

# MIND OVER MATTER: CONTRIBUTING FACTORS TO SELF-EFFICACY IN MONTESSORI TEACHERS

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**Abstract:** Interpreting Albert Bandura’s term “self-efficacy” as the individual’s belief in his own abilities to succeed in spite of the given circumstances, the purpose of this study was to identify influences leading to self-efficacy in beginning Montessori teachers. In order to evaluate perceptions of self-efficacy, 35 pre-service teachers in the United States were surveyed prior to beginning their Montessori teaching and again during the internship stage of their training. The research indicates that Montessori teachers with high levels of self-efficacy have strong mastery experiences that support their attitudes and desired professional goals. The quantitative results also show that an emotional state associated with past experiences is the second best contributor to self-efficacy. Considering that self-efficacy may be most malleable during the early stages of learning, the results of this study serve to enhance the teacher-training experience through the analysis of early obstacles.

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## INTRODUCTION

*“The first thing required of a teacher is that he be rightly disposed for his task”*  
(Montessori, 1966, p.149).

In light of the current educational reform movement, higher education programs are focusing on the professional dispositions of teacher candidates as they review their curriculum standards and agendas (Darling-Hammond & McLaughlin, 1997; National Council for Accreditation of Teacher Education, 2002). Researchers, practitioners, and others with a vested interest in teacher education believe that knowledge of subject matter and of pedagogical methods alone does not guarantee quality teachers or quality teaching—although these are necessary prerequisites for effective teacher preparation (Borko & Putnam, 1996; Pajares, 1992). Dispositions are shaped by one’s attitudes and beliefs, which are deeply affected by individual personality traits or characteristics (Damon, 2005). Teachers are now finding it essential to reflect on teaching practices, as well as knowledge and pedagogy, to better meet the needs of their students (Darling-Hammond & McLaughlin,

1997). Albert Bandura, the social psychologist who devised the construct of self-efficacy, argued that successful performance depends not only on one’s knowledge and skills but, more importantly, upon the individual’s judgment in mobilizing that knowledge and skill set (1997). *Judgment*, identified by Bandura as one’s perceived self-efficacy, is a cognitive process that operates in all learning situations and acts as a mediator between learning and action.

According to Bandura (1997, p. 240), good teaching “rests heavily on the talents and self-efficacy of teachers”. Perceived self-efficacy, as defined by Bandura, is the belief that an individual has the ability to carry out certain actions that result in a desired outcome (1997). A teacher’s sense of efficacy is consistently recognized as an important attribute of effective teaching and has been positively correlated to teacher and student outcomes (Tschannen-Moran & Woolfolk Hoy, 1998). This theory is supported by research that shows self-efficacy beliefs are strong predictors of behavior. How efficacious a person believes himself or herself to be influences the choice of activities, amount of effort spent, and the persistence put forth to complete the tasks

when confronted with obstacles. Furthermore, teacher efficacy accounts for how competent a teacher feels in her ability to affect the performance of all students, no matter how unmotivated or difficult (Tschannen-Moran, Woolfolk Hoy, 1998). Much remains to be learned about self-efficacy, however, and how it develops in teachers. Unfortunately, simply identifying high and low-efficacy teachers will not provide information on increasing levels of efficacy. Instead, a deep understanding of the influences on teacher self-efficacy is needed. Schools of education and teacher preparation programs in particular need to be aware of the factors associated with increased levels of self-efficacy in order to produce the most capable, innovative, and dedicated teachers possible.

## MONTESSORI PEDAGOGY

Although the dispute continues in traditional teacher-education programs as to the relevance of dispositions in effective teaching practice, the concept is inherent to the Montessori teaching philosophy. Dr. Maria Montessori thought “the first step in the integral resolution of the problem of education must not, therefore, be taken toward the child, but toward the adult educator. He must change his moral attitudes. He must divest himself of many preconceptions” (1989, p. 20). Montessori’s alternative approach to pedagogy promoted the natural ability of children to focus and to sustain their attention, a capacity that initiates a transition in the child’s temperament from capricious and disorderly to self-disciplined (1989). Standing describes the Montessori teacher as “a combination of a guardian angel with an information bureau” (1957, p.318). Thus, the Montessori teacher has a multi-faceted role, which means her initial training differs considerably from the standard teacher preparation.

