Australian Journal of Teacher Education

Volume 36 | Issue 12 Article 4

2011

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Recommended Citation
Pendergast, D., Garvis, S., & Keogh, J. (2011). Pre-Service Student-Teacher Self-efficacy Beliefs: An Insight Into the Making of Teachers. *Australian Journal of Teacher Education, 36*(12).
http://dx.doi.org/10.14221/ajte.2011v36n12.6

This Journal Article is posted at Research Online.
http://ro.ecu.edu.au/ajte/vol36/iss12/4

Pre-Service Student-Teacher Self-Efficacy Beliefs: An Insight Into the Making of Teachers

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Abstract: Pre-service teacher education programs play an important role in the development of beginning teacher' self-efficacy and identity. Research suggests that this development is influenced by the 'apprenticeship of learning'. However, there remains limited research about the self-efficacy beliefs and identity construction of beginning pre-service teachers entering teacher training, and the impact of the education programs on the development of these attributes.
This paper reports on the first phase of a longitudinal study that investigates beginning pre-service teachers' views of what it is to be a teacher. In 2010, the Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) was administered twice (start and end of the year) to beginning pre-service teachers enrolled in three programs: the Graduate Diploma of Early Childhood Education; the Graduate Diploma of Education - Primary; and the Graduate Diploma of Education – Secondary. Identity data in the form of text and visual representations of the teachers were also collected. This paper focuses on the results from the self-efficacy scale, highlighting the similarities and more notable contrasts in individual perceived ratings of teacher self-efficacy. Implications for further research are shared.

Introduction

Teacher self-efficacy is an important motivational construct that shapes teacher effectiveness in the classroom. Teachers with a high level of teacher self-efficacy have been shown to be more resilient in their teaching and likely to try harder to help all students to reach their potential. In contrast, teachers with a low level of teacher self-efficacy have been found to be less likely to try harder to reach the learning needs of all their students. It is for this reason that the investigation of the development of teacher self-efficacy in pre-service teacher education is important. During this time pre-service teachers undergo an 'apprenticeship of learning'.

To date, few studies have examined Australian teacher self-efficacy beliefs. This paper works to partially address this gap in the research by reporting on the first phase of a longitudinal study that is investigating the development of teacher self-efficacy. In 2010, 175 pre-service teachers enrolled in various undergraduate and postgraduate teacher education programs at an Australian university completed a survey at the beginning of the academic year to provide a measurement of their teacher self-efficacy. All participants were in the first semester of their first year of their respective programs. During semester two (the end of the

academic year), 76 of these pre-service teachers completed the survey again. These participants included the majority of students who were enrolled in Graduate Diplomas of Early Childhood Education; of Education - Primary; and of Education – Secondary, but excluded any students enrolled in undergraduate programs.

Findings in this paper discuss the similarities and more notable contrasts in the participants' individual ratings of perceived teacher self-efficacy. Possible implications from these results are also shared.

Teacher self-efficacy

Self-efficacy beliefs operate as a key factor in a generative system of human competence (Bandura, 1997). Teacher self-efficacy relates to the beliefs teachers hold about their own perceived capability in undertaking certain teaching tasks. Bandura (1997, p.3) defines self-efficacy as "beliefs in one's capabilities to organise and execute the course of action required to produce given attainments". Self-efficacy therefore influences thought patterns and emotions that enable classroom actions. In the context of education, teacher self-efficacy is considered a powerful influence on teachers' overall effectiveness with students. Tschannen- Moran and Woolfolk Hoy (2001) suggest that supporting the development of teachers' self-efficacy is essential for producing effective, committed and enthusiastic teachers.

Teacher self-efficacy is a motivational construct that directly influences outcomes in the classroom. It has been related to student achievement (Moore & Esselman, 1992; Ross, 1992); increased job satisfaction (Caprara, Barbarnelli, Borgogni & Steca, 2003); commitment to teaching (Coladarci, 1992); greater levels of planning and organisation (Allinder, 1994); and working longer with students who are struggling (Gibson & Dembo, 1984).

