



## THE QUALITY OF TEACHING PRACTICE SUPERVISION AND ASSESSMENT OF SCIENCE STUDENT TEACHERS AT THE BINDURA UNIVERSITY OF SCIENCE EDUCATION (BUSE)

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**Abstract-** Teaching practice (TP) is one of the most important components of all teacher education programmes such that the supervision and assessment of student teachers during this period should not be left to chance. This study sought to explore how former student teachers (2006-2009) were supervised and assessed while on attachment at different schools where lecturers would contribute toward the success or failure of the whole exercise. The different purposively sampled participants (students and lecturers) enabled data triangulation to enhance its credibility, trustworthiness and dependability. Analysis of themes that were formed from coded data, collected through a self-administered questionnaire with open-ended questions, participant observation and in-depth interviews. The former student teachers viewed TP as a good and constructive learning enterprise. Lecturers used mitigating measures to assess students during this period of the near economic collapse in Zimbabwe, which were sometimes not favourable to student teachers. The quality of the graduate teacher could be enhanced through supervision of student teachers by subject specialists and prolonging the teaching practice duration. An investigation into mentors, students and lecturers' relationships could also be done in order to understand their perceptions with regards to their relationships and how this impacts on student teachers' learning experiences during TP.

**Keywords-** Quality Assurance, Teacher Education, Teaching Practice, Supervision and Assessment

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### Introduction

The teacher education degree programmes offered by the university under study enabled graduate teachers to teach Advanced Level ('A' Level) science classes because it offered Bachelor of Science Education Honours (BSc EdH) degrees for both pre-service (4 years) and in-service (3 years) teachers. The training of science teachers started in Cuba and it was meant to address the shortage of science teachers in Zimbabwean secondary schools. Full teacher training included taught courses in the science subject area(s) and the professional components (Foundations, Curriculum and Pedagogy including micro teaching), projects and TP. TP is the most crucial aspect of any teacher education programme since it cements the relationship between taught courses and the real school practice through real school environment experiences. However, courses in pedagogy were a pre-requisite for TP [1,2] in order to ensure that students were well equipped with appropriate skills to teach both theory and practical lessons.

Lecturers observe and advise students during TP in order to stimulate students' growth in teaching and to obtain an overview of a student's teaching. They should also spent time discussing with students, any matters pertaining to their experiences. These lecturers should submit reports on observations and impressions during

the TP sessions [2]. The student teacher shall be referred to as a student in this context. The final mark for TP/Applied Science Education (ASE) at the institution under study was obtained from the observation of student's performance in laboratory practical work, classroom as well as an assessment of the portfolio file with written reports compiled by the student and submitted at the end of the TP exercise [2]. Extreme cases of teaching performances (distinctions and failures) were verified through reassessment by external examiners specialized in the subject areas concerned. These were staff members mostly from an educational institution outside the concerned university or senior professional staff members of the Ministry of Education, or heads of Senior Secondary Schools or Colleges of Education.

Unfortunately, Zimbabwe underwent a difficult near economic collapse period from the early 2000s, which got to its peak between 2006 and 2009 such that all academic institutions almost ground to a halt including the university under study. This is because the government, that was the main source of finance for state universities like BUSE was also hard hit such that financing of these institutions became a major challenge. The day to day running of the university under study became more and more difficult as it was felt by the Education Department lecturers each time they went out for TP supervision and assessment exercises.

## Literature Review

University teacher education should be characterised by quality concerns and professionalism that can lead to excellence through training eminent teachers who have sound content and subject knowledge [3]. In that regard, the importance of QA cannot be over-emphasized since it plays an integral part in the general maintenance, improvement and harmonization of quality in university teacher education. Nevertheless, most literature consulted alluded to the fact that QA practices and procedures vary from one university to another and from one country to another [4-6]. This is the reason why several authors have come up with different definitions of QA but basically the definitions have some degrees of similarities. QA as a concept is defined from a synthesis of various views given by different authorities since its definition is almost as problematic and diverse as that of quality. In this paper, QA is the monitoring of academic set standards so that the quality of university teacher education is highly maintained resulting in the training of students who are fit for the purpose they are trained for.