The purpose of the present study was to gain a better understanding of the influences on Montessori teachers’ levels of self-efficacy. In order for the children in Montessori schools today to fulfill Maria Montessori’s aim to create a better world for the future, it is essential for them to be in the care of adults that have not only been well prepared and are self-aware but also have this inherent belief that the child will reveal himself to us and know that they will be able to follow the child and help him/her reach their full potential. The best preparation for teaching, according to Maria Montessori is a study of one’s self. According to Montessori,

The first essential is that the teacher should go through an inner, spiritual preparation; cultivate certain aptitudes in the moral order. This is

the most difficult part of her training, without which all the rest is of no avail... She must study how to purify her heart and render it burning with charity towards the child. She must “put on humility,” and above all, learn how to serve. She must learn how to appreciate and gather in all those tiny and delicate manifestations of the opening life in the child’s soul. Ability to do this can only be attained through a genuine effort towards self-perfection. (Standing, 1957, p. 298)

This can be very challenging for adults that come into the field of Montessori for the first time. In my years of experience I have worked with students that have in one way or another found their inner core and enter the Montessori classrooms, confident in their knowledge of the child and the materials. They have humility, are sensitive and responsive to the children’s needs and have a deep respect for learning and growing. Then there are others who learn how to present the materials but are not able to do so effortlessly. They lack confidence in themselves. These students come from various backgrounds and academic levels. Developing efficacy in teachers that lack confidence in themselves can be quite challenging and this is what drew my attention to this topic for research.

Montessori teacher education is unique in placing more emphasis on developing self-awareness than on building theoretical knowledge. Inner preparation cannot be seen as effortless or resulting in an immediate transformation; it requires a lifetime of both deep reflection and passionate commitment. Given the inherent difficulty in changing existing beliefs, coupled with the relatively short duration of a teacher preparation program, developing a valid lens through which candidate self-efficacy can be examined is not a simple undertaking. Two separate studies, Henson (2002) and Tschannen-Moran and Woolfolk Hoy (1998), found that once efficacy beliefs are established they are harder to change. These studies indicate there is a small window of opportunity to establish and to potentially increase a teacher’s self-efficacy; therefore, the time to affect change in a teacher’s self-efficacy is early in the process of training and induction. The purpose of this study was to determine how best to incorporate efficacy-building components into teacher-training programs by gaining an understanding of the influences on self-efficacy for Montessori teachers. Considering the emphasis on persistent introspection and self-evaluation in Montessori training, it is evident that self-efficacy beliefs would also play a part in nurturing the Montessori teacher. Montessori noted that inner preparation “will

give [the teacher] the balance and poise which he will need” (Montessori, 1966, p.153), which would naturally include the assessment of one’s own abilities in the classroom. In this regard, it is somewhat surprising that the grooming of the Montessori teacher has not been studied in further depth.

## CONCEPTUAL FRAMEWORK

Despite the increasing interest in teacher self-efficacy over the years, no published research explores the interplay of sources and their influences on the development of Montessori teachers. Given that efficacy may be most malleable during the early stages of learning (Bandura, 1997), Woolfolk Hoy (2000) pointed out that self-efficacy of pre-service teachers is likely subject to change once they assume real teaching responsibilities. Therefore, investigating pre-service teacher self-efficacy and how these beliefs are conceived and nurtured can provide significant information to professionals responsible for designing and implementing more meaningful teacher-preparation programs.

Self-efficacy means the judgment of one’s ability to “produce desired results and forestall detrimental ones” through one’s own actions (Bandura, 2001, p.10). Bandura added that it was only if people believed in their ability to produce desired effects, would they have the incentive to act. This means a person who believes he is fully capable of completing a task will set appropriate goals, be wholly motivated, perceive his ability level as adequate to the task, and express interest in the outcome. Two people with the same skills and knowledge may undertake a task differently depending on their level of self-efficacy. This study is grounded in Bandura’s social cognitive theory and, specifically, in his concept of self-efficacy.

