

# Meta-Analysis of Teaching Standards Displayed by ODL Post Graduate Diploma in Education Student Teachers from Different Institutions in Zimbabwe in Mashonaland East Province

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**Abstract**— Teaching standards is the body of knowledge and skills that empower and transform graduates to professional teachers. Trainee teachers can use these to help learners to transform themselves by taking responsibility for their learning and apply knowledge and skills to transform their environment. Trainee teachers learn to value individual differences in learners and become conscious of the dynamic learning environment which can enrich learning. This meta-analysis focuses on the teaching standards displayed by open and distance learning post graduate students enrolled in different institutions in Zimbabwe deployed in Mashonaland East Province in 2016. Quantitative analysis using the SPSS was used to numerically describe standards displayed by students. Supervision critiques for 38 out of 200 students were assessed. Students lacked creativity with use of media, especially electronic media even, where schools were electrified. Institutions could lead in the transformation process by using latest teaching media allowing students to experiment with such media at college. Education authorities to explore ways of encouraging schools to avail latest educational technology

**Index Terms**— Teaching standards, teaching practice

## I. INTRODUCTION

The 21<sup>st</sup> Century teacher has a new set of roles in the school and classroom. The teacher has assumed the role of an accomplished professional whose preoccupation is to facilitate learning based on sound theoretical foundations. Such an approach calls for re-engineering of teaching standards. “Teaching standards define what teachers should know and do,” Virginia Department of Education 2012:1). Commission on Teacher Credentialing(2009:1) explains that effective teaching is facilitated by “knowledge, skills, artistry, passion and commitment.” It is through the development of teaching standards that such qualities are developed in the student teacher.

Teaching standards generally focus on professional knowledge, instructional planning, instructional delivery, learning environment, academic success of students and professionalism (West Virginia Commission for Professional Teaching Standards (2011), North Carolina Teaching Standards Commission 2013 and Virginia

Department of Education 2012). Teaching standards are universally applicable though invariably articulated by different educational systems.

Teaching standards are indispensable for quality educational delivery. For Global21, teaching standards “ensure alignment with the state’s 21<sup>st</sup> Century teaching and learning initiative.” For instance, the current focus of the Government of Zimbabwe in education is on Science, Technology, Engineering and Mathematics teaching and learning. Teaching standards should reflect on this focus. Virginia Department of Education (2012) views teaching standards as direction setting in the teaching profession whereby areas that teacher competencies should be focused are spelt out. Efforts in teacher development, induction, ongoing professional development and teacher evaluation can be concentrated on areas of focus, as set out by desired teaching standards. For instance, the Government of Zimbabwe is currently working towards improving quality of teaching through financing continuous development of teachers, teacher in-service training, teacher supervision and teacher professional development (Government of Zimbabwe 2013).

While all the skills are very essential, there are those that really matter when it comes to the real grasp of concepts by the learners. For example, the supervision critics used have different weights. Curriculum and planning contributes 20%, lesson delivery 40%, learner and learning environment 30% and professional development 10%.

## II. STATEMENT OF THE PROBLEM

There is a clear set of teaching standards outlined and taught in teachers’ colleges and universities in Zimbabwe. It is not clear if the students master the standards and in the proportions aspired by institutions. It is therefore the focus of this research to evaluate the extent to which student teachers acquire the teaching standards at exit point.

## III. RESEARCH OBJECTIVES

- Evaluate mastery of teaching standards by PGDE students across the region.
- To find out if there is an association between teaching standards mastery and gender.
- To find out if there is an association between teaching standards mastery and area of specialisation.
- To explain the effect of the different teaching standards acquisition on overall student performance.

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#### IV. RESEARCH QUESTIONS

- What is the level of teaching standards mastery for PGDE students across the region?
- Is there an association between overall mastery of teaching standards and gender?
- Is there an association between overall mastery of teaching standards and teaching area?
- Which are the explanatory variables for the overall performance of PGDE students across the region?