QA has been defined as a programme for the systematic reviewing, monitoring, accurate collection and collation of data and evaluation of the various aspects of a project, service, education, or infrastructure to ensure that standards of quality are being met, maintained and enhanced [7]; CHEA [8]. In other instances, QA has been viewed as a planned and systematic review process of an institution or programme to determine whether or not acceptable standards of education, scholarship and infrastructure are being met, maintained and enhanced in order to ensure the provision of quality education in institutions of higher learning [6,9,10].

Collected data can then be analysed to identify areas of faults, leading to correcting issues before they become widespread. This ensures that quality standards and processes are adhered to and that the final product meets or exceeds the required technical and performance requirements [11]. A variety of controls to monitor, report and analyze problems can be put in place while being immediately followed by action to reduce or eliminate the identified problems. This can be done using internal mechanisms through which, institutions demonstrate to themselves and their clients the extent to which they and the programmes they offer meet their academic goals, objectives and outcomes Barnett [12]. Nevertheless, it remains a fact that QA in any university has the principal goal of safeguarding the achievement of academic set standards and guaranteeing all stakeholders (funders, institutions and the public) that it will uphold its promises of quality through sticking to standards. It is also apparent that all the definitions point at meeting set standards and making sure those problems are found and fixed wherever and whenever possible within these higher institutions of learning.

The QA theoretical framework used in this study is mainly based on Edward Deming (1990-1993)'s 4 stage Shewhart PDCA (Plan, Do, Check and Act) Cycle of monitoring quality. The cycle involves planning through the formulation of objectives and processes required to deliver the desired results (implementation plan). These are then implemented, monitored and evaluated through testing results against the predetermined objectives after which the necessary action is taken to improve and bring about change. In university teacher education, there is also need to assess and monitor (evaluation) students during TP so that some revisions can be done to correct any flaws as quickly as possible. This is done in order to assure quality teacher training through maintaining and improving the existing scenario resulting in long term growth and positive

change.

This study focused on QA in one of the most important components of university teacher training, TP called Applied Science Education (ASE) in the university under study. It is an exercise where students are placed in schools in order to gain real high school first-hand experiences through being exposed to opportunities which allow them to apply their theoretical knowledge in real classroom. Teacher education programmes are meant to mould professionals who are competent in knowledge, skills, personality and attitude of classroom practice mostly through one of the most fundamental aspects, TP. Therefore, guaranteeing the quality of such a school-based undertaking is pertinent and very powerful in shaping students. This is because TP goes a long way in determining the level of fitness the graduate teacher will have for the job he/she is trained to do. Therefore, the quality of students' supervision and assessment by lecturers needs to be closely monitored while the associated problems and challenges call for tacit approaches that do not eventually jeopardise and/or compromise the quality of students' real life teaching experience during TP.

Good quality TP integrates theoretical knowledge and professional practice across subject content and professional knowledge, pedagogical skills and insights, designed and executed in partnership with teacher education institutions (TEIs), school systems and the relevant professional bodies Eyers [13,14]. In that regard, TP is educative if it facilitates the understanding of the full scope of a teacher's role, develop capacity to learn and accomplish the central purpose of teaching. It can be achieved through giving students adequate school based practical experiences while they are attached to mentors (qualified and experienced teachers) who supervise and document their practicum-related achievements [13]. Mentors and lecturers (professional educators and subject specialists) from the institution where the students enrol for training jointly assist students through supervision and guidance in order to help them to develop professional knowledge and skills [15,16]. This is done through the supervision and assessment of students' performance during TP. Informed judgements on teaching effectiveness can best be made when both assessment and evaluation are conducted, using several techniques to get information from numerous perspectives on the different characteristics of teaching.

Some universities allocate 12 weeks Anikweze [17]. In other cases students' are supervised and assessed during three visits spread evenly through the period, the first one being in the first or second week of TP [17]; Nweke [16]. Money [16] suggested between 4 and 6 visits, including 2 visits from one supervisor. Olaiton & Oguiobo [16] recommended a minimum of 2 visits and re-education in both subject-matter and evolving methodologies, to keep abreast with science knowledge explosion.