Teacher self-efficacy is itself influenced by four sources: mastery experiences (serving as an indicator of capability); verbal persuasion (verbal influences on your perceived capability); vicarious experiences (modelling and observation of techniques); and emotional arousal (associated with the perceived capability that influence the process and outcomes of the task attempted). The four sources undergo a form of cognitive processing that determines how the source of information will be weighted and influence the desired teaching task. Mastery experiences are considered the most powerful influence as they provide authentic evidence of one's performance in a teaching situation (Bandura, 1997; Mulholland & Wallace, 2001). Successful performance by a teacher leads to increased self-efficacy, while a failure creates a decrease in self-efficacy. As teachers develop mastery experience that lead to accumulating increases in teacher self-efficacy, they rely on these as memories and interpretations of similar past teaching experiences (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998)

The context and areas of content are important influences on the formation and judgements of teacher self-efficacy. Tschannen-Moran, Woolfolk Hoy and Hoy (1998) emphasise the importance of cognitive processing in the formation of efficacy expectations. For this to occur, teachers analyse the task to be accomplished and assess their competence in relation it. Analysis of the task is dependent on the context of the teaching situation and the specific content.

As yet, limited research has explored the development of teacher self-efficacy formed during enrolment in teacher education programs and during the beginning phase of teaching. Research suggests that teacher self-efficacy tends to increase during teacher education enrolment (Hoy & Woolfolk, 1990; Wenner, 2001) but decrease after graduation to the end of the first year of teaching (Moseley, Reinke & Bookour, 2003; Woolfolk Hoy, 2000).

However, to date little is known regarding why teacher self-efficacy beliefs fluctuate in this way during this time.

Burke-Spero and Woolfolk Hoy (2003) suggest that such oscillations may be caused by a cultural lens that sifts information, acting as a cognitive filter, influencing interpretations of efficacy sources. Interpretations that have their origins in a specific socio-cultural frame are made about personal beliefs, behaviours, and attitudes (Burke-Spero & Woolfolk Hoy, 2003). The filtering process creates unstable teacher efficacy beliefs and shifts according to the specifics of the context and content. Accordingly, a teacher may feel efficacious in one socio-cultural setting or content area, but not in others. When entering teacher education, the task is new and specific to the context. Subsequently, Burke-Spero & Woolfolk Hoy (2003) argue that to "ignore the influence of a teacher's personal cultural lens or fail to note periods of instability of interpretation when investigating teachers' developing sense of personal teaching efficacy limits the usefulness of any information derived from the investigation of teacher self-efficacy" (p.29).

Given Bandura's (1997) assertion that self-efficacy beliefs are most at play in early learning and that, once developed, are resistant to change, it was important to collect the entry levels of teacher self-efficacy beliefs of future beginning teachers.

Pre-service and beginning teachers in Australia

In Australia, any student studying teacher education is considered a pre-service teacher. A beginning teacher is a teacher with fewer than three years' experience since graduation from their teacher education programs. Research has found that 25% of beginning teachers will resign (Department of Education, Science and Training, 2003). While evidence suggests that teacher effectiveness spikes after the first years in the profession, it is a concern that many teachers exit prior to attaining this desired level of expertise (Worthy, 2005).

In 2007, the Commonwealth Government of Australia presented the *Top of the Class: Report on the Inquiry into Teacher Education* (Commonwealth of Australia, 2007). The report investigated teacher education and induction in Australia. In regard to supporting beginning teachers, the report recommended: (1) a year long structured induction program (not necessarily spent at one school and extended for beginning teachers employed on a part-time basis); (2) the report also recommended a 20 per cent reduction in a beginning teacher's face-to-face teaching load to enable time to undertake professional development, reflection, observing other classes and meeting with mentors; (3) the allocation of a mentor who would be trained for the role, who would be given appropriate time to perform the role and who could expect to receive recognition for undertaking the role; and (4) access to a structured and tailored program of professional development (2007, p.17).

