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Pre-service Teachers' Self-efficacy Beliefs at the Two Colleges of Botswana

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

Aim: The aim of the study was to investigate teachers' self-efficacy beliefs of two colleges that train secondary school teachers.
Place and Duration: Tonota College of Education and Tlokweng college of education in the month of October, 2013.
Methodology: The sample included 324 Pre-service teachers: 76 males and 86 females from Molepolole College of Education and 28 males and 134 females from Tonota College of Education, respectively.
Results: The response rate for Molepolole College of Education was 88.5% and for Tonota College of Education it was 72.3%. The overall response rate for the two colleges was 80.4%. Student Engagement (P = 0.01). Instructional Strategies (P= 0.01) and Classroom Management, (P=0.02).
Conclusion: Molepolole College of Education pre-service teachers have a high teacher efficacy in all the three subscales of TSES and Tonota College of Education pre-service teachers have low teacher efficacy which are similar in all the three subscales.

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Keywords: Teachers' sense of efficacy; pre-service teachers; student engagement; classroom management and instructional strategies.

1. INTRODUCTION

1.1 Teacher Efficacy

Teacher efficacy as defined by [1] refers to "teachers' beliefs in their abilities to affect students' performance". The above mentioned definition can bring a solution to problems in education if teachers and pre-service teachers can have a high teacher efficacy and become productive in their work. It implies that students can be motivated, made to know how to learn and accomplish more in their learning. [2] proposed that "teachers' beliefs are the ideas that influence how they conceptualize teaching" and this self-conception is central to efficacy in teaching.

Pre-service teachers, as future practitioners, ought to develop more ideas and positive attitudes towards teaching because those ideas can have an impact on their profession. Furthermore, personal beliefs can motivate them to have an effect on engaging all students even including those who are disruptive in learning. [2] stated that consideration of personal beliefs characterizes "what it takes to be an effective teacher and how students ought to behave". Teacher efficacy as defined above shows that individuals' beliefs among themselves can have an impact on student's learning. The researcher can expect differences of efficacy beliefs in the present study because pre-service teachers of MCE and TCE are different and people's perceptions are also different and even in career choices [3].

Pre-service teachers need to be trained effectively so that they can acquire the necessary skills from their training programmes. This is important for Botswana education as it needs effective teachers for its developments. According to [4] effective teachers are those who are able to produce more learning in their students than would be expected for the students' background and ability" The low performance of students, particularly in Botswana schools can improve if every teacher can offer effective instructions and engage students in learning.

1.2 Gender Differences in Teacher Efficacy Beliefs

Teacher efficacy, as an individual's conviction reveals gender differences among males and females of Molepolole and Tonota Colleges of Education. What causes these gender disparities is critically important for this study. To get the bottom of these causes, the study is guided by Bandura's Social Cognitive theory. Self-efficacy includes powerful 'personal factors' and [5] proposed that self- efficacy beliefs are vital to 'human agency' or an individual's capability to do something [6].

The importance of beliefs in self-efficacy is that, beliefs act as mediators between knowledge and behaviour while connecting to environmental situations. Self-efficacy provides useful skills; because if they have a high teacher efficacy, they can have an impact on the behaviours of students as well as overcoming learning environmental challenges. Perceived self-efficacy, according to [5] includes "beliefs in one's capabilities to organize and execute the courses of action required to produce a given attainment". The definition also implies that an individual has convictions that he/she has the ability to do what is required in preparing and completing assignments in an excellent way [6].

It is important for pre-service teachers to have high teacher efficacy beliefs because they can become effective teachers who can influence student learning. Beliefs are therefore vital because they can enable an individual to be focused on what they are doing. [7] asserted, ""beliefs are best indicators of the decisions individuals make throughout their lives". Therefore, beliefs can also influence pre-service teachers to make decisions. Thus, pre-service teachers can be able to make right decisions in relation to their work. They can plan and prepare their instructional methods and materials for teaching that effectively impact on students learning during their career as teachers. [8] also reported that self- efficacy is related to gender role playing because it is a major motivational factor that "underpinned gender behaviour". [9] stated that more than "four out of five students in teacher training colleges are females, and almost the same proportion applies in the primary teaching force in 1989. The same applies in some countries too as females still dominate the teaching profession.

A study by [10] reported differences in self-efficacy and job satisfaction in males and females in Denmark. The study's findings

reported females having higher self- efficacy and job satisfaction than males. Females were reported to have a higher level of empathy than males. Empathy is defined as "the ability to spontaneously and naturally tune into another person's thoughts and feelings" [10]. Teachers with empathy are desired in Botswana, particularly when the country is facing challenges of low performing students from primary to senior secondary schools: They can listen to students and assist them in regard to their needs as they learn.