According to Owie [16], supervisors need to concentrate on content expertise and detailed knowledge of the teaching practices and procedures. Nevertheless, the prevailing practice of cross-disciplinary supervision where in the majority of cases lecturers are assigned to students without considering their areas of specialization should be strongly discouraged while emphasis should be put on the possibility of supervision by appropriate subject specialists... [16]. In addition, lecturers should be well qualified professionals with the ability to work across both campus and school settings [13].

The educative value of the traditional approach to practicum assessment was questioned by some scholars who suggested that great emphasis should be put on the importance of the critical com-

ponent of any effective teacher education programme, that is, relevant practical experiences [18]; Segall [19]. The traditional practice of supervision, where the focus has been on socialization into a setting and the assessment of performance, is limiting to the future teacher's professional growth. Without the opportunity to challenge personal philosophies and existing practices, the potential result is a teacher who knows how to 'fit in' to existing contexts, but lacks the skills and confidence to make decisions that will make a difference [3]. Furthermore, the use of such methods of supervision and assessment leads to the awarding of marks without qualitative supervision of pre or post lesson observation discussions. Students then perceive it as a fault finding exercise yet it could be due to constraints such as increase in student numbers and insufficient time for the exercise [17]. Such an approach to practicum emphasizes technical knowledge and a small part of students' knowledge not sufficient to prepare them for the professional role.

In some cases, students' supervision by faculty staff is limited or non-existent due to factors often related to time and work commitments, the use of honorary supervisors or faculty academics prioritising research activities over field supervision [14,20]. In the same vein, some supervisors "see" 2 or 3 students within one lesson period of 40 minutes or less while some lecturers score them through lesson plans as they find no need to "see" them teach [16]. On the other hand Tadesse and Maeza [20] observed that Faculty of Education students are relatively less interested in learning more than passing examinations such that overrating of their performance may not be divorced from their desire to have high grades during TP yet they are not able to reflect on their strengths and weaknesses [17].

### Statement of the Problem

TP supervision and assessment continued to be done throughout Zimbabwe's poor economic performance years despite all the economic obstacles but lecturers constantly found means of minimizing and circumventing some of the problems. Although it is definite that the quality of the TP exercises were compromised, there is need to establish how, in which aspects and with what consequences even after applying measures to alleviate the problems. It is against this background that the researchers sought to scrutinize the process of TP supervision and assessment of former science student teachers who graduated between 2006 and 2009, during one of Zimbabwe's worst economic times. In addition, it also sought to find out and expose other aspects, if any, that may be perennially compromising the quality of student supervision and assessment during TP despite the country's relatively stable economic situation. The researchers also intended to identify the mitigating measures that were applied if any and the way forward in terms of improving the quality of TP at the institution under study after the devastating impact of the country's lowest poor economic performance on university education.

### Research Questions

1. How were students at BUSE supervised and assessed during the near economic collapse period between 2006 and 2009?
2. From the participants' points of view, what can be done to improve the quality of TP supervision and assessment at BUSE?

### Methodology

The Case study qualitative research design was used for this study of one of the state universities, BUSE since the intention was to get a deeper understanding of the real situation pertaining to the quality

of TP. Of the total population, 3 schools in Bindura Urban District and the other 3 in Harare were purposively and conveniently sampled because where students were regularly placed in large numbers for TP. Data credibility and trustworthiness was done through methodological and participant triangulation involving a 6 member students' focus group, participant observation done by the authors as part of the 13 lecturers in the Education Department. Questionnaires with both closed and open-ended items were administered to 70 former students and 13 lecturers. The initial proposed sample size was affected by the questionnaire return rate of 69% such that the final sample stood at 17% (70 students) where 53 (76%) were males and 17 (24%) were females. Nevertheless, the sample exceeded 10% of the population in question, which is again an acceptable level according to Gay [21]. Similar responses were identified to form clusters and categories of responses to form themes. Frequencies of different clusters and categories were used for interpreting and reporting findings.

