JRIIE Journal of Research Innovation and Implications in Education
Center for Research Implications & Practice

Website:www.jriiejournal.com ISSN 2520-7504 (Online) Vol.8, Iss.3, 2024 (pp. 279 - 293)

Re-visiting Teaching Practice Assessment in Teacher Education: Towards Quality Education for Sustainable Development

[1]Winniefridah Matsa &[2]Plaxedes Chikunda
[1]Midlands State University, Zimbabwe
[2]Great Zimbabwe University
Email: winniematsa@gmail.com/matsaw@staff.msu.ac.zw

Abstract: *To attain quality education, teacher education has to undergo transformational teacher practices commensurate with the new trends in education. This paper seeks to assess whether the current teaching practice models and assessment instruments achieved desired skills that are in line with global and national priorities of Competency Based Education, Education for Sustainable Development and 21st century skills for Quality Education. The research design employs a qualitative case study, focusing on two university institutions in Zimbabwe that were purposively sampled. The total sample was 20 with 5 chairpersons coming from applied teaching departments of the two from universities, 3 teaching practice programme co-coordinators and 12 lecturers randomly selected from applied education departments which assess students on teaching practice. The instruments utilized were interview schedules for teaching practice programme coordinators and chairpersons, a questionnaire for lecturers and an analysis of teaching practice policy documents along with teaching practice assessment instruments. The results revealed that teaching practice policy documents and assessment instruments remained misaligned with global and national priorities of competence based education, education for sustainable development and 21st century competences. The respondents confirmed that the current teaching practice assessments failed to provide the aspiring teacher and their learners with lifelong skills and context-specific heritage-based abilities. TP has remained traditional confining student teachers and their learners to the classroom. The TP assessment instruments tested classroom instruction prowess. The study recommends a re-visit to traditional models of teaching practice assessment in-order to transform them to address the 21st century challenges by equipping teacher educators, student-teachers and learners with sustainable life skills for present and future use.*

Keywords: Teaching practice, quality education, competency-based education, education for sustainable development, transformative learning

How to cite this work (APA):

Matsa, W. & Chikunda, P. (2024). Re-visiting teaching practice assessment in teacher education: Towards quality education for sustainable development. *Journal of Research Innovation and Implications in Education, 8*(3), 279 – 293. **https://doi.org/10.59765/sipiw4956.**

1. Introduction

Teaching Practice (TP) is one of the four fundamental components in teacher preparation among academic study of theory of education and professional studies (Kangai and Mamvuto, 2011). TP is defined by Kangai and Mamvuto (2011) as an integral part of learning where student teachers blend theory and practice in real classroom setting to assess their content, pedagogy and professional skills under the guidance of a supervisor and a mentor. Currently, it shapes the teacher's content knowledge, pedagogics and professional behaviour through application in a real life classroom setting. TP is also meant to enable student teacher self-assessment in addition to being evaluated by a supervisor and mentors

(Serdenciuc, 2013). In teaching practice, assessment of students' trainees is one of the indispensable components of teacher training. It is an integral part of instruction to evaluate whether goals, objectives or standards of lessons are met and whether the teacher has effective pedagogical skills for Quality Education (QE) (Marume, 2016). Recently, the skills should extend lifelong skills from the classroom in order to address the challenges of the 21st century beyond an academic setting.

Ogegbo &Adewusi (2020) echoed that there is compelling shift in the skills and competencies learners need in-order to flourish globally in the job markets and to adapt to the changing world. The skills needed in the world have evolved yet there remains a disparity between skills learnt in the classroom and those required to function in the workplace. The new skills empower students to engage constructively and responsibly in today's world, participating actively and making necessary transformations (Gonzalez, 2020). As a result, the new Zimbabwe Education Curriculum 2018 has seen a shift towards 5.0 innovation and industrialization and Competency Based Education (CBE) at the same time recognizing Sustainable Development Goals (SDGs), in particular Sustainable Development Goal (SDG 4) on QE. It is SDG4 that should provide such kind of education for future generations (Gonzalez, 2020).

QE plays a vital role in enhancing people's lives and in the attainment of Sustainable Development (SD) according to the agenda 2030 (UN, 2022). Education that addresses SDGS through imparting 21st century competences of creativity, innovation, critical thinking, problem solving and collaborative skills, among others to eradicate poverty (goal 1), achieve zero hunger (goal 2), health and wellbeing (goal 3) as well as eradicate inequality (goal 5 and 10) is the prime interest. It is also to achieve clean water and sanitation (goal 6), decent work and economic growth among other goals (FAO, 2022). Re-orienting the education curriculum towards sustainability allows global issues such as climate change, health, poverty, gender equality, justice and citizenship through Education for Sustainable Development (ESD) to be integrated into higher education curriculum.