2. METHODOLOGY

A convenience sample was used in the present study where participants completed the questionnaire (24 items of Long Form instrument) was employed to collect data from pre-service teachers in Molepolole and Tonota Colleges of Education respectively. Two research assistants administered the questions to the two colleges separately.The questionnaires were administered for twenty minutes and prior to that, the research assistants explained to the participants the importance of the study, and the need to clear misunderstanding in the questionnaire.

2.1 Measure

The Teachers' Sense of Efficacy Scale (TSES), Long Form Instrument designed by [11] with 24 items comprising of the three subscales, Efficacy in Student Engagement, Efficacy in Instructional Strategies and Efficacy in classroom Management were used in the present study to measure the efficacy beliefs of pre-service teachers. The Long Form instrument is a Likert type of scale. The above mentioned instrument is valid and reliable to use with Pre-service teachers in Botswana because the author has used Teachers' Sense of Efficacy instrument before with in-service teachers in Botswana in 2010 and 2011 for her doctoral research. TSES instrument with 12 items was used with 1000 teachers. The reliability for Efficacy in Student Engagement was .741, Instructional Strategies .802 and Classroom Management .741. The results are also consistent with that of the instrument developers see, [11].

2.2 Sample and Sampling Procedures

The sample in the present study included 324 pre-service teachers, 76 males and 86 females were from Molepolole. Tonota College of Education had 28 males and 134 females. Participants were final year students completing the teaching programme. Each college had 162 participants. Participating in the study was voluntary and it was based on convenience sample. The students were preparing for the final examinations, and the research and research assistants, with the permission of the college principals, distributed the survey to those who were willing to participate in the study. The study was conducted in October 2013. The age range of the participants was 20-30. The majority of the participants were young adults; 20-24 years (see Table 2).

2.3 Procedures for Data Collection

The survey questionnaire was distributed by two research assistants at each college in the month of October 2013. The TSES (Long Form instrument was administered to pre-service teachers. The copies of printed questionnaires were distributed to the participants, and they completed the survey in 20 minutes. The researcher observed confidentiality in the study as participants were not asked to indicate their names when completing the questionnaire. There were no incentives for participation. The letters from the researcher to the participants thanked them for participating in the study. They read the letters before completing the questionnaire. The Ministry of Education, Skills and Development issued permission for the researcher and research assistants to collect data in the colleges. The response rate for Molepolole College of Education (MCE) was 88.5% and Tonota College of Education (TCE) was 72.3%. The overall response of the two colleges is 80.4%.

The Department of Training and Development advised the researcher to make the necessary arrangements with principals, lecturers and students before data collection. The researcher wrote letters to principals asking for their permission to collect data in the colleges. Pre-service teachers were written letters requesting them to participate in the study. The letters were distributed with the questionnaires during data collection time. Appointments were sought to visit colleges, and this was done through telephone communications. Meetings with administration of the colleges were also arranged.

The research assistant introduced themselves to participants during data collection and explained

the purpose of the study. The research assistant who distributed questionnaires in Tonota College of Education is a former lecturer of the college but currently pursuing Masters Programme in educational administration and management, at the University of Botswana. The Molepolole College of Education research assistant is a lecturer at the college and has worked with the researcher before in regard to data collection and analysis.

2.4 Data Analysis

Data was analysed using independent sample t-test Statistical Package of Social Sciences (SPSS). The Independent T test was conducted among the two colleges in relation to the 3 subscales of Teachers' Sense of Efficacy Scale. Independent samples t-test statistical method was used to analyse the data collected, using SPSS statistical package. The demographic data was coded. Gender variables were also coded 1 for males and 2 for females. Other variables for example, age; education qualifications, teaching experience, nationality, and residential areas were coded numbering from 3-8.

3. RESULTS AND DISCUSSION

The following is an analysis of question 1 from TSES Long Form instrument. Data was analysed according to the research questions of the study and the findings were presented in both text and tabular forms.

Research Question1

Will pre-service teachers of Molepolole and Tonota colleges of Education differ in their responses to TSES Long Form Subscales?

The Independent Samples T-test was conducted; and the results showed significant differences among the two colleges in relation to the 3 subscales of the Teachers' Sense of Efficacy Scale. The means of Efficacy in Student Engagement, Instructional Strategies and Class-room Management subscale (Table 1) are higher in Molepolole College of Education that Tonota. Pre-service teachers of Molepolole have high teacher efficacy beliefs than of Tonota. The results of the independent T-test also show significant levels as follow: Student engagement, (P = 0.01). Instructional Strategies, (P = 0.01) and Classroom Management, (P=0.02).