## Results and Discussion

### The Supervision and Assessment Process of Students During TP

All the 70 students who responded to the questionnaire and the 6 members of the students' focus group said that they were satisfied with the lecturers' supervision and assessment instruments since they were both quantitative and qualitative in nature. One student thought that she was, *satisfied with supervision by lecturers. Lecturers' areas of emphasis are different hence the differences in the marks they award.* In the same vein, 62% of the lecturers expressed satisfaction on how students were assessed. Under the difficult economic circumstances the instrument that was used then enabled the lecturers to write comments in a detailed manner such that the student could read and benefit even without pre- and post-lesson discussions. The students would use the lecturers' constructive comments to improve on their weaknesses. This was also augmented by the instrument for documents that was formulated for lecturers to assess students' TP files (portfolio) containing documents like schemes of work and lesson plans. This concurs with SCTL [22], which calls for multiple ways of assessing students, in this case live lessons and documents.

Assessment of documents was mostly done if lecturers could not arrange an impromptu lesson during the difficult economic period. One lecturer said that asking students to teach an impromptu lesson has never been allowed. This was done especially when the lecturers got to a school and found out that the student(s) in question had taught all lessons but there was still time that they could prepare and teach a lesson. This was because lecturers feared that they would not be able to visit the schools again due to resources constraints. Nevertheless, 62% of the lecturers felt that impromptu lessons compromised the performance and assessment of the students as one of them pointed out that, *Obviously the student is not prepared. Whatever happens is in most cases plastic. Impromptu lesson preparation leads to impromptu teaching. Too many errors are likely to occur, disadvantaging the students simultaneously, both the student teacher and the pupils respectively.*

Students never realized that lecturers were trying their best under the economic difficulties to make sure that they got marks. In addition, lecturers had other pressing duties at the institution, hence the use of the traditional method. As noted by Akano & Nma [17], awarding of marks only without pre- or post-observation discussions



was then perceived as a fault finding exercise by students. In cases where some students were assessed teaching live lessons, lecturers would be present for the whole lesson, highlighted problems and solutions together with strengths leaving students satisfied as already noted above. Therefore, time permitting and foregoing other things, some lecturers would do the best that was expected of them as one of the students explained:

*"I was observed 3 times. The first was without a mark awarded but to be given good and constructive advice after lesson observation. The second was awarded a mark above 70% and further still recommendations and constructive criticism given... I felt the lessons were fairly judged as at all times the lecturer came before the lesson and we went together for the lesson. He/she would leave at the end of the lesson. We would then sit in the boardroom to discuss. All was well".*

In support of the above, one of the students said, *I was visited twice. The lecturers were both in for full sessions. Marks were awarded at the end of the lessons after some discussions.* This is in agreement with the suggestion that a supervisor should stay with the student till the end of the lesson to see through all the stages and later comment since the whole lesson is important [16]. The other one also said that:

*"I was assessed 3 times. At first I thought assessment was a fault finding mission. On the second assessment, I had learnt my weaknesses and made improvements and also realized the purpose of assessment so I had gathered my confidence and the same applied to the 3<sup>rd</sup> assessment. This made me grow in the profession."*

Supervision was almost always hurriedly done due to time constraints and in this regard one of the students said; *Lecturers who come for supervision seem not to be interested in helping students but simply rating them. It seems the main objective is to rate the performance of students.* 62% of the lecturers thought that it was not good to partially observe a lesson since one had to make a follow up of the whole lesson and award marks afterwards as one of the lecturers put it, *why should I assess a partial lesson? It is not fair for the student nor for the lecturer who might end up awarding false marks.* In the same vein [14,20] realized that inadequate and incomplete supervision occurs due to time and workload related factors. Due to the economic hardships inadequate resources also resulted in the awarding of marks for partially assessed lessons. Most supervisors did not spend much time with their students and they did not stay throughout the length of the lesson to enable objective supervision and assessment of the entire lesson in order to correct and guide the student stage by stage later on during post-lesson discussion. This is contrary to what they are always expected to do, that is, to sit through the lesson since it is planned in equally important stages, monitor improvements as suggested by other assessors, comment on low and high marks and follow up on poor performers.