As yet, it seems that few of these recommendations have been implemented. What is known is that teacher self-efficacy beliefs provide a powerful motivational construct. If beginning teachers develop greater beliefs about their perceived capability, it seems logical to expect that they may be more likely to stay in the profession after five years. A small amount of evidence suggests that this is dependent on context variables, particularly at times when self-efficacy beliefs are in a state of flux,. Woolfolk Hoy & Burke-Spero (2005) found that beginning teachers who gave higher ratings for support at the end of their first year evidenced stronger self-efficacy than did those who gave lower ratings for support. Furthermore, it seems that personal teaching efficacy tends to increase during teacher education and student training (Hoy & Woolfolk, 1990; Wenner, 2001), but decreases during the end of teacher training to the end of the first year of teaching (Woolfolk Hoy, 2000). This may be caused by the removal of support given to teachers to help develop efficacy during the beginning phase of teaching. Subsequently, while beginning teachers often enter the profession with high

hopes about the kind of teacher they would like to be for students, they often encounter a "reality shock", as they realise their hopes may be harder to achieve then anticipated (Weinstein, 1988). As such, beginning teachers may simply "recalibrate" the meaning of quality teaching, lowering their standards in an attempt to avoid self-assessment of failure (Tschannen-Moran & Woolfolk Hoy, 2007).

Alternatively, beginning teachers exposed to doubts may be more motivated for continued growth, thereby learning to maintain a belief of their future success (Wheatley, 2002). This, however, is dependent on the strength of the beginning teachers' self-efficacy as they consider the ability needed to pursue the action and the effort gained in the pursuit. Moreover, continued growth is also dependent on future positive experiences negating their disconfirming experiences.

Focus of this Study

This article focuses on the comparison of survey results derived from using the self-efficacy scale with four program cohorts at the beginning and then again at the end of their postgraduate teacher education programs. Results of the scale highlight both the similarities and the more notable contrasts in individual perceived ratings of teacher-participants' self-efficacy. The participating pre-service teachers were drawn from those enrolled in the Graduate Diploma of Early Childhood Education; the Graduate Diploma of Education - Primary; and the Graduate Diploma of Education – Secondary.
Some contextual information about the programs is presented in Table 1.

Program Title	Duration – Full time equivalent (Years)	Description
Graduate Diploma of Early Childhood Education	1	This program provides professional preparation to teach in early education, with a particular focus on kindergarten (children aged 3 years) to year 3 (children aged 8 years). It covers the theory and practice of teaching concentrating on the characteristics of learners and teachers in early years' environments and the social and cultural contexts of education. The program includes education studies, curriculum studies and professional experience in early childhood settings.
Graduate Diploma of Education - Primary	1	This program covers the theory and practice of teaching, concentrating on the characteristics of learners and teachers in primary schooling environments and the social and educational contexts of education. This program includes education studies, curriculum studies and professional experience in primary school settings.
Graduate Diploma of Education - Secondary	1	This program provides professional preparation for teaching in secondary school settings and is designed for graduates from a non-education background wishing to teach in secondary contexts. It covers the theory and practice of teaching, concentrating on the characteristics of learners and teachers and the social and educational contexts of education. The program includes education studies, curriculum studies in two nominated teaching areas, and professional experience in secondary school settings. Specialised teaching areas in Industrial Technology and Design are also available.

Table 1 Programs in which respondents were enrolled

Method

In 2010, 175 of a total of 279 pre-service teachers responded to an invitation to take part in pre-service teacher education research in their teacher training. Respondents were recruited by invitation in the first lecture for the year. Cohorts targeted for participation were: the Graduate Diploma of Early Childhood Education (one year duration full time), the Graduate Diploma of Education – Primary (one year duration full time), and the Graduate

Diploma of Education - Secondary (one year duration full time) only. An information letter was provided to potential participants detailing the longitudinal study. If pre-service teachers expressed an interest in participating, they completed the consent form and attached questionnaire. Respondents were advised that, on return of the questionnaire, all information would immediately be de-identified.