Pre-service teachers in Tonota College of Education have similar means in the three subscales of TSES. The results are surprising because both colleges train secondary school teachers, the curriculum can be expected to equip students and influence them to have high efficacious believes. Research has also revealed that while enrolled in teacher education programs pre-service teachers have the ability to form perceptions in relation to the abilities to teach [12]. Molepolole pre-service teachers seem to possess the abilities to teach as described by the above mentioned researchers. The researcher thinks that, because some pre-service teachers have acquired teaching experience before they enrolled in the Diploma of Education programme. Thus, their abilities are better and have influenced them to develop perceptions of their abilities to teach.

Research Question 2

Are there gender differences in the efficacious believe of pre-service teachers in the two colleges of Botswana?

Gender differences are evident, male students at Molepolole and Tonota Colleges aged 30 and above differed in how they engage students in learning. The means of Efficacy in Student Engagement shows the difference 3.77 and 3.40 respectively, (Table 2). Males at Molepolole College of education students rated themselves higher in student engagement than males' colleagues in Tonota College. Females aged 30 and above at Molepolole College have higher mean scores than females at Tonota College. The mean of females aged 30 and above is 3.90 (MCE) and 3.56 (TCE). Thus, females in both colleges differ in how they engage student in learning. Also, Molepolole college females aged 30 and above have higher efficacious beliefs than females at Tonota College.

Engaging students in learning is essential; engagement is defined as "energy in action" the connection between the person and the activity" [13]. In Botswana performance of students at primary, junior and secondary is not impressive score. For Molepolole males and females to have a high teacher efficacy implies that their students can have the potential to be task focused hence they can be connected to activities and know how to learn.

Table 1. Showing independent samples T-test

Independent samples test										
		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
									Lower	Upper
Student engagement	Equal variances assumed	5.765	.017	4.189	322	.000	.30324	.07238	.16083	.44565
	Equal variances not assumed			4.189	310.614	.000	.30324	.07238	.16081	.44567
Instructional strategies	Equal variances assumed	11.791	.001	5.035	322	.000	.39815	.07908	.24257	.55373
	Equal variances not assumed			5.035	307.486	.000	.39815	.07908	.24254	.55376
Classroom management	Equal variances assumed	6.040	.015	3.069	322	.002	.24769	.08071	.08889	.40648
	Equal variances not assumed			3.069	311.564	.002	.24769	.08071	.08887	.40650

Table 2. Gender differences in student engagement

Gender	Age grp	College of education	Mean	Std. deviation	N
Male	20-24	MCE	3.6	0.62	34
		TCE	3.3	0.60	19
		Total	3.5	0.62	53
	25-29	MCE	4.0	0.39	31
		TCE	3.6	0.88	4
		Total	3.9	0.47	35
	30+	MCE	3.9	0.54	11
		TCE	3.8	0.48	5
		Total	3.8	0.51	16
	Total	MCE	3.8	0.56	76
		TCE	3.4	0.63	28
		Total	3.7	0.60	104
Female	20-24	MCE	4.0	0.53	42
		TCE	3.5	0.71	97
		Total	3.7	0.70	139
	25-29	MCE	3.9	0.68	36
		TCE	3.8	0.77	32
		Total	3.9	0.72	68
	30+	MCE	4.0	0.66	8
		TCE	3.7	0.37	5
		Total	3.8	0.57	13
	Total	MCE	4.0	0.60	86
		TCE	3.6	0.72	134
		Total	3.7	0.70	220
Total	20-24	MCE	3.8	0.61	76
		TCE	3.5	0.70	116
		Total	3.6	0.68	192
	25-29	MCE	3.9	0.56	67
		TCE	3.8	0.77	36
		Total	3.9	0.64	103
	30+	MCE	3.9	0.58	19
		TCE	3.7	0.40	10
		Total	3.8	0.53	29
	Total	MCE	3.9	0.59	162
		TCE	3.6	0.71	162
		Total	3.7	0.67	324

4. DISCUSSION

The results are significant with regards to the teachers' sense of efficacy beliefs of pre-service teachers in the two colleges of education in Botswana. Pre-service teachers in Molepolole College of Education have a high teacher efficacy in all the three subscales, Instructional Strategies, Student Engagement and Classroom management. They believe that they can use different methods of teaching, engaging students in learning, as well as managing undesirable behaviours displayed by students in the classroom environments.