David Orr (1991) in UN (2022), describes ESD and quality education as a triple threat where knowledge, competencies and values are given empowering students to effectively and responsibly use this knowledge rather than just mastering the subject. Additionally, it equips students with skills and character. UNESCO (2018) refers to this kind of education as transformational education that addresses learned content, outcomes and the environment (Eco-skills). UNESCO (2005) colluded that this education focuses on the context, pedagogy, global issues and local priorities. Ryan &Tillbury (2013) further describes it as an inclusive contextual education that uses applied and future oriented (lifelong) knowledge. Consequently, teaching strategies and practices, including teaching practice assessment, need to be reoriented to achieve SDGS (Lovren, 2019).

In 2020, following the Covid-19 disruptions, the global education coalition was launched. The main thrust was to mobilize country's resources and implement innovative, context-appropriate and equitable solutions linked to goal 4 (quality education) promoting life-long learning opportunities for all. In all Zimbabwean Universities, the curriculum content has been reviewed to align with the above. However, there has not been review of teaching practice, especially assessment tools for students in training to align with 5.O, CBE and ESD for the acquisition of the 21st century skills needed by today's generation. Teachers need to be engaged as learners in this new approach to training and assessment (Cator, Lathran, Schneider & Ark, 2015; Shava, 2021).

Overall, teacher preparation remains currently constrained, inflexible and disconnected to the curriculum shifts especially in the area of assessment of students in teaching practice. To achieve quality education for SD, there should be a shift to ESD pedagogy. This shift should begin with teachers (Lotz-Sisitka, Tshiningayamwe, Chikunda, Mandikonza & Urenje, 2019). It is of pertinent concern that students from colleges of education often graduate with insufficient skills and competencies needed for the ever-evolving world. This persists because outdated factory models of education still plague many classrooms.

The New Zimbabwe Curriculum of 2018 is founded on notions of inclusivity, equity, relevance, gender sensitivity, practical tasks for skills and use of technology among others. It prepares for life and work in indigenised economies and global world thereby fostering lifelong learning in emerging opportunities and challenges (Marume, 2016). He further notes that the curriculum is aimed at producing learners who are able to create employment leveraging resources the country is endowed with. Achieving this goal involves using pedagogy and assessments specifically designed for problem-based learning, discovery learning, inquiry based learning together with investigations (experimental learning) and project based learning and assessments. In addition, case and issue analysis of real-life problems and not imaginary situations (Lotz-Sisitka, 2019 & Shava, 2022). These models of learning and assessment are currently lacking.

Gatlin (2009) pointed out that there should always be revitalisation of teacher education, connecting the curriculum with student's instructional delivery, learning environment and assessment. The teacher should be contextual, proactive and being able to transfer learning outcomes in terms of skills competencies to specific contexts thereby anchoring teaching in diverse life contexts of students.

Gatlin, (2009) also notes that competency-based education (CBE) is of concern around the world. CBE,

according to Cator et al (2015), is education that promotes learning of concrete and behavioural skills to foster lifelong learning in emerging local and global opportunities and challenges. Murume (2016) defines competency-based skills as outcomes of learning from formative and summative assessments relating to values, attitudes, behaviour and problem solving in real life situations. Cator et al (2015), echo that CBE learning promotes active inquiry, critical thinking, innovation, creativity, problem solving, collaboration, inclusivity, cognitive skills, tolerance and mutual respect among others. This is knowledge of application in the real world. CBE training is an approach to teaching and learning often used in learning concrete skills than abstract ones. Every individual skill or learning outcome known as competency is evaluated.

Teachers should tailor their instructions to support personalized learning, adapting to the evolving roles of students in the classroom. This approach enables students to tackle real-world problems. Assessments should also reflect this personalized learning approach. Cator et al (2015) further argues that credentialing teachers based solely on grades and content areas has become obsolete in CBE and that there is need to measure discrete skills. Teachers should empower students to take ownership of their learning, applying their knowledge and skills to real-world problems and experiences. However, current teacher training and assessment practices do not fully support this approach.

Although Education for Sustainable Development (ESD) in Zimbabwe is not a documented policy in operation in the education curriculum, its demands in the 2030 Agenda for SD converge with those of new Curricula Education 5.0 which adds innovation and industrialisation. The 5.0 curriculum is a shift from 3.0 which had teaching, research and community engagement only. In 5.0, the teaching should be research based, community engagement learning resulting in goods and services (industrialisation) which can be commercialised. As in CBE, the emphasis is on practical problem-solving education, learner centred, concrete skills (competencies) by a contextual teacher and learner. ESD is defined by Gatlin (2009) as education anchored in teaching and learning in multiple contexts not confined to the classroom. In ESD, knowledge is constructed from experiences of learners and applied to solve real life situations to achieve sustainable, relevant and quality education.

ESD also aims at encouraging changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all (UNESCO, 2019). It aims at improving access to quality education in all social contexts to empower learners to take responsible actions for environmental integrity, economic vulnerability and just society for even future generations while respecting cultural diversity. It helps individuals find solutions for sustainability challenges. Key to ESD and CBE is learning in multiple contexts not confined to the classroom, application of knowledge for practical skills and problem solving. Learning is constructed from learners' experiences and knowledge is situated in particular physical and social context, (Gatlin, 2009).

