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Towards a sustainable technology-enhanced supervision and assessment of Teaching Practice: A pilot case of an e-Supervision model at a university in Zimbabwe

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ABSTRACT

Breakthroughs in technology-based assessments recorded in the last decades have given impetus to the integration of technology in teaching practice supervision. This paper describes an electronic supervision (e-TP) model developed for the teaching practice component of the science teacher training program by one university in Zimbabwe. It further sought to determine how school Heads, Deputy School Heads, Heads of Departments and school based mentors from 5 purposively sampled Bindura Urban district schools embraced the electronic student teacher supervision and assessment (e-TP) model introduced (as pilot) by one science teacher education university in Zimbabwe A qualitative case study research methodology was used to provide an understanding of the participants' experiences and acceptance of the e-TP process. Data were analyzed through thematic analysis procedures which helped identify common themes. Results of the study conclude that e-TP has great potential in improving student teacher supervision. It was observed that the university didn't do enough to disseminate and induct the schools on the implementation of the new model which on further exploration was the cause of the attitudes portrayed by the schools towards e-TP. It is recommended that the university should actively partner cooperating schools in the implementation of the innovation and offer training and support to both students and mentors regarding the acquisition and usage of the said technologies.

Keywords: *electronic teaching practice; e-Supervision; teaching practice; supervision and assessment; student mentoring; teacher education*

INTRODUCTION

A perusal of literature on supervision and assessment of student teachers on teaching practice (TP) unearths a diversity of models, plans and methods for carrying out the exercise. Amidst such diversity, it should be noted that there is one area of major agreement, that is, the importance of the TP exercise to the growth and development of the student teacher (Aglazor, 2017). To qualify to be a teacher, one must go through TP at a school that gives the student an opportunity to teach, under the close supervision and guidance of a mentor daily. The supervision, assessment, and guidance of the student teacher while on TP is a multi-sectoral task undertaken by various stakeholders to include the student's institution, the host schools' administrative staff, the mentor, the Head of Departments and School Heads, The teacher training institution provides the pedagogical content knowledge whilst a school is under obligation to provide a qualified, successful and experienced specialist teacher as a mentor to the student teacher.

Earlier studies indicate that e-learning has become one of the fastest growing trends in the educational uses of technology (Means et al., 2013) with breakthroughs in technology-based assessments being recorded in the last decades (Burns, 2011). Notwithstanding the rapid progress

noted in those earlier studies, there has been very little progress in the integration of technology in teaching practice (TP) supervision hence the growing calls to enrich the supervision of student teachers during their TP with technology (Kopcha and Alger, 2014; Durak, 2021).

Although criticized by some of the early researchers (McGrath, 1995; Haworth and Parker, 1995 in Howard and McGrath,1995), the benefits of teaching practice through distance education and e-supervision have been pointed out by others (Hammond, 2005; Dymond, et al., 2008).

Proponents of e-supervision have been galvanized by findings such as those by Dymond, et al, (2008) that there was no statistically significant difference between remote supervision and the traditional face-to-face model on the performance scores of student teachers. Additional positive attributes included the ability to supervise and provide quality feedback at appropriate times (Burrack, 2008), increase frequency and efficiency of supervision (Ludlow et al., 2007) as well as being cost effective over time and distance (Schmidt, et al., 2015; Gruenhagen, et al., 1999).

Experiences with technological tools in technology-enhanced TP may have far reaching implications for the trainee teacher. Batane and Ngwako,(2017) noted that it not only encouraged student teachers to integrate technology in their teaching practices, but also changed their perceptions and attitudes towards technology use even after graduation and into their teaching careers.

While there are many advantages to using various forms of technology in student teacher supervision, there are also some serious concerns that must be addressed. Hawkins, et al., (2012), identified some of the major hurdles facing e-supervision of TP including the cost and availability of appropriate and reliable gadgets, Internet connectivity and the sense of student-lecturer disconnection due to numerous physical, social and emotional barriers. Earlier, Lombardi (2001) allayed the technological concerns by asserting that the available technology should be sufficient to provide effective supervision of student teachers in distant locations. What is required is minimal preparation and prior training for and orientation to the use of the intended technologies for supervising the student teachers. With this pre-training, students, school-based mentors and university supervisors should be able to use technology in the supervisory process.