#### V. REVIEW OF RELATED LITERATURE

##### Conceptual Framework

“Teaching standards define what teachers should know and do,” Virginia Department of Education 2012:1). Teaching standards invariably termed academic, education and learning standards refer to written statement of what knowledge and skills learners should grasp and demonstrate their assimilation of the concepts both theoretically and practically. In Zimbabwe, the Post graduate diploma in education (PGDE) programme is offered by universities to holders of degree in subjects that are taught in schools such as, Mathematics, English, Accounting, Sciences and so forth. The programme transforms the degree holders to qualified teachers. The transformation or programmes takes place through two phases. The first involves theoretical knowledge on the theories of teaching, with the second phase involving the practical aspects of teaching in the natural teaching environment. The student is in charge of a full teaching load with the guidance of a mentor. It is through this complete approach to teacher development that universities in Zimbabwe develop the holistic teacher. The teaching standards though invariably termed generally are, curriculum planning, learners and the learning environment, teaching skills, professional growth and professional responsibilities for the school and the community. Students are expected to reflect a good repertoire of these teaching standards during the teaching practice period.

##### Teaching practice

Fagbulu (1984) equates teaching practice with apprenticeship training stage where the trainee teacher is exposed to the real teaching environment for the purpose of application of learnt theories of education. Salawu and Adeoye in NOUN (2008) define teaching practice as the opportunity availed for the trainee teacher to demonstrate and improve their pedagogical skills over a specified time as prescribed by the training institution. Teaching practice can therefore be viewed as the period during which the student teacher is afforded with the chance to put into practice theoretical knowledge learnt. In the process the student teacher develops, under the guidance of the school and institution, teaching skills, teacher roles (Stones and Morris 1977) and responsibilities in the school and teaching ethics. It is through teaching practice that teaching skills, curriculum and planning, learner and learning environment, professional development and professional responsibilities for the school and the community as teaching standards are made clearer through interaction with the whole teaching community. Furlong et al (1988) succinctly summarise that it is through teaching practice that beginning teachers are socialized into the profession.

##### Theoretical Framework

##### Experiential Learning

The research was guided by the theory of adult learning as PGDE students are adult learners who already have university experience and qualifications. Conlan, Grabowski and Smith (2013) aptly describe experiential learning as simply, “learning by doing.” Experiential learning is a learner centred approach where the learner actively engages with learning materials individually or in groups. For instance, PGDE students during teaching practice have already learnt more than two thirds of their programme theoretically. Students had time to put into practice what they learnt from the first time they came into contact with their content, so this is now time to get feedback on what they have been practicing. Conlan, Grabowski and Smith (2013) further explain that experiential learning uses participants’ experiences and their own knowledge about the subject. This is heavily exploited during teaching practice where the majority of students were practicing as untrained teachers. It is through theoretical knowledge that they first realized what they have been doing correctly and which practices they have to change, teaching with instructional media, undue recognition of learner diversity in the class, for example. Experiential learning is very effective during teaching practice as theories are tried out and students discover first hand, what professional teaching is like. Experiential learning enables holistic development of the student teacher where the cognitive, emotional and physical aspects of the learner are developed. Student teachers are intrinsically motivated as they aspire to be effective teachers who conduct themselves professionally.

#### **5.1 The teaching standards that institutions develop in student teachers**

##### **Curriculum and Planning**

The second operational objective 2013-2015 of the Ministry of Primary and Secondary Education is to improve learning quality and relevance (Government of Zimbabwe 2013). This effort targets on curriculum and planning standards for teachers. Curriculum and planning are teaching standards that enhance the quality of learning. Aspects of curriculum entail teachers mastery of content within their areas of specialization. North Carolina Teaching Standards Commission (2013) contends that, “teachers should know beyond the content they teach.” The teacher stretches his/her to roles from facilitator to resource person allowing students to extend beyond mere basic instruction and knowledge. Knowledgeable teachers help learners to realise the interconnectedness of concepts and disciplines. Subject specialization is viewed able to facilitate the development of an efficient, effective and astute teacher with a high level of teaching skills and excellent mastery of the subject one specializes in (Bailey, Curtis and Nunan, 2001).