The results are a source for concern for Tonota College of Education students. They have a low teacher efficacy compared to their colleagues in other Colleges. They have the same mean scores in the 3 subscales. The participants in the present study were final year students who were left with few weeks to complete their studies and

were writing their final examinations. And after they leave the college and go to the field and practice teaching.

Teachers with a high teacher efficacy are useful in the teaching profession because they can have an impact in students' learning [14] have stressed on the importance of teacher efficacy in relation to effective teaching, they highlighted that, teachers who are highly efficacious, perceive their teaching ability to increase effectively and they involve students in learning even students who are not motivated to learn.

A high teacher efficacy does not benefit teachers only; but also students who become the beneficiary in the learning settings. Research reveals a correlation between teacher efficacy beliefs, students' results and teacher behaviours [10-20].

The correlations between teacher efficacy beliefs and students outcomes show positive results. Students who are taught by teachers with high teacher efficacy are perceived as successful in learning. And also students are motivated and participate well in learning activities. They also have a positive self-esteem towards lessons, and develop positive attitudes towards school than of those students who are taught by teachers with low teacher efficacy [21].

Teachers with a low teacher efficacy have been reported to use teacher centered approaches rather than student centred approaches [21] .Pre-service with a low teacher efficacy can be encouraged to develop personal efficacy believes. Personal teaching efficacy is defined as an impact on the growth of beliefs about being a good teacher according to [2] For individuals to be aware of what is it to be an effective teacher, he/she ought to have a positive impact on students' and have the characteristics of a good teacher. On the contrary teachers with low teacher efficacy will criticize students for failing; and show-impatience when confronted with challenges in problematic circumstances. These teachers were found to have a low personal teacher efficacy [17].

In addition, [15] reported that teachers with a low personal teaching efficacy have teachers' beliefs that are linked to strict punishment procedures, such as using authority and verbal abuse and sending students out of class during learning times. Strict punishment procedures are common in Botswana government schools; teachers use corporal in classrooms though the government does not allow them to do (see [22]).

Males in both colleges were 104 and females 220. The results of gender differences are interesting because globally, teaching is viewed as a female job. Contrary male trainees aged 25-29 and above in Molepolole College of Education perceived themselves engaging students in learning, the same with females aged 20-24 and 30 and above. The number of females in both colleges is twice than of males. Therefore it is not about quantity and it is quality when it comes to student engagement in relation to gender in pre-service of Molepolole and Tonota. Also, both colleges offer three year Diploma in Secondary Education.

Enrolment in those colleges depends upon the choices of applicants and admissions criteria, hence the small number of students' age. For example Molepolole offers Art, Design and Technology, Music and Computer Science. Tonota colleges majors in Agriculture, Home Economics, Business Studies, Physical Education and Social Studies. The results are contrary to the study findings of [22] where older teachers engaged students in learning that younger students.

5. CONCLUSION

To conclude, Molepolole College of Education pre-service teachers have higher efficacy beliefs in all the three subscales. They rated themselves higher in Efficacy in Instructional strategies than other subscales. And their mean scores are similar in Efficacy in Student Engagement and Classroom Management. Tonota Colleges of Education pre-service teachers have low teacher efficacy beliefs, and the same for all three subscales. Male trainees have significant higher mean scores than females. The results show that teacher efficacy is truly an individual's judgment on him/self and how he/she perceives teaching and responsibilities on how to impact students' learning. However, the Ministry of Education and teacher educators in Botswana need to focus more on teacher trainees that have a low teacher efficacy beliefs, especially when the results in both primary, junior and secondary schools are not satisfactory.

Teacher efficacy is related to commitment, enthusiasm, and instructional behaviours [11] thus teacher educators can develop more courses that will enhance a higher efficacy. In

addition teachers with high teacher efficacy beliefs will dedicate their time to work and aim at increasing their teaching abilities to an effective instruction that has an impact in students' learning.

The study employed convenience sample of final year teacher trainees who were available to participate in the study. Thus the study lacked random sample. The findings cannot be generalized for all pre-service completers of the two colleges. The research was conducted in October, 2013 when final year students were very busy preparing for their final examinations. And some students gave priority to their work rather than participating in the study. The researcher recommends qualitative, longitudinal, observational, case studies and action research for future research. Also, teacher efficacy research is needed in institutions that train teachers in Botswana.

This writer shares the same views with [21] "pre-service teachers can be educated efficiently while they are attending their teacher education programs as future teachers".

COMPETING INTERESTS

Author has declared that no competing interests exist.

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