In the present model students were encouraged to use smartphones and other handheld cameras at their disposal to record themselves whilst teaching then remit these via email to the university for asynchronous assessments before feedback is relayed back using the same route. In a related case, since the tradition of field-based face to face TP supervision has been firmly established, it becomes difficult for schools to see the value of technology-based assessments as viable alternatives and therefore tend to perceive these experiences as being not real enough and artificial (Ronchetti and Lattisi, 2020).

Rhine and Bryant (2007) identified several concerns that need to be attended to when implementing a technology-enhanced experience, including the availability of necessary technology tools, the diverse range of technical skills, and the comfort levels in the use of the gadgets among the student teachers in their study. The authors felt that when concerns surrounding the use of technological tools are not properly addressed, they have the potential to taint the student teachers' and school based supervisors' attitudes towards the innovation. Later, Batane and Ngwako, (2017) reported on a case study where most of the student teachers encountered technical problems with the quality of audio and video technology used. It is thus noted that technical problems may negatively affect perceptions about technology-integrated TP experiences.

Although most TP programs rely on the school-university support partnerships, many of them have been plagued by problems related to the organization and monitoring of the exercise. One area of concern is the failure to establish an open relationship between schoolteachers (practitioners) and

university supervisors (academics) where most of the school-based teacher educators, who are regarded as key figures that play a prominent role in teacher preparation, are not usually provided with the necessary orientation and support they need in guiding the student teachers (Valencia, et al, 2009). It is through establishing such a relationship that the schoolteacher can be effective in assisting the student teacher to link theory to practice.

The Case

At the height of a Virtual and Open Distance Learning (VODL) science teacher training programme carried out by one university in Zimbabwe, with centres in Matabeleland North and South, Mashonaland Central and in Manicaland, the number of students on Teaching Practice (TP) at any given time surpassed 500. In 2014 there were 551students, 503 in 2015 and in 2017 there were 336 students. During this period, due to transport and staff shortages, some students went through their TP with fewer supervision and assessment sessions than the University's guidelines. This scenario, if it were allowed to continue, threatened the existence of the programme, the institution's integrity, the international validity, and acceptance of the University's qualifications, amongst a host of other problems. The nature of the VODL programme meant that most of the students on this mode were in the remote districts of the country. The university took on a social responsibility driven and deliberate stance to encourage them to go on TP in their provinces of choice, to include the remote schools where there is generally more need for trained science teachers (Gruenhagen, et al, 1999). Teaching Practice at this university, therefore, became a nation-wide endeavour.

Justification for an e-Supervision model

The high cost of financing the teaching practice phase in remote, rural schools nationwide, the human resource outlay, time and travel associated with the traditional models of field-based teaching supervision have made TP one of the most expensive aspects of the teacher education programme. This challenge has tempted some teacher education institutions to sacrifice quality student preparation in favour of cost cutting mechanisms. In Zimbabwe, one teacher training institution had one of its programmes suspended temporarily by the country's education standards control body, the Zimbabwe Council for Higher Education (ZIMCHE) for lack of supportive materials, and inadequate supervision of student teachers on teaching practice (Mubika &Muyengwa, 2013). With such a precedence, laxity in students' teaching practice supervision was not acceptable. In fact, this compelled the institution to look at the feasibility of trying out new but efficient models of TP assessment to replace the conventional university lecturer supervisor model.

The starting point was to reconsider the role of the university supervisor as the main actor in TP supervision, that is, to analyse whether that role was still justifiable and sustainable within the modern technological world. The debates centred on whether the university supervisor role could be maintained or at least be limited to being a moderator and consultant? The following were the compelling arguments:

a) Is the university supervisor role so indispensable to an extent that no one else can replace it and secondly, is it worth the expenditure accorded to it?
b) Student teacher supervision is time consuming and not particularly rewarding financially for the university supervisor who could spend a week on average per trip. Is teaching practice supervision therefore an efficient use of the university supervisors' time seeing that the university supervision team includes senior lecturers, doctors, and professors? One argument made was that this time could be put to better use elsewhere other than on prolonged TP deployment with the associated potential hazards of travel to remote sites (Gruenhagen, et al., 1999).

c) Given the technological advancements and the encouragement to embrace it, why not pilot an electronic version of teaching practice supervision (e-TP) to replace the conventional manual, school by school visits?
d) The rise in importance of online learning requirements as ushered in by the COVID 19 pandemic, meant that this was an opportune time to try out alternative e-learning assessment strategies. The success of e-TP would result in a reduction of the physical presence of lecturer visits to schools.