Teachers should be knowledgeable in designing learning experiences that set challenging yet attainable goals for the learners (Global21 2011). Learning experiences encompass contemporary issues in a variety of disciplines. Planning, as a teaching standard enables teachers to project on instructional resources and media which are commensurate with modern teaching strategies (Virginia Department of Education 2012). In Zimbabwe, effective instructional design develop in learners good problem-solving abilities, scientific reasoning, good communication skills, intra and inter-personal

competencies and life and work skills (Government of Zimbabwe 2013).

#### **Individual learners and the learning environment**

North Carolina Department of Public Instruction (2013) states that as a standard teachers should “know the appropriate level of intellectual, physical, social, and emotional development of their students.” In-depth knowledge of individual differences of learners is ideal for appropriate instructional planning and delivery as learning styles can then be factored in. The Government of Zimbabwe (2013) operational objectives and target 003 for 2013-215 was to improve conditions of learning in schools. This is a realization of the crucial role learning environments play for quality instruction to take place. The teacher thus should play his/her role in creating the best of a physical environment for learners. DeMonte (2013) quotes Jensen, the director of the school education programme at the Grattan Institute in Australia as saying, “Shanghai is the first place where I have walked into a school and thought, this is actually really different. It’s the best professional learning I have seen for teachers anywhere in the world.” The remarks are reminiscent of the impression a learning environment can have on visitors but most importantly learners, when they feel they are strategically located for learning.

The learning environment is also through the establishment of favourable communication channels between the teacher and the students. Students should freely communicate with the teacher (Virginia Department of Education 2012). The teacher should also facilitate pupil-pupil interaction for cross pollination of ideas, respectful and supportive environment with an ambience for promotion of self-motivation (Virginia Department of Education 2012, Global21 2012).

#### **Teaching skills**

Global2 (2012) explains that teaching as standard involves “planning, lesson delivery, evaluation of lessons and adjustments based on the previous lesson’s experiences.” North Carolina Department of Public Instruction (2013) notes that “teachers use a variety of methods to assess what each student has learned. Formative and summative assessments (Global21 2012) are used to uplift students’ performance standards. (Virginia Department of Education 2012) propounds that teachers set measurable targets for students, engage them in tasks that aid knowledge acquisition, let them assume responsibility for quality of work and provide feedback. At the end of a learning episode the teacher reflects on the whole encounter to feed forward into the next lesson. The execution of lesson delivery marks the difference between a professional teacher and a novice.

#### **Professional Development**

The education sector is no different from changes and developments that take place in any other sphere of human activity like economics, politics and business. Consequently, there is need for continuous update and improvement for educators. The process of continuous self-renewal some termed “staff development, in-service teaching, professional learning and or continuing education.” Professional development help teachers to “match new instructional methods, changes in subject content, advances in technology, changed laws, procedures and student learning needs” (Mizell 2010:9). It is through professional development that teachers

improve their professional knowledge, roles and responsibilities refine approaches, instructional technologies (Harwell 2013). Professional development facilitates collaboration with colleagues and broader professional community for the benefit of the teacher and student learning Commission on Teacher Credentialing (2009). A research conducted in the United States of America on the effects of professional development found that teachers in grades K-2 delivered higher quality instruction and their students had greater gains in literacy learning” (DeMonte 2013).

#### **Professional responsibilities for the school and the community**

Teachers have responsibilities for the school where they demonstration leadership in the school. They contribute towards the development of goods, strategies in the school improvement plans, budgeting and mentoring new teachers. Teachers lobby and practices affecting student learning. Teachers also implement initiatives to improve education North Carolina Department of Public Instruction (2013). Teachers promote collaboration between school and community.

### **VI. METHODOLOGY**

The quantitative paradigm was adopted. Babbie (2010:98) describes quantitative methods as research methods that “emphasise objective measurements and the statistical use of data collected through polls, questionnaires, surveys or by manipulating pre-existing statistical data using computational techniques.” It was ideal to use the quantitative inquiry as numerical data on the teaching standards was used to statistically evaluate the mastery of the various standards as displayed by student teachers in the province (Aliaga and Gunderson 2000). The meta-analysis used the survey design where a questionnaire may be used to measure characteristics of a population with statistical precision (Daniel 2010). In this research observation, critiques of 38 students out of about 200 PGDE students on teaching practice from across the university spectrum were statistically analysed using SPSS. Descriptive statistics such as the mean and standard deviation for various teaching standards were calculated. The influenced of area of specialization and gender on teaching standards acquisition were examined statistically.

