respect to motivation to be an educator. When asked if anything may have protected against her change in motivation/interest to teach, Amanda responded that she was hopeful that she would find others working in the profession that did not convey such negativity and frustration yet was "very aware" that her hopes would not be realized by the time of her university graduation.

While Amanda did not find the model teachers she was looking for while apprenticing in the schools, she did recognize positive effects from her pre-service experience. Amanda's felt competencies with respect to teaching were actually strengthened via her semester of fulltime student teaching. Given the relative freedom that student teachers often have in the U.S. to try out new teaching strategies, Amanda was able to witness students responding positively to her teaching practices, many that she had previously only known as theory. Yet Amanda's gains in knowledge and skills with respect to best practices only exacerbated her felt encroachments with respect to her envisioned future professional autonomy, bad news for the greater teacher educator community who is ever attempting to increase the number of highly effective

science and math educators in the schools. In the end, her decision to leave the profession did come down to whether she felt she could "endure the price and pain" brought on by the "the state mandates, the administrative hoops" that made it impossible to "be true to [her] personal teaching style and beliefs in a way in which students can benefit." Informed by her experiences, Amanda flexed her professional autonomy muscle when, in lieu of seeking a teaching job, she applied to a graduate program in education. As a potential future scholar with great potential, Amanda may still serve students in need of quality science and mathematics education, but at the cost of losing a gifted practitioner on the all-important front lines and, partially, as a result of the pedagogical competencies her teacher preparation program had worked so hard to foster in her.

Conclusions

The pre-service teacher depicted in this article represented the best potential graduate that a teacher educator program's faculty could hope for. Melding theory and practice with her strong content knowledge, Amanda had developed a "personal teaching style" that promised to incorporate best practices in science education. In the language of self-determination theory, Amanda distributed high levels of teaching competence and relatedness with other educators, seemingly good traits for aspiring educators, especially in the eyes of teacher educators and school administrators. In addition, Amanda's sense of autonomy, both in terms of the control she envisioned regarding her future classrooms and her volition in uniting her pedagogical practices with knowledge on how to secure student success, was strengthened by her teacher preparation program to a degree that surpassed many of her pre-service peers. Yet during her last year in her teacher education program, Amanda decided to opt out of the profession.

Few studies have explored psychological factors underlying individuals' motivation to remain in the teaching profession. It is our contention that analysis of educator disillusionment during the transition from university-based training programs to actual classrooms can be informed through a lens of self-determination theory, allowing for insights into this phenomenon and related educator attrition. Most notable in Amanda's discussion of her reasons for leaving the profession was how during her practicum experience external encroachments on her professional autonomy, autonomy that her teacher education program had helped to foster, seemed to undermine her professional competence. Amanda's gains in competence during her student teaching only intensified the encroachments she felt on her professional autonomy, perpetuating the cycle of Amanda's professional strengths weakening her others.

The research detailed above exploring Amanda's decision to leave the teaching profession allowed for many painful realizations. As one of Amanda's professors with the responsibility of training her to be an effective educator, the university researcher involved could not escape the reality of her own influence regarding Amanda's expectations regarding what good teaching should look like and how this ultimately played a significant role in Amanda's decision to opt out of the profession. Surely, other readers of this work recognize their similar influence. What, then, can be learned from this research in terms of informing teacher educators as well as school administrators in hopes of fostering motivation in educators to remain in the teaching profession?

To being with, we contend that what teacher educators recognize as pedagogical competence needs to include knowledge, skills, and practice that protect teachers against external encroachments on professional autonomy. We call for teacher educators to help to foster in their protégés what we are calling *pedagogical savvy*, the educator savoir-faire needed to effectively integrate research-confirmed best practices regarding teaching and learning into the high-stakes teacher accountability movements of the moment. Pedagogical savvy has, as its basis, an understanding of what educators may expect to encounter, psychologically, as they transition into

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the real-world of teaching and the skills and practices that may help them offset factors that traditionally drive educators out of the profession. Development of such would likely require 1) strengthening teacher candidates' knowledge concerning the macro- and micro-level issues driving historical and current education movements through concerted academic study along-side 2) lived experience of how these movements play out at the local level and 3) deep subsequent reflection on how to teach through research-confirmed best practices while fostering the knowledge and skills students need to demonstrate success on a variety of measurements within the current education climate. Advanced pedagogical savvy would translate into teacher praxis that unites the topics and processes covered on standardized assessments with those central to the discipline they teach and the advanced interpersonal skills to justify their praxis to administrators and other powerful stakeholders that may not recognize the parallels.

We acknowledge that our call's basis is under-researched and we are now moving to test our developing theory with a greater population of educators who have left or are considering leaving the profession as well as those who have decided to stay. In addition, we acknowledge our call is ambitious and broad and that we provide only limited direction towards meeting it. For now, we hold steadfast to the possibilities of our recommended actions in helping to mend the leaking pipeline of committed educators. With the leak so large, what do we have to lose?

References

Agar, M. H. (1996). *The professional stranger: An informal introduction to ethnography* (2nd ed.). San Diego, CA: Academic Press.