However, teacher training programmes are still designed in a traditional way of content-based instruction and assessment. Teachers trained in a traditional way cannot thrive in the new roles necessitated by shifts to student centred enquiry learning, CBE and ESD. Teachers' need to undergo professional training in these areas and assessment tools and instruments should be designed to measure the above competencies in teaching practice training. Koichiro (2009) and Shava (2021) note that, there has been progress in re-orienting programmes towards ESD in terms of the curriculum content, but there is lack in terms of modes of instruction and assessment. The education reform is curriculum centred focusing on structure and content ignoring pedagogical instructions, teaching and learning materials as well as evaluation of learning outcomes. The learning is more 'about SD and CBE and not "for", that is knowing about and not skills for SD. Thus, according to Koichiro (2009), more research is needed on indicators to assess ESD and CBE skills. Rowan (2016) echoes that multiple assessment methods are needed to measure competencies as they appear in the real world.

It is against this background that this paper seeks to identify and evaluate the current models of teaching practice and determine the extent to which teacher education imparts CBE skills for SD. The paper also assesses whether teaching practice assessment instruments reflect CBE, 5.0 and SD skills as well as establishing strategies to produce a contextual and effective teacher with pedagogical competencies for ESD. Teacher training colleges, in particular, Universities, continue to assess outdated skills of literacy and cognitive development.

The paper begins with an introduction highlighting the gaps in the area of teaching practice models. This is followed by theoretical exposition on societal transformation, SD and human capital development within the confines of the global and Zimbabwe national Agenda2030. Literature review puts research questions or objectives into context. These were to explore the current models guiding teaching practice in Zimbabwe, the extent to which teacher educators impart to student teachers CBE, ESD and 21st competencies for quality education as well as whether teaching practice instruments reflect the demands of changing global and national priorities of quality education for SD. The next sections of the paper comprise methodology, results, discussion and recommendations.

2. Literature Review

2.1 Theoretical framework

The paper combines the tripple theories of change, transformational learning and the one for education for sustainable development that focuses on teacher capacity and human capital development for change. An introduction of CBE or ESD curriculum and pedagogy calls for change of those who spearhead the change, the teachers. Teachers need to be capacitated in new ways of learning and diversity of learning styles (UNESCO, 2019). The theory of change helps identify elements or factors that either promote or hinder change. Researchers argue that some teachers or education trainers fear change, thus they hold on to traditional ways of teaching. Some teachers feel that there is no immediate necessity to adopt a new educational model and are willing to resist any changes at all costs (Codrington & Grant-Marshall, 2012). Teachers might think they do not need to change, as they succeeded without the introduced new methods. Teachers may not feel comfortable with the new methods and tools, which would create a gap between them and the teaching practice students who are more comfortable with emerging change (Godrington and Grant-Marshall, 2012). Teacher capacity building is very crucial in guiding change to new pedagogies. Being guided by the above theories, the paper explored areas that needed change, the kind of transformation needed, rational for change, challenges hindering transformation of teaching and assessment models and resultant outcomes in terms of expected quality education for SD.

2.2 Current Trends and Models in Teaching Practice Assessment in Zimbabwe

Researchers, policymakers, and educators now agree that quality field experience is the bedrock of quality teacher preparation (Moses, 2018). However, today s' field experience is not expected to be confined to the classroom but to extend to the real life experience of the surrounding. Teaching practice refers to the range of experiences to which student teachers are exposed to when they work in classrooms and schools (Marais & Meier, 2004:221). Teaching practice is an integral component of teacher training that should not be missed. Traditionally, the overall purpose of Teaching Practice is to expose student teachers to the actual teaching and learning environment. During teaching practice, student teachers observe subject teachers at work so as to learn about teachers' skills, strategies and classroom achievements. It is also the time when they evaluate their own teaching experiences through interactions with teachers and lecturers and, through self-reflection. In today s' it should go beyond the classroom to the real world where practical challenges of humanity are. Student-teachers should implement a variety of approaches, strategies and skills with a view to bringing about meaningful learning (Komba and Kira, 2013; Konyana & Motalenyane, 2022).

According to Muyengwa and Bukaliya (2015), TP affords students hands on experience of what happens in the school and the classroom. Aglazor (2017) echoes that the objectives of teaching practise are to expose the aspiring teacher to real life in the classroom, translate educational theories and principles into practise, help the student teacher familiarise with the school environment, develop positive attitude towards teaching as well as to discover their strengths and weaknesses for improvement. However, all the objectives given above revolve around the classroom environment making the skills imparted to be theoretical and traditional