#### **Population**

According to Castillo (2009), a research population is a group of people having similar characteristics, which are of interest to a researcher. About 200 PGDE students in Mashonaland East Province doing teaching practice in the first semester of 2016 formed the population. The students have gone through the first two semesters and now on teaching practice. The research sought to evaluate the teaching standards mastered by the student teachers. It was impossible to get critiques for all the students as these were collected during teaching practice by the researcher after discussing with the students on the research.

#### **Sampling**

During TP supervision, the researcher visited schools where students were stationed. After observations and discussions with the students the supervisor asked students if there were

**Meta-Analysis of Teaching Standards Displayed by ODL Post Graduate Diploma in Education Student Teachers from Different Institutions in Zimbabwe in Mashonaland East Province**

PGDE enrolled with other institutions. In instances where students from other institutions were in the same school with those from the researcher’s institution, the researcher discussed the research with the students and asked for their cooperation which was secured in 10 out of 13 instances. All the 28 students from the researcher’s institution, gave their consent verbally giving a total of 38 critiques analysed. All the students from the southern and central districts of the Mashonaland East Province that is Chikomba, Hwedza, Seke and Marondera, took part in the research.

**Data Presentation and Interpretation**

The results of the research were presented in order of the research questions.

The gender of the respondents is as tabulated below.

**Table 1: Sex of respondent**

Valid female	22	57.9	57.9	57.9
male	16	42.1	42.1	100.0
Total	38	100.0	100.0	

The majority 22(57.9%) of the respondents were female teachers. These findings may reflect on the overall enrolment of PGDE students where more females were enrolled in the programme than males. For instance as at 11 March 2016 one institution had 30 male and 40 female PGDE students registered for teaching practice.

**What is the level of teaching standards mastery for PGDE students across the region?**

An analysis of the level of teaching standards mastery was conducted using descriptive statistics and the results are shown in table 2 below.

	Frequency	Percent	Valid Percent	Cumulative Percent
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**Table 2: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Overall performance of student in teaching practice as a %	38	59	88	73.95	6.802	-.204	.383
Performance in curriculum and planning	38	8	18	14.95	1.676	-1.804	.383
Performance in teaching	38	20	36	29.87	3.588	-1.128	.383
Performance in learner and learning environment management	38	16	27	21.18	2.837	-.100	.383
Performance in professional development	38	6	10	7.92	.784	-.212	.383
Valid N (listwise)	38						

The overall performance of student teachers ranged from 59% to 88% and averaged 73.95% with a standard deviation 6.8%. The overall performance scores are negatively skewed indicating that most students performed above average. Performance in all the teaching standards was above average with little variation in performance among all respondents. For example, performance in curriculum and planning averaged 14.95 (out of 20) with a standard deviation of 1.68 while performance in teaching averaged 29.87 (out of 40) with a standard deviation of 3.59. Performance scores in all teaching standards were negatively skewed showing a very good mastery cutting across all teaching standards.

**Is there an association between overall mastery of teaching standards and gender?**

The Mann-Whitney U test was used to test whether there was a significant difference in performance between male and female teachers. The results are shown in Table3 .

**Table 3: Results of Mann-Whitney U test Test Statistics<sup>b</sup>**

	Overall performance of student in teaching practice as a %
Mann-Whitney U	129.500
Wilcoxon W	265.500
Z	-1.378
Asymp. Sig. (2-tailed)	.168
Exact Sig. [2*(1-tailed Sig.)]	.171 <sup>a</sup>

a. Not corrected for ties.

b. Grouping Variable: Sex of respondent

The Mann-Whitney test statistic (U =129.5; p = 0.171) is not statistically significant even at 10% level of significance showing that there was no significant difference in performance between male and female teachers. Male and female teachers performed equally the same.