Bandura (1997) proposed four sources of self-efficacy: mastery experiences; vicarious experiences; social persuasion; and physiological and affective states. Mastery experiences are the actual successful or unsuccessful outcomes of performing the task, which Bandura indicated is the most important determinant of self-efficacy as it provides authentic feedback regarding one’s capabilities. It refers to the interpretations individuals make of their past performances. Vicarious experiences, the second-most potent influence on self-efficacy, occur when a person sees someone with perceived similar ability perform the task or skill in question; this makes the observer feel that they too have the capabilities to succeed. Verbal or social persuasion,

such as words of encouragement or moral support from others regarding one’s performance, may also modify one’s perceptions of efficacy. The fourth informational source on self-efficacy is an individual’s physiological or emotional state. Typically, self-efficacy is raised in a positive emotional state and lowered in a negative emotional state (Bandura, 1997).

Using Bandura’s theory of self-efficacy to evaluate Montessori pre-service teachers requires some modification and clarification. In Montessori teacher training courses, mastery experience would include content knowledge based on Montessori philosophy, child development, observation and assessment, contemporary issues, health, safety and nutrition, as well as the six curriculum areas of the classroom. Students are expected to produce six albums with lesson plans on each of the curriculum areas and to know the rationale and purpose behind each of the learning materials. Vicarious influence refers to the influence of others in the teaching field that the teacher-in-training could imitate; the internship mentor is particularly significant as the student teacher models classroom management style from him/her. Verbal or social persuasion denoted encouragement that the pre-service teacher receives from her/ his colleagues, teachers, and mentors. The final influence of emotional state illustrates the impact of stress and anxiety on efficacy beliefs. These four influences are then filtered through the individual’s cognitive processing before becoming a measurable conduit/indicator of efficacy.

One of the goals of this study was to determine how best to incorporate efficacy-building components into teacher-training programs by gaining an understanding of the influences on self-efficacy for Montessori teachers. Another more preliminary goal was to identify sources of self-efficacy in beginning teachers associated with teacher preparation. The following research questions were explored:

1. Do the independent variables of mastery experience, vicarious experience, verbal or social persuasion, and physiological arousal significantly predict self- efficacy among Montessori pre-service teachers?
2. How do Montessori pre-service teachers with high and low levels of self-efficacy explain the influences of mastery experience, vicarious experience, verbal or social persuasion, and physiological arousal on their level of teaching efficacy?

In addition, two secondary research questions were also examined:

3. What is the difference in scores on the Teachers' Sense of Efficacy Scale (TSES) between pre-service teachers and those that have completed their in-service?
4. Do teachers with high levels of self-efficacy report different influences than teachers with low levels of self-efficacy?

## METHODS

This study utilized a mixed methods design to investigate the relative strength of the sources in predicting teacher self-efficacy. The quantitative data was collected and analyzed first, followed by the qualitative data. The two sources of data were then mixed at the interpretation phase of the research process. The purpose of the quantitative phase was to determine the level of teacher self-efficacy before and following teacher preparation training and to identify the influences on teacher self-efficacy. In the qualitative phase, each of these influences was further explored through semi-structured interviews with the participants.

A quasi-random sample for the quantitative portion of the study and a purposeful sample for the qualitative portion of the study were utilized.

## QUANTITATIVE PHASE

### *Setting and Participants*

Quantitatively this study examined efficacy in student engagement, instructional strategies and classroom management. It compared the average pre-training and post-training self-efficacy levels to see whether there was a gain. An additional questionnaire judged which influence was strongest on the teacher: mastery, vicarious, verbal, or physiological.

The population of interest in this study was students that were admitted to Montessori teacher training programs throughout the United States. Only a small sample of the population was included in the study. To maintain consistency of study sites, the teacher training organizations chosen were accredited by Montessori Accreditation Council for Teacher Education (MACTE). MACTE is the international standard setting and accrediting body for Montessori teacher education and is

recognized by the National Council for the Accreditation of Teacher Education (NCATE) and the Teacher Education Accreditation Council (TEAC). Both males and females were included in the study and gender and ethnicity information was collected.