During the second semester (final semester), the pre-service teachers were again asked to complete the survey. During week three of semester two, 76 pre-service teachers completed the survey (out of a total N of 279). Unknown to the researchers, some participants had assessment due the week the survey was administered. While a response rate of 27% this may not seem adequate (Cohen, Manion, & Morrison, 2000), it compares favourably with those of similar pre-service studies. The smaller response rate may have been the result of the timing of assessment. Although anonymous, self-reported data also may not always provide an accurate snapshot of actual beliefs, field-based research is crucially important in the planning of research and program evaluation as it relates to internal and statistical conclusion validity. The former form of validity relates to the effectiveness of programs or interventions, while the latter refers to the degree to which conclusions reached about relationships in data are reasonable (see Gravetter & Forzano, 2009).

The Teachers' Sense of Efficacy Scale was used to measure perceived teachers' self-efficacy levels (Tschannen-Moran & Woolfolk Hoy, 2001). This scale has previously been used with pre-service teachers before and after professional experience (Tschannen-Moran & Woolfolk Hoy, 2001, and thus was considered valid for this study. The Teachers' Sense of Efficacy Scale consists of 24 items, assessed along a 9-point continuum with anchors at 1—Nothing, 3—Very Little, 5—Some Influence, 7—Quite A Bit, and 9—A Great Deal. The instructions direct the teacher to, ''Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position" (Tschannen Moran & Woolfolk Hoy, 2007, p. 948).

All data were cleaned and screened before being entered into the SPSS16 software program. Each questionnaire item was analysed, before undertaking cross comparative analysis. Factor analysis was conducted to verify the multifaceted structure of efficacy beliefs (Bandura, 1997), thereby helping to verify the homogeneity of the items (Bandura, 2006). The Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001; 2007; Woolfolk Hoy & Burke Spero, 2005) has consistently produced high rating for reliability. Cronbach's alpha have been reported as 0.94 (Tschannen-Moran & Woolfolk Hoy, 2001), 0.95 (Tschannen Moran & Woolfolk Hoy, 2007) and 0.96 (Garvis, 2009).

The Teachers' Sense of Efficacy Scale consists of three subscales (Instructional strategies, classroom management and student engagement). Sample items include:

Efficacy for Instructional Strategies

- To what extent can you provide an alternative explanation or example when students are confused?
- How well can you implement alternative teaching strategies in your classroom?

Efficacy for Classroom Management

- How much can you do to control disruptive behaviour in the classroom?
- How much can you do to calm a student who is disruptive or noisy?

Efficacy for Student Engagement

- How much can you do to motivate students who show low interest in schoolwork?
- How much can you do to get students to believe they can do well in school work?

The questionnaire also collected open-ended data and visual pictures of perceived teacher identity. Participants were asked to draw what a teacher looked like. This paper will report on results from the questionnaire only. Findings about the open-ended data and visual pictures will be reported in a later paper.

Participants

The participants were pre-service teachers currently enrolled in a postgraduate teacher education program at an Australian university. During the administration of the first survey, all students were in the first week of the first semester of their respective teacher education programs. As such, the students were yet to experience the classroom setting as pre-service teachers.

While the questionnaire was distributed to all students who were physically present, they were not compelled to complete it. Accordingly, it may have only been committed or engaged students who returned their completed questionnaires. The same questionnaire was administerd a second time during semester two, after the participants had recently completed a seven week practical experience placement in a schooling context. Again, although the questionnaire was distributed to all students, they were not compelled to complete it.
Table 2 (below) outlines the cohort size and response rate by program. Within the sample of participants, 73% were female and 27% were male. The participants aged ranged from 17 years of age to 58 years of age. 31% of the sample was aged 21 years and under.