Kangai and Bukaliya (2011) identified three models of teaching practise namely apprenticeship, traditional college based and equal partnership. Apprenticeship is a school-based training with the help of the experienced teacher playing a major role as the mentor to the trainee teacher for the tip offs. It is classroom based practical teaching commonly known as clinical supervision. Clinical supervision is the process of facilitating the professional growth of teachers primarily by observing teachers' instructional practices and giving feedback about classroom interaction to improve classroom delivery (Mahere, 2018). This model has dominated both pre-service and in-service teaching practice. It has, however, the weakness of being classroom-based testing classroom skills of instruction. The assessment is through lesson observations only by training lecturer's teacher educators), school mentors, heads of schools and heads of departments (Tshuma & Ndebele, 2014). They further highlight that competencies for instructional media in the classroom have nothing to do with CBE, ESD and 21st century competencies for the real world

The college based is another traditional model where the college puts more emphasis on theory at the expense of practice. Student teachers are assessed at college by lecturers and peers but again the skills tested have to do with classroom instructions. This model takes too long to produce qualified classroom practitioner outside college. The equal partnership is where training institutions, schools, and government work together. Training institutions teach theory, schools provide for teaching practice and the government funds. The host college (institution) assesses students during scheduled visits as lecturers or external assessors. Zimbabwean Universities and teacher training colleges borrow heavily from this model. Criterion includes documentation in TP files, with syllabi, schemes of work, lesson plans, and records of marks, teaching notes, assessment reports and timetables. Distinctive students are those with updated and well organised, teaching and learning environment, displays of practical delivery of lessons and pupil activities (Muyengwa and Bukaliya, 2015). All the models discussed above assess classroom skills of delivery. The skills imparted to the aspiring teacher have nothing to do with the real-world problems. Konyana

&Motalenyane (2022) suggests that there should be alternative teaching practice models for the changing world.

Burns (2014) discovered that one model used worldwide is observation where the master or experienced college lecturer observes teachers in the classroom, assesses their instructional practices providing feedback periodically as a form of peer coaching. The other model common in India, Indonesia, US and Azerbaijan is open classroom where teachers watch other teachers teach. Teachers design lessons and invite others to observe and provide post-observation feedback. Gaible and Burns (2007) argue that it is face to face and provides opportunity of information and skill sharing.

Another model is lesson study common in Japan. Teachers collaborate, plan, develop, field tests or improve the lesson in the classroom. They observe the lessons, make changes and collect data to see the impact of the lesson on students' learning over a period of time. This demands that professionalised development providers be skilled in content, instructional media and assessment (Stigler& Hiebert, 1999). Some use study group model to benefit from formal discussions and interaction with peers on critical issues for problem solving and reflection by a skilled facilitator. Work created by students can be used as part of problem solving approach. In USA, for instance, students work is looked at as formative assessment to check evidence of student learning. However, in some countries, these can be combined to produce a grounded and rounded teacher. Some of the models are still used in teacher training and are likely to produce 21st century competences.

There are however, some scholars who argue for Technical Vocational Education Training (TVET), where both the student teacher and her students are included in the real world, integrating student experiences into the real world outside the classroom (Atkinson, 2016). Teacher educators, student teachers and their learners should all be engaged with employers in industries, the real world for future skills and life long skills. Huddleston & Stanley (2012) collude that in the current economic climate, it is more than important for young people to engage in the world of work to gain knowledge and skills as well as experience to prepare them for future careers. Trainers should construct research based pedagogy with practicals for student teachers as practitioners. The same knowledge should be imparted to their learners.

2.3 Extent to which Teacher Educators impart CBE and ESD skills for QE

The world today is increasingly multimodal due to new technologies (Okeke, Van Wyk & Phasha, 2014). In their research findings, Schuck & Aubusson (2013) observed that the move to twenty-first-century learning is important. They saw the need for schools to produce creative thinkers who needed to be technologically capable and able to work effectively in collaborative teams. Such needs would have a bigger impact on teacher education. The findings further indicated that teacher education would be changing to emphasise twenty-first-century skills which would be a trend for the foreseeable future. This naturally raises the question, whether the current pedagogy curriculum for teaching practice recognises these important skills.

In the 1990s, CBE became dominant in Australia and New Zealand then later spread to Africa. CBE was adopted by 13 out of 25 African countries becoming part of the curricula in West, East and Central African countries; Benin, Gabon, Mali, Senegal, Rwanda, Kenya and Tanzania among others (Leyendecker et al, 2008; Gauthier, 2013). In Kenya, learners are expected to do and not know only, to solve situations they encounter in life. Teachers were to be flexible to adapt to the new curriculum to meet its needs of the country and collaborate with stakeholders. Intentions of the schools were to be re-oriented. Osketch (2014) discovered that Botswana, Kenya and Ghana tried to integrate vocational training into schooling to improve learners' competences.

The implementation was however, not successful because of deficiencies of implementers (Gauthier, 2013). The other reason was that the programme was under resourced and large class sizes (Komba and Mwandayi, 2015). The intentions of the programme were not clear even to the implementers (teachers). Professional training underpins reform. There was lack of professional development of teachers as implementers. Curry & Docherty (2017) also noted the problem of absence of appropriate training of implementers. Lack of preparedness of instructors was one of the significant difficulties thwarting successful execution of CBE. Ruth & Ramadas (2019), points out tha in Africa CBE is still a problem of mastery without application of skills. In Zimbabwe and Zambia resource constraints and lack of training for teachers was, however, a hindrance (Pedzisai et al, 2014).

