

## Assessing the teaching efficacy beliefs of teacher trainees

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### Abstract

Research shows that self-efficacy is an important concept which influences a teacher's ability to teach and the effectiveness with which the teaching is done. Each teacher trainee has a sense of efficacy with regards to teaching which is influenced by many factors. This study aimed to determine the teaching self-efficacy of third-year teacher education students in three categories: student engagement, instructional strategies and classroom management. A questionnaire was administered as the survey instrument and provided data which the researchers analysed and interpreted. It was found that at this stage of the student teachers' careers, that is, at the end of their third year of study, the student teachers responded with overwhelming positive self-efficacy beliefs with regard to their future occupation.

### Introduction

A growing number of educational researchers are interested in relationships between teacher efficacy and other educational variables. For example, teachers' efficacy judgements have been correlated with decreased burnout (Brouwers & Tomic 2000), increased job satisfaction (Caprara, Barbaranelli, Borgogni, & Steca 2003), and commitment to teaching (Coladarci 1992). Ross (1998) reviewed 88 teacher efficacy studies and suggested that teachers with higher levels of efficacy are more likely to (1) learn and use new approaches and strategies for teaching, (2) use management techniques that enhance student autonomy and diminish student control, (3) provide special assistance to low achieving students, (4) build students' self-perceptions of their academic skills, (5) set attainable goals, and (6) persist in the face of student failure. This shows that there is a relationship between teaching efficacy and student academic performance.

Self-efficacy refers to the beliefs about one's capabilities to learn or perform behaviours at designated levels (Bandura 1997) and is said to have a measure of control over individual's thoughts, feelings and actions. The beliefs that individuals hold about their abilities and outcome of their efforts influence in great ways how they will behave. It is the realization of this relationship between individual beliefs and subsequent behaviours that prompted researchers' interest in self-efficacy. Self-efficacy has been applied in educational settings. The influence that self-efficacy has on motivation, learning and academic achievement has been investigated and reported (Pajares 1996; Schunk 1995). Self-efficacy has also been reported for individual subjects such as mathematics (Pajares & Miller 1994).

Furthermore, researchers have shown increasing interest in the teaching efficacy of prospective teachers. Student teaching or teaching practice is generally considered the most beneficial component of preparation by prospective and practising teachers as well as teacher educators (Borko & Mayfield 1995). It is during teaching practice that students develop a positive or a negative attitude towards teaching as a career, indicating that teaching practice can have both positive and negative influences. For example, poorly chosen placements result in feelings of inadequacy, low teacher efficacy and an unfavourable attitude towards teaching (Fallin & Royse 2000) whereas extensive and well-planned field experiences can help

prospective teachers develop confidence, self-esteem and an enhanced awareness of the profession.

### **Theoretical framework**

Self-efficacy is explained in the theoretical framework of social cognitive theory espoused by Bandura (1986, 1997) which states that human achievement depends on interactions between one's behaviours, personal factors and environmental conditions. The behaviour of an individual depends largely on early experiences at home. The home environment that stimulates curiosity will help build self-efficacy by displaying more of that curiosity, and exploring activities would invite active and positive reciprocity. This stimulation enhances the cognitive and affective structures of the individual which include his ability to sympathise, learn from others, plan alternative strategies and regulate his own behavior and engage in self-reflection (self-efficacy) (Mahyuddin, Elias, Cheong, Muhamad, Noordin & Abdullah 2006).

The self-regulating system referred to, affords an individual the capacity to alter his environment, and influences his subsequent performance. Therefore, the beliefs he has of himself are the key elements in exercising control and personal efficacy. This affects behaviour in two ways: either he engages in tasks he feels competent and confident in or he simply avoids those that he feels incompetent in. Self-efficacy helps to determine how much effort, perseverance and resilience are being put into a task. The higher an individual's sense of efficacy, the greater the effort, persistence and resilience that will be put into a task. Efficacy beliefs also trigger emotional reactions. Individuals with low self-efficacy and who believe that a task is tough can develop stress, depression and a narrow vision on how to solve the problems. On the other hand, those with high efficacy would be more relaxed in solving difficult tasks. Therefore, these influences are strong determinants of the individual's level of achievement.