After intensive brainstorming on these points and to strike a balance between quality student preparation and the sustainability of the science teacher education program, a new technology based supervision model, e-TP was developed and adopted.

The e-TP Protocol

Major features of this innovative project are:

i. Visits to the schools by the university lecturers for the purposes of supervision and assessment of student teachers would be minimal. The lecturers could only go to resolve problems the students faced or attend to any disciplinary issues involving the trainee teachers.
ii. A pre-practicum course on the development of the teaching documents and video taking sessions whilst on peer teaching at the university would be undertaken and students should pass this preparatory course before going on TP.
iii. At the beginning of the practicum, a TP student handbook was provided for the trainee teachers and the school based mentors. For the student teacher, its purpose was to assist them gain confidence and provide a guide on the requirements needed as they embark on their journey as professional teachers. Samples of lesson plans, supervision and assessment templates and other professional documents were included. To the school based mentors, the handbook assisted them on how to nurture the student teachers in their day to day professional growth as well as provided student teacher observation checklists and other relevant information on how to supervise and assess student teachers' work.
iv. Whilst on TP, the student teachers would produce Schemes of work and Daily Lesson Plans (DLPs) of the lessons that they teach. They would be required to do video recorded teaching, using available gadgets. School based mentors, Heads of Departments (HODs), and School Heads or their deputies would supervise these students on a regular basis and complete university generated supervision forms.
v. Once every month/three times a term the students electronically send the dossier comprised of the relevant Schemes of work, DLPs and the supervision forms completed by the school based mentors, HODs and School Heads or their deputies to the university for assessment and feedback.
vi. A Teaching Practice Coordinator based at the university would check on students' assessment progress as well as inter alia, liaising with the schools. As a form of support, a dedicated TP email and WhatsApp discussion forums were provided. On these platforms trainee teachers ask any questions or present any problems they encounter during the Teaching Practice process. The Teaching Practice coordinator and a few supervisors offer support and responses to the student teachers' questions. The TP coordinator would also make follow ups on all gaps in student assessment and process students' results.

Figure 1 below summarises the e-TP phases.