CBE and ESD have become areas of major focus in recent years worldwide and in Zimbabwean education system with the introduction of Zimbabwe Qualifications Framework (ZNQF), focusing on competencies acquired at each level of education from diplomas, degrees to PhDs (ZNQF, 2018). Serdenciuc (2013) highlights that it is crucial in competency based education to integrate the learning experiences, contexts and needs of potential beneficiaries as preparation of learners to meet changing social and economic demands. Both are an integral part of quality education to be enforced at all levels of institutions. Both focus on competencies for present and future use and with ESD, competencies for sustaining resource for the future. ESD aims at developing competencies that empower individuals to reflect on their own environment taking into account their current and

future social, economic, local and global perspectives (Cebrian et al, 2020). The 21st Century skills imparted by CBE and ESD and 5.0 mantra are broader practical competencies that enable one to actively participate in the real world challenges. They are different from academic skills for the 20th century which were literacy, communication, collaboration, critical thinking, creativity and innovations which were classroom based. It was assumed they could be transferred to the real world in future. The list of 21st century skills include technological skills for application in the real world, problem solving that make learners to be agents of change, that is transitional managers, autonomous learning personalised individual learning) by both students and educators, thus 21st century skills are at the heart of individual learning (Gonzalez, 2020 p3). Although students interact in a heterogeneous group, they take responsibility of their own learning. The skills enable one to link with knowledge economy, formal and informal learning as well as inter-disciplinary active participation in the real world outside the classroom (Gonzalez, 2020 p2). He further assets that it is SDG4 that should provide such sustainable education for the future generations of professionals through ESD pedagogical innovations that provide interactive, experiential, transformative, action oriented pedagogy and real world learning. Students and educators as part of society should be empowered to act in complex situation in a sustainable manner. ESD is self-directed participation, collaborative and problem solving, linking formal and informal learning to develop sustainable competencies that combine cognitive, practical abilities, ethical values and attitudes mobilised in real situations and contexts to change agents towards sustainability (Cebrian et al, 2020).

2.4 New trends in pedagogy and assessment in teaching practice in Africa and Zimbabwe

The 2030 Agenda envisages education that reflects new skills, values and attitudes needed to sustain societies as response to SD agenda. With global challenges such as climate and environmental change, disaster reduction, conflict over resources, poverty, we urgently require a shift in our lifestyle and a transformation in the way we think, act and educate our students (UNESCO, 2017). For this reason, education should directly or indirectly tackle SDGs. Education is viewed as a key enabler and an essential strategy in the pursuit of SDGs. The Rio de Janeiro earth summit discussed the critical role of education and the world summit in 2002, declared 2005-2014 as the decade of ESD. Education must respond to the pressing needs by defining relevant content, objectives, pedagogy and assessment reflecting 2030 Agenda. The current model of student teacher-assessment by mentors, school subject specialists, heads of departments and head of schools may disconnect the aspiring teacher with new national priorities. Aglazor (2017) points out that the host teacher is not well versed with the new developments namely ESD and 21st century competencies yet teaching practice has influence on the student teacher learning, desired outcomes as well as the prime goal of HE institutions. Student teaching is based on a country s' national education policy and the teacher training programme should be informed by the institutions' unique vision, mission and education philosophies of the nation (Aglazor, 2017).

Zimbabwe education policy curriculum adopted the Zimbabwean National Qualifications Framework (ZNQF) that feeds into the Southern Africa Development Qualifications Framework (SADCQF) and the African Continental Qualifications Framework (ACQF) all emphasises competencies in education. The Current 2019 National Development strategy in Zimbabwe (NDS 1) has implications of SD in all its priority areas, including human capital development. SD, ESD and 5.0, all converge in emphasis of competency skills for use in life challenges and sustainable lifestyles; hence, educator pedagogies and assessments should focus on developing those competencies. ESD is education that equips people with values, skills and awareness to conserve the environment for future generations and necessary skills to deal with future challenges.

Zimbabwe is signatory to the 2030 Agenda and other national education policies like 5.0, CBC and ESD. However, at the moment, the curriculum is not explicit in ESD. In addition to this curriculum gap, the pedagogy and assessment are far from producing 21st century competences. Assessment instruments need to be transformed to reflect CBE, 5.0 and ESD. Kioupi & Voulvoulis (2019) reveal that studies on effectiveness of ESD since 2005 are limited. The few that exist reveal discrepancies and deficits of the curriculum in different countries. Studies reveal that education still prepares students for competitive job markets rather than responsible citizens aligned to CBE and ESD skills for the future careers and survival. Despite mushrooming researches, innovation hubs and inter-disciplinary researches as well as the introduction of ZNQF based on competence learning, assessment instruments have not shifted to that direction to promote the sustainable lifelong learning skills.