The development of self-efficacy of prospective teachers is influenced by many factors such as mastery learning and vicarious experience. The positive and negative influences of self-efficacy on prospective teachers have been found to be context specific. It is against this background that this study sought to determine the self-efficacy beliefs of prospective teachers studying in the School of Teacher Education at a University of Technology with the aim of also determining the predictors of their teaching efficacy.

### **Method**

This study used a descriptive survey research design. Efficacy beliefs of pre-service teachers were examined through a survey instrument administered at the end of the first semester of the third year of the programme. The participants in this study were third year B.Ed (FET) students in the School of Teacher Education at a University of Technology in South Africa. Students in all five B.Ed (FET) programmes offered by the School of Teacher Education participated in the study.

A questionnaire was used as the instrument to collect data from the respondents. The TSES included 24 items on a 5-point scale yielding three subscales: Efficacy for Classroom Management, Efficacy for Instructional Strategies, and Efficacy for Student Engagement. 136 students answered and returned the questionnaire. The questionnaires were issued to the students during class time to optimize participation. It was emphasized, however, that participation was not compulsory. The data obtained from the questionnaires was analysed by the researchers themselves. The information was then presented in tables from which written interpretations were made.

## Results

Descriptive statistics provided a sample profile and summarized variables.

Table 1: Gender of respondents (N=136)

Gender	Frequency	%
Male	70	51.47
Female	66	48.53
Total	136	100

A good distribution of male and female respondents was obtained with close to 50% making up each group.

Table 2: Distribution of respondents per programme

Programme	Male	Female	Total	%
Natural Sciences (NS)	36	25	61	45
Economic and Management Sciences (EMS)	15	24	39	29
Technology	13	1	14	10
Languages	1	11	12	9
Computer Science	5	5	10	7
Total	70	66	136	100

The distribution of respondents per programme was not even with nearly half of the respondents in the Natural Sciences programme and nearly a third of the respondents in the Economic and Management Sciences programme, while the Technology, Languages and Computer Sciences programmes together made up the other 26% of respondents. This distribution is due to the number of students that registered and which can be accommodated in the different programmes in the School of Teacher Education. Fortunately, it does not influence the validity of the data as no comparison between the respondents in the different programmes was made.

Table 3: Teaching Efficacy Beliefs of the respondents (N=136)

Questions	Mean	SD
Q1	3.881	0.993
Q2	4.326	0.854
Q3	4.378	0.854
Q4	4.474	0.905
Q5	4.170	0.966
Q6	4.459	0.689
Q7	3.970	0.810
Q8	4.000	0.914
Q9	4.341	0.774
Q10	4.230	0.897
Q11	4.133	0.991
Q12	3.793	1.037
Q13	4.296	0.856
Q14	4.459	0.655
Q15	4.170	0.877
Q16	4.022	0.902

Q17	4.015	1.007
Q18	4.096	0.800
Q19	4.193	0.877
Q20	4.400	0.794
Q21	3.911	0.966
Q22	3.815	1.038
Q23	4.126	0.814
Q24	4.222	0.870
Average	4.162	0.881

Respondents were requested to indicate their opinion about what they would do to deal with teaching situations presented to the respondents as questionnaire statements and indicated in Table 3 as Q1 to Q24. A scale from 1 to 5 was presented with 1 representing “Nothing”, 2 representing “Very Little”, 3 representing “Some Influence”, 4 representing “Quite a Bit” and 5 representing “A Great Deal”.