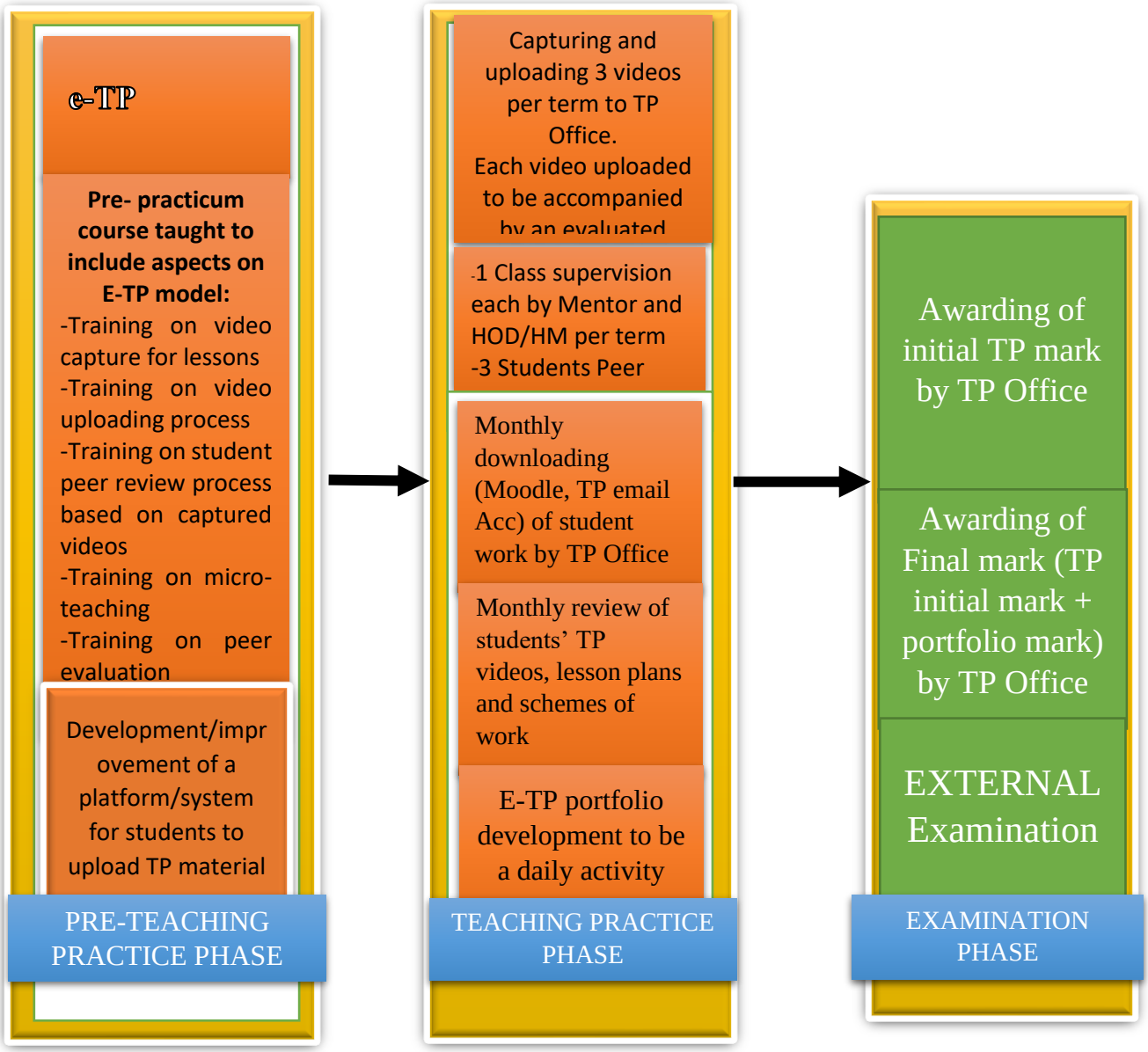

Figure 1: The E-Teaching Practice Protocol

Justification for the Study

Considering that this is a novel innovation in TP supervision in the Zimbabwe teacher education landscape, it is the acceptance of this mode by the education stakeholders in general and by schools in particular that teachers graduating from this institution will be positively received. Research on change points out that individuals going through any sort of innovation, approach the change process with some skepticism and hesitance, which has also held true for schools and teachers (Rogers (1995). It is for this reason that this article describes the characteristics of an electronic supervision (e-TP) model developed for the teaching practice component of the science teacher training program by one university in Zimbabwe. Furthermore, the perspectives of school

mentors, Heads of Department, School Heads and Deputy Heads on the implementation of the e-TP model as adopted by the university were sought.

METHODOLOGY

The participants for this case study consisted of a purposive, convenience sample of twenty one school-based supervisors, comprising of two Heads, three Deputy Heads, five HODs and eleven mentors at schools in Bindura Urban where the university's student teachers were attached for their one year long TP exercise. Schools in Bindura Urban were chosen because of their proximity to the teacher training institution and these schools had hosted student teachers from the institution year in and year out, which placed then in the best position to serve as case studies for studying transitions in supervision and assessment models. The same schools were currently mentoring the pioneering group of students on whom e-TP practices were to be implemented.

The school based supervisors' perceptions of the e-supervision experiences (observations and feedback) with the student teachers was the focus of this study, therefore a qualitative case study research methodology was used to provide an understanding of their experiences and allow an intensive description and analysis of the e-TP process (Johnson and Christensen, 2017). The benefits and challenges of the novel process to supervision from the schools' perspectives were also investigated. After securing appointments through calling the chosen participants at the five selected schools, in-depth semi-structured interviews were carried out separately with the school Heads, the Deputy Heads, HODs as well as the mentors under whose guidance the student teachers worked.