### *Measures*

Bandura's Socio-cognitive Theory of Self-Efficacy (1986, 1997) and the link of teachers' self-efficacy to student achievement provide the framework for the investigation (Bandura, 1997; Hoy, 2000). The relationship between the independent variables of mastery experience, vicarious experience, verbal or social persuasion and physiological arousal or emotional state on a Montessori teacher's sense of self-efficacy were explored. These variables were chosen in order to attempt to quantify the influences on teaching efficacy. The dependent variable, which made up the first part of the questionnaire, was the long version of the Teachers' Sense of Efficacy Scale (TSES) (Woolfolk Hoy, 2001). The TSES long form asks for a self-report of teacher beliefs and was constructed using a nine-point, Likert-type response scale. The overall reliability and validity of the composite scale is .94. Participants are asked about their proficiency with instructional practices, maintaining classroom environments, and engaging students. To measure the independent variables a new instrument, Perceptions of Participation, was developed for the purpose of this study. It underwent revision based on the empirical results to arrive at a set of questions that would have both logical construct validity (defined as fit with the definitions of Bandura's four constructs) and empirical construct validity, as demonstrated by exploratory factor analysis.

### *Analysis*

There were two stages to the analysis: comparing the pre and post results of the TSES, and using multiple regressions to address Research Question 1. The independent variables mastery experience; vicarious experience; verbal or social persuasion and physiological arousal or emotional state were chosen in order to attempt to quantify the influences on teacher self-efficacy. These quantified relationships were compared to the relationships reported during the personal interviews.

## QUALITATIVE PHASE

### *Sample*

After statistical analysis was completed, participants were identified. Since the standard deviation criterion was not

possible (since there were not enough participants with extreme scores), the four highest and four lowest scoring participants were selected.

### *Data Collection*

A semi-structured interview protocol was developed in order to guide the interview process and help the researcher gain a deeper understanding of the influences on Montessori teacher self-efficacy. Questions pertained to each of the independent variables and compared experiences of candidates whose efficacy declined or remained constant through the period of pre-service.

### *Analysis*

The interview data was transcribed and constant comparative analysis was used to identify underlying themes. Microsoft Word functions were used for analyzing the text. Nancy R. LaPelle (2004) has shown how effective this can be “for coding and retrieving, semi-automated coding and inspection, creating hierarchies of code categories via indexing, global editing of theme codes, coding of “face-sheet” data, exploring relationships between face-sheet codes and conceptual codes, quantifying the frequency of code instances, and annotating text.” In preparation for the analysis, codes were created by reading several of the interviews and noting themes that seemed to reoccur or that had some significance to the study. Once the text was coded for themes, a comparison was made between the high group and the low group to determine how they were different. I was able to arrive at four assertions that summarized how the participants explained their own confidence or lack of confidence and what the systematic differences are between high TSES candidates and low TSES candidates.

## **RESULTS**

### *Primary Findings and Results*

1. High self-efficacy teachers felt that high school was relatively easy and they faced fewer obstacles. On the other hand, low self-efficacy teachers felt that had many challenges.
2. All teachers showed a close relationship with their mentor.
3. The lead into Montessori for high self-efficacy teachers was directly targeted at them. For the low self-efficacy teachers the

lead was a secondary influence.

4. Literacy in the Montessori curriculum resonated with the high self-efficacy teachers. Low self-efficacy teachers did not mention anything specific.
5. High self-efficacy students had teaching experiences in which they felt successful with difficult/challenging students.

The results of this study (both qualitative and quantitative) indicate that Montessori teachers with high levels of self-efficacy exhibit strong mastery experiences that account for the way they feel, and the goals they want to accomplish. This is consistent with the quantitative portion of the study as well as the qualitative which goes beyond what emerged in the quantitative analysis by validating the importance of mastery experiences to develop a strong sense of self-efficacy. The quantitative results showed Emotional state (Bandura, 1998) associated with past experiences as the second best predictor of self-efficacy. However, the interviews with the participants did not provide further insight into the quantitative finding.