On the whole it seems as if the teacher trainees felt that they could have a very big influence on the learners’ learning as the average of the means of all the questions is 4.162 out of a possible 5. They are therefore 83.24% percent certain that they can have a positive influence on their learners. The question in which the respondents scored highest was Q4: How much can you do to motivate learners who show low interest in school work? A mean of 4.474 was achieved in this question. The teacher trainees are therefore 89.48% certain that they will be able to motivate their learners to work harder once they start to teach full-time. The question in which the respondents scored lowest was Q12: How much can you do to foster learner creativity? A mean of 3.793 was achieved in this question. The teacher trainees are therefore 75.86% certain that they can develop their learners’ creativity.

The lowest standard deviation of 0.655 was obtained in Q14: How much can you do to improve the content understanding of a learner who is failing, with a mean of 4.459, while the greatest standard deviation of 1.038 was obtained in Q22: How much can you assist families in helping their children do well in school, with a mean of 3.815. The high mean of 4.459 and relatively low standard deviation of 0.655 in Q14, mean that more student trainees feel that they can improve the content understanding of a learner than the number of trainees who feel that they can assist families in helping their children do well in school, as Q22 has a lower mean of 3.815 and a relatively higher standard deviation of 1.038.

Table 4: Teaching Efficacy Beliefs regarding student engagement

Questions	Mean	SD
Q1	3.881	0.993
Q2	4.326	0.854
Q4	4.474	0.905
Q6	4.459	0.689
Q9	4.341	0.774
Q12	3.793	1.037
Q14	4.459	0.655
Q22	3.815	1.038
Average	4.194	0.868

The average of the means and standard deviations determined with regard to questions on student engagement produced scores of 4.194 and 0.868 respectively.

Table 5: Teaching Efficacy beliefs regarding instructional strategies

Questions	Mean	SD
Q7	3.970	0.810
Q10	4.230	0.897
Q11	4.133	0.991
Q17	4.015	1.007
Q18	4.096	0.800
Q20	4.400	0.794
Q23	4.126	0.814
Q24	4.222	0.870
Average	4.149	0.873

The average of the means and standard deviations determined with regard to questions on instructional strategies produced scores of 4.149 and 0.873 respectively.

Table 6: Teaching Efficacy beliefs regarding classroom management

Questions	Mean	SD
Q3	4.378	0.854
Q5	4.170	0.966
Q8	4.000	0.914
Q13	4.296	0.856
Q15	4.170	0.877
Q16	4.022	0.902
Q19	4.193	0.877
Q21	3.911	0.966
Average	4.143	0.901

The average of the means and standard deviations determined with regard to questions on classroom management produced scores of 4.143 and 0.901 respectively.

Herewith a summary of the information provided in Tables 4, 5 and 6.

Table 7: Summary Table of Teaching Efficacy Beliefs

Category	Mean	SD
Student engagement	4.194	0.868
Instructional strategies	4.149	0.873
Classroom management	4.143	0.901
Overall Teaching Efficacy	4.162	0.881

Clearly, the teacher trainees' efficacy beliefs with regard to the three sub-scales do not differ much. The difference in mean scores between Instructional strategies and Classroom management is a mere 0.006, the difference in mean scores between Instructional strategies and Student engagement is 0.045 and the difference in mean scores between Student engagement and Classroom management is 0.051. The greatest difference in means between the sub-scales is therefore 1.216%, while the smallest difference in means between the sub-scales is a mere 0.145%. The standard deviations of the three sub-scales show a similar pattern.

## Conclusion

This paper reported on the first half of a study into the self-efficacy beliefs of third-year teacher trainees studying in the School of Teacher Education at the Central University of Technology, in the Free State Province of South Africa. A questionnaire was administered to the respondents to determine their self-efficacy beliefs with regard to teaching at this stage of their careers. The students responded with overwhelming positive self-efficacy beliefs with regard to their future occupation. A follow-up questionnaire will be administered to these same students after they have completed a six-month work-integrated learning experience during the first six months of 2011. Their self-efficacy beliefs will then once again be determined and changes in their beliefs are predicted.

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