While ensuring that the procedures used to collect interview data were ethical, aspects related to informed consent, privacy and confidentiality were also actioned. As a consequence, some participants expressed that they were not comfortable in having their contributions recorded. This could be attributed to fear of possible reprisals in line with standing regulations with their employer, the government. The researchers then resorted to taking extensive and detailed notes as they conducted the interviews. Qualitative data were classified, categorized and analyzed through thematic analysis procedures (Guest, MacQueen, & Namey, 2012; Schreier, 2012) which helped identify emergent common themes from the participants.

RESULTS AND DISCUSSION

The major themes that emerged from the interview data were the schools' concern with the insufficient pre-planning on the implementation of the model, the seemingly broken communication links in the university-school relationship, the disruptive effect of recording videos during teaching, the perceived increase in workload to the host schools and the perceptions on the efficacy of the model. On further exploration these were some of the causes of the attitudes portrayed towards the e-TP strategy.

The findings under each of the themes are presented in Table 1 below.

Table 1: *Schools administrators' perceptions on the e-TP supervision model*

Perceptions on	YES		UNDECIDED		NO	
	Frequency (n)	(%)	Frequency (n)	(%)	Frequency (n)	(%)
Adequacy of pre-implementation preparations	1	6	3	14	17	80
Brocken communication in the relay of supervision and assessment feedback.	11	52	4	15	7	33
Disruptive effect of class recording	20	95.24	0	0	1	4.76
Increase in workload for schools	21	100	0	0	0	0
Appropriateness/efficacy in TP supervision/assessment.	10	47.61	3	14.28	8	38.11

Insufficient pre-planning on the e-TP implementation process

Teacher training institutions need the support of the school based supervisors as it is they who work daily with the student teachers giving them the necessary skills and experience so that they become effective professionals. It is therefore these institutions' prerogative to ensure that school based mentors are properly trained, supported and are aware of what the university expects of them. On this issue, schools felt that there was a missing link between the schools and the university with regard to the implementation of the e-supervision model. A majority (n=17), eighty percent of the school practitioners, lamented the seemingly indifferent approach of the university towards actively engaging the schools about the change in teaching practice supervision strategies. According to them, the university didn't do much to disseminate, appraise and induct the schools on the implementation of the new model, instead the student teachers relayed this new thrust to the respective schools.

Even though the university produced a Teaching Practice Handbook for distribution to the schools, the schools felt that this was not enough. At all the schools, the response was unanimous that they did not have prior understanding of the innovation and were caught unprepared for it. This prompted one mentor to note:

> *"…we are supposed to be the supervisors, and the university must talk to us. We don't expect to be told what to do by the student teachers" [Mentor 02].*

Furthermore, all the schools in the research had at given instances, hosted students from several teacher training institutions from across the country and all these still use the traditional college supervisor model which the schools are familiar with. Regardless, these same colleges find it prudent to hold refresher workshops on their expectations with the schools before every deployment. One of the school heads noted in response:

> *"… why not this local university?"*

This was echoed at all the schools in the study.

Broken communication in the relay of supervision and assessment feedback

After receiving the student teachers' work, the e-TP Coordinator and a group of chosen faculty lecturers assess the students' videos and relays the suggestions made to the students via email. The students are not obliged to share the university supervisors' feedback with their mentors. This, according to the schools creates a void as the mentors who work with the students daily need to access this information to assist the students with understanding of the shared documents. On this relationship, one mentor noted:

> *"…As the students' mentor, I also want to see the feedback from the university as it directly shows how I am doing as a mentor. The university must make an effort to get the same feedback to the schools" [Mentor 07].*

Most of the mentors, fifty-two percent (n= 11) opined that they needed to see the quality of feedback their mentees received from the university based lecturers, fifteen percent (n=4) were indifferent, and thirty-three percent (n=7) thought that it was not necessary to see the university lecturers' feedback. This would be necessary as earlier studies indicated a large difference between the marks assigned by the university lecturers and those produced by school based supervisors (Nyaumwe and Mavhunga, 2005). There is no better way to narrow this gap than by letting both parties have access to each other's feedback on assessments.