## **IMPLICATIONS OF THE FINDINGS**

The results of this study draw our attention to the need for Montessori teacher education programs to improve the quality of their training and to allow time for students to develop self-awareness. The development of self-knowledge is an essential first step toward becoming a successful Montessori teacher.

“The real preparation for education is the study of one’s self. The training of the teacher who is to help life is something far more than the learning of ideas. It includes the training of character; it is a preparation of the spirit” (Montessori, 1995, p. 132).

This interior preparation takes time and guidance. It is not easy to “check those inner attitudes characteristic of adults that can hinder our understanding of a child” (Montessori, 1983, p. 153). The preparation of a Montessori teacher involves personal changes that come from being an astute observer. Montessori envisaged the teacher as being imbued with a scientific spirit of observation which would enable her to study the awakening of the child’s intellectual life. Her primary function is to observe the child as a scientist observes an experiment, and direct the child towards the activities and materials which will help him mature along natural lines. Dr. Montessori wrote”

“The teacher must bring not only the capacity, but the desire to observe natural phenomena. In our system, she must become a passive, much more than an active, influence, and her passivity shall be composed of anxious scientific curiosity, and of absolute respect for the phenomenon which she wishes to observe” (Montessori, 1912, p. 87).

Dr. Montessori believed that it was only by seeing the children in her classrooms that adults could understand the phenomenon of human development and how it is assisted by her educational approach. This takes time and guidance by experienced teachers. Yet Montessori teacher training programs today are shortening the duration of their courses. As Angeline Stoll Lillard writes:

“Many Montessori teacher training programs are very short, lasting only a few weeks or months. Some programs attempt to educate Montessori teachers largely through internships, yet they do not ensure that the supervising Montessori teachers meet any standard...Correspondence courses have also become common, with obvious potential problems” (2005, p. 329-330).

We need to change the Montessori education system in order to give trainees time to imbibe a strong conceptual understanding of the underlying concepts that will help them to succeed in the classroom. This would probably mean increasing the hours of training and contact hours with the tutor. Learning to be a Montessori teacher involves a tremendous amount of theoretical knowledge and procedures for working with the materials. It also involves making connections between the philosophy and the methodology. Aline Wolf (1996) poses the pertinent question, reflecting the status of Montessori teacher training programs today.

“Today the curriculum and schedule of Montessori training centers is determined by time restraints, finances and practicality. What was once a two year training course is now finished in one year or is often reduced to several weeks in two consecutive summers with one or two days per month of classes during an internship in the intervening school year. In even more extreme cases training is limited to a correspondence course followed by two or three weeks of practical experiences with materials. Where is the time for the best preparation for teaching?” (p. 34).

This research study demonstrates that high self-efficacy teachers have more confidence in their conceptual understanding of the philosophy and methodology which

gave them more confidence as Montessori teachers. We must strive to increase the self-efficacy of all Montessori teachers so that our children will have the best possible start to education.

The findings of the current study also indicate that teacher education programs should establish strong mentoring/coaching programs that provide the necessary support and guidance for teacher trainees. Each one of the candidates that were interviewed for this research study (high and low self-efficacy) spoke of a close relationship with their mentors and how grateful they were for this. Internships are important to learn classroom management and teaching styles from a mentor and Montessori wrote: “We must be willing to accept guidance if we wish to become effective teachers” (1983, p. 34). There should be standards for supervising teachers, including years of classroom teaching and professional development. They should also be supported by the school so they can be a good mentor. This includes making time during the day for the intern to meet with the mentor and have questions answered and plan for the next day. For it is true that “Good classroom teachers are usually too focused on the children during the school day to simultaneously explain to an intern the many variations and nuances of the materials (if they even learned about them in their own training), and at the end of the day might be too tired to do so” (Lillard, 2005, p. 329).

It is time and a call for action on the part of the Montessori community to come together and ensure that teacher trainees receive the best possible training. It is only then that Dr. Montessori’s vision will be realized as classrooms implement the program in the way that she would endorse.