Some lecturers did not do pre and post lesson discussions with students so that they could understand the rationale behind why they did certain things, which the lecturer could have thought they were wrong before awarding them the final mark. However, the poor economic performance highlighted earlier on prevented lecturers from doing such exercises as they had to visit more students per every trip they did outside the town where the university is situated. During the period of the poor economic performance, supervisions and assessments were inconsistent and haphazard varying in frequency from once for those far away and more than once for

those near the institution and those with failing marks. This is the reason why lecturers encouraged students to go to nearby schools especially in Bindura where it was cheap to go. This was one of the institution's mitigating measures against the difficult economic situation. That is why members of the students' focus group also praised the idea of not going far away from the institution for TP. In support of the above one of them said, *we were encouraged to go to local schools in Bindura for teaching practice but there were many students but vacancies were limited. Some of us, who failed to secure places early, would go for TP in September.* The same applied in the period of stay in the lesson with some lecturers staying for the whole period, did pre and post lesson discussion while some observed the beginning and some the end of a lesson. Inconsistencies in supervision resulted from the lecturers' efforts to supervise and assess students in the best way possible under the difficult economic circumstances.

If a lecturer got to a school late after the student had finished teaching, he/she would assess the individual's file instead of a live lesson. In some cases one of the assessments could be a TP file assessment and the other one a live lesson assessment. Some students simply had two such assessments without any classroom supervision and assessment and this concurs with earlier findings that some lecturers scored their students through their lesson plans realizing that there was no need to "see" them teach [16]. BUSE regulations clearly stipulate that of all the assessments, at least one should be of a live lesson. However, in this case, it was for a worthy cause taking into consideration the difficult economic times where it was better to have a file assessment if an impromptu lesson could not be arranged.

We noted as participant observers that the Education Department had a specialist for each science subject and they sometimes got overwhelmed where more students enrolled for particular science subjects than others. This important aspect was then disregarded since students were supervised by subject specialists and at times by anybody in the department. Because of lack of resources those who went to schools were supposed to see as many students as possible regardless of subject specialization. This contradicts Imogie [16] who emphasized that for a reliable evaluation, students should be supervised by subject specialists, who are, as Afolayan [16] would put it, continuously in the process of education and re-education in both subject-matter and evolving methodologies, to keep abreast science knowledge explosion.

Some lecturers in the Education Department argued that supervision and assessment of pedagogical skills was not much of a problem since every lecturer had the requisite professional qualification and experience in high school teaching. On the other hand, some confessed that they had challenges in supervising students in areas they did not specialize in. However, in a case where a lecturer supervised and assessed a student in a subject area where he/she was not a specialist the student would not lose much since most lecturers at this university had a science background. In that case a physics educator, for example, could comfortably observe students teaching chemistry. This is the reason why the department also recommended that at least the first visit should be done by a subject specialist so that he/she could prepare the student and guide him/her. It was also noted that in TP, a command of the subject matter is an essential pre-requisite of good teaching, just as knowing how to teach is an essential pre-requisite of becoming a good teacher [16].

One student who was found teaching said, *1<sup>st</sup> time I had a practical lesson but was not observed because lecturers wanted to observe me teach a theory lesson. 2<sup>nd</sup> time, I was assessed a content lesson. 3<sup>rd</sup> time, lecturers came and assessed the file only. It was sports day.* This concurs with Bakalo and Welfred [20] who realized that practical work hardly ever takes place since the teachers do not know how to carry out the practicals [20]. This study revealed that the problem emanated from lecturers who did not supervise practical lessons because of their perceived belief that practical lessons should have their own assessment tool. The live lesson instrument could be used to assess a practical lesson since the 2 types of lessons could be assessed with the same instrument. Secondly some were not subject specialists and would not feel comfortable to assess and award a mark for practical lessons.

Such a scenario would result in the training of graduate teachers who lacked the knowledge and confidence to teach and do practical work as alluded to by Arnett and Freeburg and MoE [20]. It is these students who are expected to mentor students trained after them when they graduate and start practicing. Therefore, without cultivating in them the requisite skills of doing and teaching science practical lessons, the problem of inability to undertake practicals become perennial. It also continues to be passed on from one generation to another. From this observation, practical lessons in science should be given a higher proportion of marks to demonstrate their significance. Since lecturers were aware of the need for at least one live lesson mark (regulation) versus the logistics involved in the TP exercise, they made an effort to organise and observe the impromptu lessons where they would ask a student to prepare and teach a lesson in liaison with other teachers. Such lessons were a way of circumventing the negative impacts of the poor economic performance of the country. On the other hand, students had no choice but to comply since they wanted a pass mark to enable them to complete their studies.