The disruptive effect of recording videos during teaching and learning

Witthaus and Robinson (2015) found that school based supervisors expressed fears about the nature of cameras, which they described as "intrusive". In this study an overwhelming majority of ninety-five percent (n=20) of the participants complained of the intrusive effect that recording of class proceedings have on classroom management. Such recordings, they said, have the potential to alter the behaviours of both the students and the teacher. This should be understood in the context that the Zimbabwean schools' regulatory and political framework is like a minefield with many dos and don'ts. Some of the policies governing schools and teachers' conduct are verbal but equally powerful and this tended to make schools hesitant to allow student teachers to record videos for assessment. Schools were thus apprehensive of the use of recording devices in the classroom without prior consultation from relevant educational and at times political authorities. Comments from school administrators related to recording of classes included:

> *"…the university made it difficult for us as Heads to decide on the taking of videos (sic) without consulting our superiors first. The education sector is strictly regulated and coming without letters of approval to record videos in schools was not the proper thing that the university made" [Head 03].*

> *" ...as mentors, we could see that pupils were visibly uneasy to have someone take videos in class as this was very new to them. This was evident especially during the first days". [Mentor 06].*

Despite these views one school head thought that classroom recording may be used by teachers to go over their work and reflect on the ways they use to teach.

Perceived increase in workload for the school based supervisors

The introduction of the e-Supervision model by the university coincided with a period of national economic crisis and hyperinflation as well as low teacher motivation and incapacitation in the education sector (MoPSE, 2020).

This seemed to have cast some collateral damage to the innovation, noted as follows:

> *"…. schools and the disgruntled teachers feel that they are being overloaded unnecessarily. The teachers feel that the university was leaving all its work to schools, abrogating its responsibility of supervising student teachers who paid the university an industrial attachment fee and whose own lecturers were better remunerated". [Head 01].*

> *"…it is known that teachers are paid peanuts and then the university wants us to do their work for free. They must pay us for doing that work" [Mentor 05}.*

Such sentiments came out very strongly from all the school based mentors in the study. The mentors also expressed their desire to be given incentives in the form of allowances for the services they offer on behalf of the university as is the practice in some countries (European Commission/EACEA/Eurydice, 2021).

Perceptions on the efficacy of the e-TP practices

Although all the schools felt that the e-supervision process offers a lot of potential for student assessment, forty-eight percent (n=10) approved the use of the eTp model in its current state, thirty-eight percent (n=8) expressed outright rejection of the adoption of e-Supervision in student teacher assessment whilst the remaining fourteen percent (n=3) were skeptical and undecided on how to proceed with the use of the technology. Suffice to mention that even for the forty-eight percent who gave the innovation a thumbs up, they cautioned that an overnight transition from the traditional face-to-face supervision will be problematic in the short term. For them, a hybrid type of supervision complemented by physical visits would produce better results as:

> *"...the videos can be stage-managed and require authentication from physical visits" by university lecturers. [Mentor 09].*

The general understanding is that whilst schools have always been the ones providing frequent and useful feedback during the TP experiences, the possibility of imminent visits by college based assessors helps keep the student teacher on his/her toes ,well disciplined and focused. The total absence of the university assessor in the equation breeds the temptation for laxity on the student teachers especially when as noted in an earlier study, school based mentors generally inflated scores for student teachers with whom they had grown a bond over the TP period (Nyaumwe & Mavhunga, 2005). On the other hand, if passing the TP course was wholly thrust in the hands of the school based mentor, it was noted that this could open avenues for student teacher abuse by some unscrupulous mentors (Mubika and Muyengwa, 2013).

CONCLUSIONS AND RECOMMENDATIONS

While expressing views that there is much room for improvement on the current implementation of the e-Supervision strategy, many schools in the study have optimistic views about its vast potential to positively impact TP experiences for the student teachers, schools and teacher training institutions.

However, in the Zimbabwean context, certain things must be taken note of. This includes the provision of technical requirements like e-Supervision Technology Kits (Paulsen et al., 2017), improvement in Internet connectivity across schools to include those in rural areas and more importantly bringing changes in the attitude of students and teachers towards this innovation.

Teacher education institutions are required to actively partner cooperating schools in the dissemination and subsequent implementation of these new technologies as well as offer training

and support to both students and mentors regarding the usage of the introduced technologies. More effort should be channeled towards developing a system that allows continuous online interaction with the student teachers to include assisting them even with their lesson plans before they are applied in the classroom, that is, the university supervisors would get in touch with the student teacher throughout the teaching practice process. The aim would be to increase the amount of collaboration between the university supervisors, schools and the student teachers as well as assist the student teacher to grow professionally.