**Is there an association between overall mastery of teaching standards and teaching area?**

**Table 4: Subject Area Specialisation**



	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Arts	28	73.7	73.7	73.7
Science	5	13.2	13.2	86.8
Commercials	5	13.2	13.2	100.0
Total	38	100.0	100.0	

Most of the teachers (73.7%) specialise in arts subjects and relatively few teachers specialise in Science and Commercial subjects. The frequency distribution of teachers in respect of subject areas is consistent with the national shortage of science and commercial subject teachers experienced in the country.

The Kruskal-Wallis H test was used to examine whether there was significant difference in performance among student teachers according to their subject area specialisation. The results are shown in Table 5.

**Table 5: Results of Kruskal-Wallis H test**

**Test Statistics<sup>a,b</sup>**

	Overall performance of student in teaching practice as a %
Chi-Square	3.307
df	2
Asymp. Sig.	.191

a. Kruskal Wallis Test

b. Grouping Variable: Subject area specialisation

The results show that there was no significant difference (Chi-square = 3.307, p = 0.191) in the performance of student teachers in different subject areas. The performance did not depend on the area of specialisation.

**Which are the explanatory variables for the overall performance of PGDE students across the region?**

Regression analysis was conducted to evaluate the relative contribution of each teaching standard to overall performance. The results are shown in Table 6.

**Table 6: Results of Regression Analysis**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.996 <sup>a</sup>	.992	.991	.662	1.141

a. Predictors: (Constant), Performance in professional development, Performance in learner and learning environment management, Performance in curriculum and planning, Performance in teaching

b. Dependent Variable: Overall performance of student in teaching practice as a %

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1697.416	4	424.354	967.216	.000 <sup>a</sup>
	Residual	14.478	33	.439		
	Total	1711.895	37			

a. Predictors: (Constant), Performance in professional development, Performance in learner and learning environment management, Performance in curriculum and planning, Performance in teaching

b. Dependent Variable: Overall performance of student in teaching practice as a %

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.847	1.343		-.631	.533
	Performance in curriculum and planning	.986	.073	.243	13.520	.000
	Performance in teaching	1.007	.037	.531	26.919	.000

**Meta-Analysis of Teaching Standards Displayed by ODL Post Graduate Diploma in Education Student Teachers from Different Institutions in Zimbabwe in Mashonaland East Province**

Performance in learner and learning environment management	.985	.046	.411	21.316	.000
Performance in professional development	1.151	.163	.133	7.069	.000

a. Dependent Variable: Overall performance of student in teaching practice as a %

The results show that performance in professional development was much higher and contributed most significantly to overall performance compared to other standards. This was followed by performance in teaching, then performance in curriculum and planning and lastly in learner and learning environment management. All coefficients are statistically significant and positive showing positive correlation between the standards and overall performance. The model fit is good as shown by a high R<sup>2</sup> value of 0.992. The variables together explain 99.2% of total variation in overall performance.

Teaching standard	Preferred rank	Performance rank
Teaching	1	2
Learner & Learning environment	2	4
Curriculum & Planning	3	3
Professional development and responsibilities for the school and community	4	1

The results of the teaching standards were rank ordered according to expectations of the institutions against those displayed by the students during teaching practice. The results show that there is no congruency between students' acquisition of teaching standards and expectations of institutions. Only in one instance were there coincidence between expected standards gain and displayed gains, that is, in curriculum and planning.

supposed to be the first out the four, it is second, while professional growth was supposed to be the fourth is the first.

- Recommendation
- Institutions should realign their emphasis towards the development of excellent teaching skills in trainees.

**CONCLUSIONS**

- Students have a very good mastery of teaching standards as displayed during TP visits.
- The level of mastery of teaching standards is not influenced by gender. Male and female teachers operate equally the same.
- The level of mastery of teaching standards is not influenced by area of specialisation. Teachers across the curriculum spectrum perform equally the same.
- The level of teaching standards mastery is not consistent with the aspirations of training institutions. For instance, where teaching skills are

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