Program	**Duration (Full time equivalent years)**	**Total enrolment (No.)**	**Respondents 1st Survey (No.)**	**Response rate (%)**	**Respondents 2nd Survey (No.)**	**Response rate (%)**
Graduate Diploma of Early Childhood Education	**1**	**22**	**15**	**68**	**13**	**59**
Graduate Diploma of Education – Primary	**1**	**131**	**70**	**54**	**15**	**11**
Graduate Diploma of Education – Secondary	**1**	**126**	**90**	**71**	**48**	**38**
TOTAL	**NA**	**279**	**175**	**63**	**76**	**27**

Table 2 Cohort size and response rate for each program.

Findings

Since The Teachers' Sense of Efficacy Scale is a relatively new measure, a reliability test was conducted during survey 1 and 2. The sources of teacher self-efficacy were then analysed. Next, correlations were used to test for predicators of teacher self-efficacy. These categories have been grouped under the heading of teacher self-efficacy.

Teacher Self-Efficacy

The full Teacher Self-Efficacy scale was used in this analysis (24 items). Reliability of the full scale during the first survey was 0.94, and 0.97 during the second survey. Previous use of the scale suggests reliability ratings of around 0.93 (Tschannen-Moran & Woolfolk Hoy, 2007). Reliability for the three subscales during the first survey was 0.89 for instructional strategy, 0.82 for student engagement and 0.88 for classroom management. During the second survey reliabilities were 0.95 for instructional strategy, 0.90 for student engagement and 0.93 for classroom management.

Analysis revealed that the overall mean and standard deviation for teacher self-efficacy for survey one was 7.40 (SD=0.77) and declined to 6.89 (SD= 1.29) in survey two. It seems logical to assume that this decline might well be a result of a 'reality shock' experienced by the smaller volunteer pool of students who had, by now, gained practical experience in a classroom setting in their role as pre-service teacher during school-based practicum placements.

Each of the means for the subscales also declined between the first and second survey. Teacher self-efficacy for instructional strategies declined from 7.36 (survey one) to 6.93 (survey two), teacher self-efficacy for classroom management declined from 7.41 (survey one) to 6.96 (survey two), and teacher self-efficacy for student engagement declined from 7.42 (survey one) to 6.78 (survey two). Results are presented in table 3.

Variable	**Beginning Teachers**			
	Mean		***SD***	
	Survey 1 (n=175)	***Survey 2 (n=76)***	***Survey 1***	***Survey 2***
Teacher Self-Efficacy	7.40	6.89	0.77	1.29
• Instructional strategy	7.36	6.93	0.85	1.35
• Classroom management	7.41	6.96	0.88	1.38
• Student engagement	7.42	6.78	0.81	1.33

Table 3 Means and Standard Deviation of Teacher Self-Efficacy

Note: Scores range from 1-9, the higher the score the greater the perceived sense of teacher self-efficacy.

Variations in teacher self-efficacy levels between the programs were also examined. The mean for teacher self-efficacy was highest for participants involved in the Graduate Diploma of Early Childhood Education for both survey one and two (survey 1= 7.50, survey 2= 7.02). During survey one, this was followed by participants in the Graduate Diploma of Primary (survey 1= 7.41) and the Graduate Diploma of Secondary Education (7.11). During survey two, however, participants in the Graduate Diploma of Secondary Education (survey 2= 7.01) evidenced a higher self-efficacy mean than did participants enrolled in the Graduate Diploma of Primary Education (survey 2= 6.41), as demonstrated in table 4 (below). Such results suggest that participating students enrolled in the Graduate Diploma of Early Childhood Education had higher teacher self-efficacy levels than did students enrolled in the Graduate Diploma of Secondary and the Graduate Diploma of Primary Education programs during enrolment in their respective one year graduate Diplomas. However, it here needs to be

noted that since the Graduate Diploma of Early Childhood Education has a low sample size, testing of the statistical power between these differences was limited.