### Improvements Suggested by Participants

The need for more visits and contact was again supported by all stakeholders including lecturers (54%) because they felt that it could result in lecturers contributing more towards the success of students. All participants strongly felt the need to increase TP duration to create adequate time for supervision and assessment by visiting lecturers. This is because they thought that the time students spent in schools and the number of times lecturers visited them was not long enough to transform students into real and whole professionals. They suggested an increase in the number of visits to more than just once or twice through allocating more lecturers on supervision attachment sessions. One student said; *During attachment I was visited twice only but I think it was not enough. Maybe 4 to 5 times would be appropriate.* Nweke [16] recommendation of a minimum of three visits and Money [16] suggestion of a minimum of 4 and a maximum of 6 visits, including 2 visits from one supervisor concurs with the above views. However, this is in disagreement with Olaiton and Oguiobo [16] who opted for a minimum of 2 visits. In their study Tadesse and Maeza [20] revealed that insufficient time for TP was aggravated by lecturers' normal duties of teaching, marking and supervising students' research projects, contributing towards the inconsistencies that were observed earlier on in terms of number of visits and approaches used. One of the students said:

*"I don't think one term is sufficient for those pre-service teachers coming straight from 'A' Level. they need at least two semesters while one month is enough for in-service teachers since they are*

*already in the field. Pre-service teachers need much more time because it's their first time and they have a lot to learn before they are said to be ready for the profession."*

Without cooperation particularly from the bursary and the Director of Works Departments in the provision of resources like road worthy vehicles, increasing the TP duration on its own would not be enough, neither would it be effective. Inadequate allocation of resources further compromised the quality of students' experiences during TP but the problem was the prevailing economic situation which was very prohibitive. Working conditions for lecturers and the near economic collapse greatly negatively affected the worthwhile students' exercise leading to the general deprivation and short changing of, mostly, the students deployed further away from the institution. Mentors' marks were not considered in the final marks awarded for TP. It was suggested that their marks be part of the final TP mark as supported by the excerpt below:

*"During my Teaching Practice I was visited for assessment twice. The lecturers were present from the start of the lesson to the end. We held discussions at the end and the file assessed at that time too. However, I do not think it's enough to grade a student basing on those lesson observations and the file alone. The mentor should also have a say as he/she is with the student everyday of the teaching practice period. Also other activities the student is involved in should be taken into account."*

Tuli and File [13], with regards to the above, realized that mentor contribution to the final judgement of whether a student passes or not, through written reports that are considered by an institution, is part of quality practices in TP. Since developing a whole teacher involves many experiences students need to be involved and assessed partly by mentors in all school activities since they spend more time with them than the lecturers [15]. In Australia, mentor marks make part of the final TP mark because of the training they receive from the respective institutions to supervise and assess students in all aspects since they are the ones who spend more time with them [3]. Informed judgements on teaching effectiveness are reached when assessment and evaluation are done using numerous techniques to obtain information from different perspectives on different aspects of teaching [22]. Therefore, TP assessment could include marks awarded by sports directors, mentors and hostel superintendents (boarding schools) for extra-curricular activities like sport and clubs, hostel duties and daily school activities since it is meant to groom a whole professional teacher.

### Conclusions

The availability of knowledgeable professional supervisors (lecturers), encompassing quantitative and qualitative assessment instruments and conducive environment went a long way in minimizing assessment challenges related to TP. Students greatly appreciated the quality of the TP assessment instruments. On the whole, students gained from practicum experiences despite the associated challenges. The country's low economic performance led to inconsistent supervision and assessment of students regarding the number of visits and what was assessed. Lecturers who were not subject specialists compromised the quality of supervision and assessment. The short TP duration and lecturers' minimal contact time with students did not compromise the quantity and quality of knowledge, skills and experiences they were supposed to gain since experienced and qualified mentors together with the type of instruments used covered that gap.

### Recommendations

Three categories of marks (live theory or practical lesson, documents and combined mentor & coach's marks) could contribute towards the final ASE mark. At the same time, students could be supervised by professional subject specialists since they have both the pedagogical and content knowledge that enable them to carry out well informed and balanced supervision and assessment. The TP duration for pre-service students could be increased to more than one school term for reasons cited earlier on.

**Conflict of Interest :** None declared.

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