Andrew, M. D. (1983). The characteristics of students in a five-year teacher education program. *Journal of Teacher Education*, 34(1), 20–23.

Assor, A., Kaplan, H., Kanat-Maymon, Y., & Roth, G. (2005). Directly controlling teacher behaviors as predictors of poor motivation and engagement in girls and boys: The role of anger and anxiety. *Learning and Instruction*, 15, 397–413.

Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacherbehaviours predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, 72, 261–278.

Darling-Hammond, L., & Sclan, E. M. (1996). Who teaches and why: Dilemmas of building a profession for twenty-first century schools. In: J. Sikula (Ed.), *Handbook of research on teacher education* (pp. 67-101). New York: Association of Teacher Educators.

Deci, E. & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

Deci, E. & Ryan, R. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.

DeLong, T. J. (1987). Teachers and their careers: Why do they choose teaching? *Journal of Career Development*, 14(2), 118–125.

Eick, C. J. (2002). Studying career science teachers' personal histories: A methodology for understanding intrinsic reasons for career choice and retention. *Research in Science Education*, 32: 353–372.

Farkas, S., Johnson, J., & Foleno, T. (2000). *A sense of calling: Who teaches and why*. New York: Public Agenda.

Feldman, A. (1996). Enhancing the practice of physics teachers: Mechanisms for the generation and sharing of knowledge and understanding in collaborative action research. *Journal of Research in Science Teaching*, 33, 513–540.

Glaser, B. G. (2001). *The grounded theory perspective: Conceptualisation contrasted with description*. Mill Valley, CA: Sociology Press.

Guarino, C. M., Santibañez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research*, 76(2), 173–208.

Hanushek, E., Kain, J., & Rivkin, S. (2004). Why public schools lose teachers. *Journal of Human Resources*, 39(2), 326–354.

Hawkey, K. (1996). Image and the pressure to conform in learning to teach. *Teaching & Teacher Education*, 12, 99–108.

Henke, R., Zahn, L., & Carroll, C. (2001). *Attrition of new teachers among recent college graduates: Comparing occupational stability among 1992–1993 college graduates who taught and those who worked in other occupations.* Washington, DC: National Center for Education Statistics.

Hutchison, S. A. (1993). Grounded theory: The method. In P.L. Munhall & C. A. Boyd (Eds.), *Nursing research: A qualitative perspective* (pp. 180-212). New York: National League for Nursing Press.

Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499–534.

Kelchtermans, G., & Vandenberghe, R. (1994). Teachers' professional development: A biographical perspective. *Journal of Curriculum Studies*, 26(1), 45–62.

Kirby, S., Berends, M., & Naftel, S. (1999). Supply and demand of minority teachers in Texas: Problems and prospects. *Educational Evaluation and Policy Analysis*, 21(1), 47-66.

King, S. (1993). Why did we choose teaching careers and what will enable us to stay? Insights from one cohort of the African-American teaching pool. *Journal of Negro Education*, 62(4), 475–492.

MacDonald, D. (1999). Teacher attrition: A review of the literature. *Teaching & Teacher Education*, 15(8), 835–848.

May K. (1994). Abstract knowing: the case for magic in method. In J. Morse (Ed.), *Critical issues in qualitative research methods* (pp. 407-423). London: Sage.

Nias, J. (1989). Primary teachers talking: A study of teaching as work. New York: Routledge.

Pelletier, L. G. & Sharp, E. C. (2009). Administrative pressures and teachers' interpersonal behaviour in the classroom. *Theory and Research in Education*, 7(2), 174–183.

Place, A. W. (1997). Career choice of education: Holland type, diversity, and self efficacy. *Journal for a Just & Caring Education*, 3(2), 203–214.

Reeve, JM. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students benefit. *The Elementary School Journal*, 106(3), 225–236.

Schutz, A. (1973). *Collected papers I: The problem of social reality* (A. Broderson, Ed.). The Hague, the Netherlands: Martinus Nijhoff.

Shen, J. (1997). Teacher retention and attrition in public schools: Evidence from SASS91. *Journal of Educational Research*, 91(2), 81–88.

Stake, R. E. (1995). The art of case study research. Thousand Oaks: Sage Publications.

Stockard, J., & Lehman, M. (2004). Influences on the satisfaction and retention of 1st-year teachers: The importance of effective school management. *Educational Administration Quarterly*, 40(5), 742–771.

Strauss, A. & Corbin, J. (1998). Basics of qualitative research. Grounded theory procedures and techniques. Newbury Park, CA: Sage.

van Driel, J. H., Beijaard, D., & Verloop, N. (2001). Professional development and reform in science education: The role of teachers' practical knowledge. *Journal of Research in Science Teaching*, 38(2), 137–158.

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Weber, M. (1968). *Economy and society: an outline of interpretive sociology. Vol.1*. New York: Bedminster Press.

Weiss, E. (1999). Perceived workplace conditions and first-year teachers' morale, career choice commitment, and planned retention: A secondary analysis. *Teaching and Teacher Education*, 15(8), 861–879.

Yin, R. K. (2002). Case study research: Design and methods. Newbury Park, CA: Sage.

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