	Graduate Diploma of Early Childhood Education		Graduate Diploma of Secondary of Primary Education		Graduate Diploma of Secondary Education	
	Survey 1 (n=15)	Survey 2 (n=13)	Survey 1 (n=70)	Survey 2 (n=15)	Survey 1 (n=126)	Survey 2 (n=48)
Teacher Self-Efficacy	7.50	7.02	7.41	6.41	7.11	7.02

Table 4 Mean Results by Graduate Diploma Program

Note: Scores range from 1-9, the higher the score the greater the perceived sense of teacher self-efficacy.

In order to identify any significant differences between age, gender, program and level of teacher self-efficacy, ANOVA tests were also conducted. The characteristics of the participants were not found to be predictive of teacher self-efficacy in that none of the demographics tested (age, gender, program) were significantly significant ($p<0.05$) related to teacher self-efficacy. These findings are comparable with teacher self-efficacy that has shown self-efficacy to be dependent on the content and the context, characteristics of age, gender and program studied and should, therefore, not be significant.

Discussion

In examining the self-efficacy beliefs prior to having any practical experience in the field), these participants appeared to over-estimate their level of teacher self-efficacy (mean 7.40) during their first week after the commencement of their respective postgraduate university programs. This higher assessment of their teaching capabilities is surprising, given their lack of classroom experience as teachers. It is possible that pre-service teachers who entered the program were influenced by their previous 'apprenticeship of observation' model (Lortie, 1975), drawn from their experiences of schools as students during their twelve years of schooling. Another factor is that some participants were also parents and may, therefore, have also been influenced by observations of their own children's schooling. Positive emotional arousal could be another factor for possible over-estimated levels of self-efficacy. Furthermore, the participants may also have had fond emotional memories of schooling or their children's schooling, leading to a belief that they were already capable teachers. As these teachers had little if any exposure to mastery experience in the classroom and verbal persuasion from other teachers prior to completing the survey, these sources of efficacy were not expected to have contributed to their teacher self-efficacy ratings in this initial survey.

During the final semester of their teacher education programs, the pre-service teachers rated themselves with a lower level of teacher self-efficacy than they had done previously (mean 6.89). This may well have been the result of the development of a greater understanding of the teaching profession gained through both their university studies and their practical experiences in classrooms as teachers. Practical experience has long been regarded as playing a vital role in the preparation of pre-service teachers for the real world of the classroom. Traditional views of practical experience are of an apprentice model (Smith & Strahan, 2004), where the naive apprentice is immersed into the work situation, observing, absorbing and ultimately imitating the master. The analysis of the teaching task by pre-service teachers would be more explicit as they entered the first teaching assignment. Contextual factors contributing to the analysis of the teaching task would, consequently, have played a stronger role in the self-efficacy beliefs of the pre-service teachers as reflected in the results of this second survey. Beliefs would likely be in a state of flux until the beginning phase of

teaching is over. This study will provide a longitudinal collection over three years of the participant's teacher self-efficacy to document changes occurring during practical experience and the beginning years of teaching. Data will be collected twice a year for the next two years. Findings will be reported in later articles.

There was little difference noticed between the three subscales: instructional strategy, student engagement and classroom management during survey one. During survey two, the mean for each of the subscales declined.

Differences appeared between the mean of teacher self-efficacy for each of the three Graduate Diploma programs. Pre-service in teachers in the Graduate Diploma of Early Childhood Education program rated themselves higher in survey one and two compared to the pre-service teachers involved in the Graduate Diploma of Primary Education and the Graduate Diploma of Secondary Education. A reason for this difference could be based on the external part-time work of the pre-service teachers in that many of the pre-service teachers in the Graduate Diploma of Early Childhood Education were currently working in child care centres, their experiences enabling them to exhibit greater mastery experience with young children, leading to stronger teacher self-efficacy. As such, many of these pre-service teachers may already have gained understandings of teaching and learning in the early years based on experience, unlike those enrolled in the other two programs. If further research suggests this is so, it may be worthwhile to consider the importance of regular engagement with the field throughout teacher education, not just during practical experience.