Assessment of significant learning is crucial to ensure that learning process guarantees the acquisition of knowledge, values and competencies of innovation, creativity, solution based thinking and actionability (UNESCO, 2017). Unfortunately, education policies are not accompanied by design of assessment methods and instruments to test the above skills. According to Fleisch et al (2019), the traditional colonial system examination assessment still exists in Zimbabwe in form of Ordinary and Advanced ZIMSEC along lines of Cambridge. Summative assessments continue to dominate instead of formative assessment for learning as well as assessment as learning. Grades are given at the end of the education cycle. The education system continues to have

challenges in making the above types of assessment to be valid forms of assessment. The task types of continuous and summative practical assessments (Continuous Assessment Learning Activities) (CALA) introduced by the Minister of primary and secondary Education (MoPSE), did not make any headway as a result of lack of preparedness by the educators in terms of pedagogy and assessment (Nyamudzodza et al, 2021)

According to LAMP literacy Assessment Monitoring project by Cheng and Omoeva (2014), the nature of assessment focuses on literacy and content hence is limited on policy reform. It emphasizes National public examinations which lack practical orientation. Such cannot produce competencies in line with CBE and ESD policies. The National Qualifications Framework policy is based on levels of competencies for each qualification one obtains. Since 2005, the grades have been harmonised across borders (SAQUAF) and AFQUAF) for comparable credits and in 2018 Zimbabwe harmonised the Universities curriculum, the credit accumulation system as well as the levels of education under the ZNQF. Ten levels of the ZNQF were revived and used as benchmarks since 2018. Assessment tools are now needed to evaluate these competencies in the learning process. Research efforts should develop tools to measure competencies which now define quality education, characterised by self-reflexivity, self-inquiry, self-awareness, service learning, problem solving, case studies, self-care, emotional resilience, intrinsic motivation and problem oriented action. These are some of the crucial competencies that are lacking in today s'education.

According to Gonzalez (2020), further research is needed in design and implementation of new instruments for assessment and ways of personalising the above skills. This is because assessment creates opportunities for further integration of competencies and ways of addressing issues experienced in everyday life (Kambobwe, 2019). Ogegbo &Adewusi (2020), argue that in Africa assessment has not moved beyond the traditional level of assessment to integrate and support learners. The 21st century competencies are however, not assessed (Shava, 2021 & Chapungu &Nhamo, 2023).

Curriculum reform should be based on realities on the ground and co-ordinate development efforts to build better co-operation. Right now education focuses on numbers channelled out of educational institutions per year rather than the quality of graduates in terms of competencies. The lower primary should be a foundation of the competencies and the secondary and tertiary building on the primary education. Programmes are not ideal on themselves. Contextual factors must be taken into account and competencies achieved to solve contextual problems.

3. Methodology

The design of research was a qualitative case study of two university institutions in Zimbabwe. The two universities were purposively sampled due to their niche and long history in teacher education. The sample was composed of 20 respondents. In institution A, 3 Chairpersons of Departments (CPDs) were sampled and 2 CPDs in institution B because of the number of departments and the number of students in applied teaching departments of the two institutions. Three teaching practice programme co-coordinators, 2 from the institution with the biggest number of departments were purposively sampled on the bases of experience in this responsibility. From each institution 12 lecturers were selected using stratified randomly sampling from applied education departments which assess students on teaching practice. The stratification was based on experience. In each institution 3 lecturers who have been in teacher education before the new curriculum and those who joined after the introduction of the new curriculum. This enabled the researcher to gather data on changes that have been made to the curriculum, models, pedagogy and TP assessment instruments. The instruments utilised were interview schedules for teaching practice coordinators and chairpersons of departments as well as questionnaire for lecturers and an analysis of teaching practice policy documents along with teaching practice assessment instruments. Data was analysed thematically drawing themes from research objectives. The research findings were qualitatively and thematically presented.

4. Results and Discussion

The presentation and discussion of results is guided by the objectives of the paper which are to identify and evaluate current models in teaching practice and to determine whether teacher education imparts CBE and 21st century skills for SD. The paper also explores whether assessment instruments for TP reflect changing national and global demands of sustainable quality education. Both literature and empirical findings revealed competence skills gap on the part of student teachers and their educators. The 21st century skills gap is a result of the fact that the TP models and the assessment instruments being used in teacher training have not adapted to address the new trends related to sustainable development demands. Below is the systematic presentation and discussion based on themes drawn from the objectives. The two University institutions are coded A and B for anonymity. L is for lecturers, TPPC is for Teaching Practice Programme Coordinators and CPD refers to Chairpersons of Departments. Each respondent for each sampled group is allocated a number for anonymity.