Chief among the benefits is the real possibility that practicing student teachers are placed in remote rural schools with ensuing benefits to all the protagonists (Ritimoni, 2018). Teacher training institutions can fulfil their mission of service to the needy, remote rural schools. University supervisors will expend their time effectively and more efficiently on activities such as professional reading and research, instead of being exposed to risks associated with travelling to and from remote schools. Furthermore, as noted in an earlier study (Mhishi, et al., 2012) the student teacher has the option to remain in their home communities to complete their teaching practice and, thus, are more likely to seek employment in rural school settings thereby enhancing the development of such communities.

The study also realised that e-supervision and assessment of TP has a significant role to play in the future, but its introduction needs to be gradual with proper dissemination and training provided for the students and the cooperating schools.

REFERENCES

Aglazor,G. (2017). 'The Role of Teaching Practice in Teacher Education Programmes: Designing Framework for Best Practice'. *Global Journal of Educational Research*. vol 16: pp.101-110

Batane, T. and Ngwako, A. (2017). 'Technology Use By Pre-Service Teachers During Teaching Practice: Are New Teachers Embracing Technology Right Away In Their First Teaching Experience?' *Australasian Journal of Educational Technology,* vol. 33, no. 1, pp. 48-61. https://doi.org/10.14742/ajet.2299

Burns, A. and Richards, J.C., (2009). Second Language Teacher Education. CUP.

Burns, M. (2011) Distance Education for Teacher Training: Modes, Models, and Methods. Education Development Centre Inc., Washington, DC.

Burrack, F. (2008). Using video conference technology to enhance supervision of student teachers. Academic Intersections. No. 2. http://edcommunity.apple.com/ali/collection.php?collection=2749

Dymond, S. K.,Renzaglia, A., Halle, J. W., Chadsey, J. and Bentz, J. L. (2008) . 'An Evaluation of Videoconferencing as a Supportive Technology for Practicum Supervision'. *Teacher Education and Special Education***,** vol. 31, no. 4, pp.243-256.

Durak, H. (2021). 'Preparing pre-service teachers to integrate teaching technologies into their classrooms: Examining the effects of teaching environments based on open-ended, hands-on and authentic tasks'. *Education and Information Technologies* vol. 26, pp. 5365–5387. https://doi.org/10.1007/s10639-021-10511-5.

European Commission/EACEA/Eurydice, (2021). Teachers' and School Heads' Salaries and Allowances in Europe – 2019/20. Eurydice Facts and Figures. Luxembourg: Publications Office of the European Union.

Gruenhagen, K., Mccracken, T., and True, J. (1999). 'Using Distance Education Technologies for the Supervision of Student Teachers in Remote Rural Schools'. *Rural Special Education Quarterly*, vol. 18, no. 3-4, pp. 58–65.

Guest, G.; MacQueen K. and Namey,E. (2012). *Introduction to Applied Thematic Analysis.* Thousand Oaks, CA. Sage

Hammond, L.D. (2005). Constructing 21st-Century Teacher Education. *Journal of Teacher Education* 57(3):300-314. DOI: 10.1177/0022487105285962

Hawkins, A., Graham,C.R. and Barbour, M.K. (2012). 'Everybody is their own island: Teacher disconnection in a Virtual school'. *International Review of Research in Open and Distance Learning.* vol. 13, no. 2, pp.123-144.

Haworth T. and Parker, R. (1995). 'The Contribution of a Face-to-Face Component in Initial Teacher Training at a Distance'. In: Howard, R. and McGrath, I. (Eds.). Distance Education for Language Teachers: A UK Perspective. Philadelphia. Multilingual Matters, Limited. pp 78-94.

Johnson, R.B. and Christensen, L. (2017). *Educational Research: Quantitative, Qualitative, and Mixed Approaches.* Sixth Edition. Thousand Oaks. California: SAGE Publications.

Kecik, I., (2011) 'Achieving the Impossible? Teaching Practice component of a Pre-service Distance English Language Teacher Training Program in Turkey'. *Australian Journal of Teacher Education*: vol. 36, no. 4, Article 5. pp. 73-83

Kopcha, T. J., and Alger, C. (2014). 'Student teacher communication and performance during a clinical experience supported by a technology-enhanced cognitive apprenticeship'. *Computers & Education*, vol. 72, no. 1, pp. 48-58.