As mentioned earlier, characteristics of age, program and gender were not found to be systematically related to the self-efficacy of the participating pre-service teachers. This is consistent with other research confirming that demographic variables have not been significant predicators of the efficacy beliefs of teachers (Tschannen-Moran & Woolfolk Hoy, 2007). As such, there is no theoretical reason why demographic variables would influence teacher self-efficacy as it is not related to the content or context that influences cognitive functioning.

Implications

Understanding and promoting the development of teacher self-efficacy beliefs may well be important for reducing the current attrition rate in teaching. These findings suggest that teacher educators need to understand the key points in teacher development where teacher self-efficacy beliefs are affected by each of the sources of efficacy (mastery experience, vicarious experience, verbal feedback and emotional arousal). It is also important for teacher educators to realise the influence of emotional arousal and vicarious experience on initial beliefs on entry into teacher education. If beliefs are too high, participants will encounter a significant reality shock when they enter into practical experience where mastery experience and verbal persuasion act as sources for efficacy.

This study reports on the teacher phase of initial entry into teacher education programs, where pre-service teachers enter teacher education and have no previous practical teaching experience and limited exposure to teacher education programs. The study documents the change in teacher self-efficacy during the duration of one year Graduate Diploma education programs. Findings begin to define the stage about initial entry into teacher education programs by beginning teachers and their initially higher levels of teacher self-efficacy towards perceived capabilities of teaching. It also documents a decline in teacher self-efficacy between the commencement and conclusion of programs, as well as differences in teacher self-efficacy between Graduate Diploma programs such as that of the participating early childhood pre-service teachers who rated themselves higher then pre-service teachers studying primary education or secondary education in the second survey.

Over-estimated levels of teacher self-efficacy can be detrimental to teachers when they encounter reality (Source?). The decline in teacher self-efficacy in this study suggest that some of the participating teachers may have had over-estimated their initial levels of self-efficacy. In teacher education, common wisdom would suggest the first reality shock would occur when entering the classroom during the practical period. During this time, beliefs could be hypothetically considered to be in a state of flux as the context and content are new. During this time pre-service teachers are also gaining mastery experience. Bandura (1997) predicted mastery experience as the strongest contribution to self-efficacy judgements for teachers. The early childhood teachers may have had higher teacher self-efficacy because of part-time work in child care centres, gaining mastery experience. Mastery experience would appear to also create a level of satisfaction as acknowledgement of mastering the task. Possible statements with emotion could include "I am happy with how that lesson went" or "I am sad that the students did not follow my instructions".

These results invite further investigation into the sources of teacher self-efficacy during the beginning phase of teaching to pinpoint key points in efficacy development. More research into the influence of sources in teacher education and the beginning phase of teaching would be important to teacher educators to train and equip teachers for their complex tasks. Teacher educators also require a greater understanding of the influence of mastery experience, verbal persuasion, vicarious experience and emotional arousal on teacher self-efficacy.

This study observes the periods of flux and stability as the participants moved between their teacher education programs and the beginning phase of teaching. Over the next year, the study will continue to document levels of teacher self-efficacy. In addition, the study will also collect qualitative data about teacher self-efficacy to find alternative ways to measure and evoke efficacy beliefs. If future research confirms that teacher self-efficacy beliefs are malleable during the beginning years of teaching and resistant to change after this period, teacher educators, school leaders and policy makers would need to reconsider the support needed for retaining beginning teachers by promoting resilient and sustained teacher self-efficacy beliefs.

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