The respondents for the two institutions were 3 TPPCs, 5 CPD (3 from institution A and 2 from institution B) as well as 12 experienced lecturers drawn from various

departments in applied education. Institution A had many departments and many students doing teaching practice, hence 2 TPPCs and 3 CPDs. The trends in the two institutions were that the models had not been transformed and these were clinical (college based and school based). Both models were diagnostic to facilitate student teacher professional growth primarily by observing teachers' instructional practices and classroom interactions as well as giving feedback inside the classroom by college teacher educators, peers and school based mentors, heads of departments, heads of schools and visiting college lecturers. CPDs' responses on models were corroborated by all the TPPCs and all the lecturers sampled.

However, CPD and TPPC felt that with the change of the higher Education (HE) education curriculum to Innovation and Industrialisation (5.0), and the emphasis on 21st century competences, the models of TP need transformation to allow learners to confront the challenges of the 21st century inoder to achieve sustainable development. Innovation and industrialisation should result in goods and services from acquired lifelong learning skills. They highlighted that it is high time TP moves out of the classroom into the context of industries and the community where both student teachers and their learners experience use of competences in real life situations. One of the TPPC suggested that for TP to contribute to such development, and for it to align with the national and global priorities Institution A TPPC 1 cited that "*we need to re-think on models, a model with TP part 1 (school based) and TP part 2 (industry and community based)".* This allows student teachers and their learners to apply competences from the classroom to the real world and to give contextual learning. Institution B TPPC 1 had this to say:

> *We use micro-teaching model, students practice teaching, receive feedback before going to schools and during TP in schools. Basically, we use school based mentor model. We also adopted home area TP where student teachers observe experienced teachers before they proceed to work with mentors in school."*

CPDs and TP PCs also highlighted that the current mode of teaching in HE, the modularisation with its quarter system (4 weeks of learning and examinations) has further compromised the existing TP models. One of the lecturers pointed out that teaching 21st century competencies within a 4-week quarter is insufficient and these skills do not fully develop within the classroom. Modularisation was also blamed as a cause for abandonment of micro teaching practice in schools neighbouring the Universities. Institution A CPD 1 lamented "*We also abandoned home area based TP*", this was a form of micro-teaching, a home area TP observation as a form of induction into the classroom. This model assimilated well with HE heritage based education and the Ministry of primary and secondary (MIN SOPs) s' CALA. It allowed students teachers and their learners to interact and explore the real world challenges, connect with the local environment and use locally available resources as instructional media as encouraged by ESD.

Another TPPC from institution A felt that,if learning cannot take place in the community (community engagement learning) or industry (industrial attachment), it would be better for student teachers and their learners to have pre-arranged educational field trips to industry and surrounding communities to blend theory and the labour market where students are being groomed to be. In both institutions, students go on TP for the whole year in schools (school based) except those doing Post Graduate Diploma in Education (PGDE) who are already in schools and occasionally, the campus for theory lectures, college project and dissertation supervision together with examinations. Even so they also undergo TP supervision for a term.

2.1 Understanding of TP, CBE, ESD and 21st century competences by the teacher educators of the two institutions

The first questionnaire item for teacher educators focused on their comprehensive understanding of TP and its significance to teachers in training. In both institutions, Teaching Practice (TP) was viewed as translating teaching principles into reality. They mentioned that TP is viewed as an integral part of teacher education to give students exposure to the teaching career by getting full responsibilities for a class under the guidance or supervision of a mentor or a trained teacher. It is seen as affording student teachers' opportunity to put into practice relevant theory, concepts and pedagogy skills acquired during lectures thereby widening the horizon of the classroom. Below are the indicative responses by lecturers:

> L1 institution B *TP focuses on applying theoretical knowledge in a school setting in-order to develop pedagogical skills*

L2 institution A *In TP we assess technical skills of lesson delivery.*

CPD 1 for institution B pointed out that *"without the practice of teaching, there is no teacher"* and one from institution A reiterated, *"It is teaching practice in teacher training that shapes the teacher. It is teacher application of instructional prowess in the classroom"*.

L2 in institution A, cited that:

> *Outdoor is for co curricular activities which we also assess, but we are interested in what happens in the classroom, that is, is the student*

teacher able to deliver lessons in the classroom?

Yes they may use the media from the environment or refer to it but to us we are interested in learning taking place within the confines of the classroom.

Lecturer 1 institution B had this to say;

Yes we have transformed the curriculum, we hear about heritage based and community engagement learning but we are not yet there, we want to be sure first that the student teacher has been backed and can apply theory to instruction in the classroom.

Despite the differences conveyed by lecturers, TPPCs and CPDs, they all converged on the idea that teaching practice is confined to the classroom and is about application of teaching skills specifically relevant to the classroom. This view automatically confines the practice of teaching and training to the classroom excluding outside environment (outdoor world). According to the results, if the outdoor world is part of learning, it can be represented through abstract reference.

One of the questionnaire items for the teacher educators had to do with their understanding of CBE skills, 21st Century and ESD competences which they were to impart to student teachers who would subsequently pass to their learners in schools. Below are the responses by lecturers from institution B. In this paper, a lecturer is used interchangeably with teacher educator a term commonly used by UNESCO in ESD.