## CONCLUSION

“What people think, believe, and feel affects how they behave. The natural and extrinsic effects of their actions, in turn, partly determine their thought patterns and affective reactions” (Bandura, 1986, p. 25). As studies have shown, teachers’ personal beliefs regarding their ability to affect student achievement account for some of the variance in teacher effectiveness (Armor, et al., 1976; Berman & McLaughlin, 1977). Hence, it is almost critical that teachers’ must possess a strong self-efficacy that will allow them to help the children reach their full potential. It is possible that some teachers may acquire a strong self-efficacy during their teacher training and others only after they have their own classrooms.

As this study shows us, it is teachers that have

experienced success that make for more confident teachers. It is therefore very important for professional development programs and teacher training institutions to provide their students with opportunities to experience success and feel that they are supported. Every one of the teachers I interviewed for this research study were very appreciative of their tutor and mentor and spoke fondly of the relationships they had formed with them.

Teachers (Montessori and others) must be provided with opportunities to experience success and know that they are supported. This will not only help those that have a

high sense of self-efficacy but will also give help and guidance to those that need to strengthen their self-efficacy. It is only then that we will be able to fulfill Maria Montessori's aim:

“If an educational act is to be efficacious, it will be only that one which tends to help toward the complete unfolding of life. To be thus helpful it is necessary rigorously to avoid the arrest of spontaneous movements and the imposition of arbitrary tasks” (1912, p. 88).

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## REFERENCES

- Armor, D., Conroy-Oseguera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G. (1979). *Analysis of the school preferred reading programs in selected Los Angeles minority schools, REPORT NO. R-2007-LAUSD*. Santa Monica, CA: Rand Corporation.
- Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, New Jersey: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Berman, P., & McLaughlin, M.W. (1977) *Federal programs supporting educational change*. Vol VII: Factors affecting implementation and continuation (Report No. R-1589/7 HEW). Santa Monica, CA. : The RAND Corporation.
- Borko, H., & Putnam, R. T. (1996). Learning to teach. In Berliner, D. & Calfee, R. (Eds.) *Handbook of Educational Psychology*. New York: Macmillan.
- Damon, W. (2005). Personality test: The dispositional dispute in teacher preparation today, and what to do about it. *Fwd: Thomas Fordham Foundation*, 2(3), 1-5.
- Darling-Hammond L. & McLaughlin M.W. (1997). Policies that support professional development in an era of reform. *Phi Delta Kappan*, 76 (8), 597 – 604.
- Goodwin, W.L., & Goodwin, L. D. (1996). *Understanding quantitative and qualitative research in early childhood education*. New York, NY: Teacher College Press.
- Henson, R. K. (2002). From adolescent angst to adulthood: Substantive implications and measurement dilemmas in the development of teacher self-efficacy research. *Educational Psychologist*, 37, 137-150.
- LaPelle, N.R. (2004). Simplifying qualitative data analysis using general purpose software tools. *Preventive and Behavioral Medicine Publications and Presentations*. 84
- Lillard, A. S. (2005). *Montessori: The science behind the genius*. New York: Oxford University Press.
- Montessori, M. (1912/1964). *The Montessori method*. New York: Schocken.
- Montessori, M. (1966). *The secret of childhood*. New York: Ballantine Books.
- Montessori, M. (1989). *The child in the family*. Oxford: Clio.
- Montessori, M. (1995). *The absorbent mind*. New York: Holt
- Paperbacks National Council for Accreditation of Teacher Education. (2002). Professional standards for the accreditation of schools,

- college, and departments of education.  
Washington, DC: Author.
- Pajares, F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3),307-332.
- Standing, E.M. (1957). *Maria Montessori: Her life and work*. New York: Penguin.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.
- Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*(2), 202–248.
- Wolf, Aline D. (1996). *Nurturing the spirit*. Parent Child Press PA
- Woolfolk Hoy, A. (2000). *Changes in teacher efficacy during the early years of teaching*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Woolfolk Hoy, A. (2001). Leading for learning: An educational psychologist's perspective. *UCEA: The Review, 43* (3), 1-4.
- Woolfolk Hoy, A. (2004). The educational psychology of teacher efficacy. *Educational Psychology Review, 16*, 153-176.