Lombardi, J. (2001) 'Supervision of student teachers: emerging models and innovative approaches in the USA'. *Teacher Development,* vol. 5, no. 3, pp. 309-322.

Ludlow, B. L., Keramidas, C. G., and Landers, E. J. (2007). 'Project STARS: Using Desktop Conferencing To Prepare Autism Specialists At A Distance'. *Rural Special Education Quarterly*, vol. 26, no. 4, pp. 27-35.

McGrath, I. (1995). 'Pre-Service Training for Language Teachers: Face to Face or at a Distance?' In: Howard, R. and McGrath, I. (Eds.). Distance Education for Language Teachers: A UK Perspective. Philadelphia. Multilingual Matters, Limited. pp 66-77.

Means, B., Toyama, Y., Murphy, R. and Baki, M. (2013), 'The effectiveness of online and blended learning: a meta-analysis of the empirical literature'. *Teachers College Record*, vol. 115, no. 3, pp. 1-47.

Mhishi M.; Bhukuvhani C. and Sana A. F. (2012): 'Science teacher training programme in rural schools: An ODL Lesson from Zimbabwe'. *The International Review of Research in Open and Distance Learning.* vol.13, no. 1, pp. 72-86.

MOPSE, (2020). Zimbabwe COVID-19 Preparedness and Response Strategy. Zimbabwe Education Cluster. May 2020 Report. MoPSE. www.humanitarianresponce.info/en/operations/zimbabwe/education. Accessed 26/06/2020.

Mubika A.K and Muyengwa. B. (2013) 'Search for Quality assessment in Open and Distance Learning at Undergraduate Level Teaching Practice at the Zimbabwe Open University'. *Greener Journal of Educational Research.* vol. 3, no. 3, pp. 115-122.

Nyaumwe, L.J. and Mavhunga, F.Z. (2005). 'Why do mentors and lecturers assess Mathematics and Science student teachers on Teaching Practice differently?' *African Journal of Research in Mathematics, Science and Technology Education*. vol. 9, no. 2, pp. 135-146.

Paulsen, T.H. and Schmidt-Crawford, D.A.(2017) 'Enhancing Student Teacher Supervision Through Hybridization: Adding e-Supervision to the Mix'. *Journal of Agricultural Education*, vol. 58, no. 2, pp.166-179*. https://doi.org/10.5032/jae.2017.02166*

Rhine, S., & Bryant, J. (2007). 'Enhancing Pre-Service Teachers' Reflective Practice With Digital Video-Based Dialogue'. *Reflective Practice*, vol. 8, no. 3, pp.345–358.

Ritimoni, B. (2018), 'Transforming And Empowering Higher Education Through Open And Distance Learning In India'. *Asian Association of Open Universities Journal*, vol. 13, no. 1, pp. 24-36.

Rogers, E. (1995). Diffusions of Innovations (4th Ed).New York, N.Y: Free Press.

Ronchetti and Lattisi (2020). 'Grab that Screen! Architecture of a System that Changes the Lecture Recording and the Note Taking Processes'. In: Gennari R. et al. (Eds.) Methodologies and Intelligent Systems for Technology Enhanced Learning, 9th International Conference. MIS4TEL 2019. Advances in Intelligent Systems and Computing, vol. 1007, pp. 113-120.

Schmidt, M., Gage, A. M., Gage, N., Cox, P., and McLeskey, J. (2015). 'Bringing The Field To The Supervisor: Innovation In Distance Supervision For Field-Based Experiences Using Mobile Technologies'. *Rural Special Education Quarterly*, vol. 34, no. 1, pp. 37-43

Schreier, M. (2012). *Qualitative content analysis in practice*. Thousand Oaks, CA: Sage

Valencia, S., Martin, S., Place, N. and Grossman, P. (2009). 'Complex Interactions In Student Teaching: Lost Opportunities For Learning'. *Journal of Teacher Education*, vol. 60, no. 3, pp. 304-322.

Witthaus, G.R. and Robinson, C.L. (2015). Lecture capture literature review: A review of the literature from 2012-2015.: Centre for Academic Practice, Loughborough University. Loughborough