L 4 *To be honest, l am trying to understand what competency based education means for our curriculum.*

L 5 *I am not entirely sure what you mean by global and national priorities of CBE*

L 6 *We have made some adjustments but l am not aware of global and national priorities*

L 7 *We are still in the process of aligning with CBE, a community engagement project for in-service students have been added.*

Institution A had a better understanding of Competency Based Education (CBE) citing that it is skill oriented education, mentioning critical thinking, problem solving, creativity and critical analysis skills but again these were confined to the classroom for example critical analysis of texts, solving mathematical problems, cognitive skills and creativity in art, writing of compositions and construction of sentences among others. Again, these could not be linked to the challenges of the 21st century and sustainable development.

There was also mention of Information Communication Technology) ICT skills, innovation as well as entrepreneurial skills but the applicability and assessment of these skills take place in the classroom (classroom based learning). The teacher educators are not knowledgeable on the new trends and demands of competency based education. Responses from institution A are as follows:

L 4 *It is education that equips with skills for use in the real world, practical but with TP we are interested in application in the classroom first*

Education for Sustainable Development (ESD) was well defined by CPDs, TPPCs and lecturers, especially those that had been work shopped on ESD and 21st century competences in institution A. There had been series of workshops with UNESCO in Kwekwe and Harare in Zimbabwe and at Rhodes University in South Africa. There are also lecturers who are members of UNESCO teacher training capacity building on ESD. Institution A is also part of a regional task force on ESD with countries such as Zambia and Malawi. This is reflected in the following responses from some of them.

CPD 1 *ESD is education that enables achievement of a just society whose present activities do not jeopardise life and environment conditions of future generations.* Others cited that it ensures continuity of society and its available resources promoting sustained socio-economic potential by preserving the environment. However, they were quick to point out that they had reviewed their curriculum and modules to reflect ESD and CBE.

Although institution B did not have a comprehensive understanding of ESD, they managed to describe it as education that equips a person to earn a living, promoting changes in skills, values and attitudes for sustainable and a just society. It was viewed as educating people for survival. However, being aware of these trends by both institutions did not translate to implementation of the demands of the new trends by educators. It emerged during the interviews that not all lecturers were aware of the shift of the curriculum to new priorities. This was an indication that only a small number of lecturers were familiar and applied ESD for 21st century competences. As a result the subsequent objective was to determine the extent to which ESD and CBE skills are being imparted to teachers in training and consequently to their learners.

Regarding whether their universities had adapted the curriculum to incorporate CBE and ESD, the 21ST century competences, the following responses were given';

L4 in institution A, l am *not sure whether the curriculum has been transformed but we definitely made some adjustments. However, l am not aware of any specific global or national priorities driving this.*

L5 from institution A, *What we did was not transformation but an adjustment to incorporate*

national priorities of sustainable development issues and the 5.0 mantra

TPPC 1 from institution BB, *I am not sure but change is inevitable.*

TPPC 2 from institution A*A, By introducing community engagement projects were are in line with national priorities.*

CPD 1 from institution B, We have transformed pre-service training....

From the above, it is conspicuous that educators are not adequately informed in curriculum transformation, knowledge of national priorities and the skills outcome. They are top down policies without the involvement of implementers. CPDs and TPPCs within the management structure seem to have adequate knowledge on national priorities and competency outcomes expected but educators are not capacitated on the changes being made on the curriculum.

CPDs and TPPCs brought up a thorny issue relating to lack of unified policies between HE and Ministry of Primary and Secondary Education (MoPSE) how sometimes their policy demands contradict each other. The two ministries work in silos where the Ministry of HE introduced 5.0 in its curriculum while MoPSE brought in Continuous Assessment Learning Activities (CALA). In terms of policy outline, the two embed common elements of heritage based learning, emphasis on competences and the harnessing of local resources but unfortunately, teachers are not trained in the pedagogy of the two. The student teacher subjected to the new curriculum 5.0 and CALA in school based TP is under the guidance of a teacher-mentor who lacks knowledge in HE 5.0 and is unaware of its implementation such that when the college supervisors follow students they find students implementing CALA which is not accustomed to them. L2 from institution A had this to say;

What we train for, MoPSE may not need and our student teachers do not have a class of their own. They can only do what the school based mentor wants.

TPPC 1What schools demand has nothing to do with ESD and 21st century skills. Mentors have highlighted that they do not understand our curriculum thrust.

CPD 3 Our students are strangers in MoPSE. Students end up having two files, one for college and one for the school attached to.

Emerging was a policy gap between the two ministries. MoPSE has not aligned its policies to 5.0 heritage based education where students are to interact with the local environment. In CALA as well as in 5.0, learners have to produce goods and services from craftwork, textiles, woodwork and metal among others using raw materials and expertise from industry or the community but there is no clarity of educational policy when it comes to outdoor activities. Student teachers may not take learners outside the school for security reasons. Learners also have to collect data from their communities so they have to do it alone.

So generally, teacher education and TP remain as classroom based detached from the 21st century and ESD expectations for the world of work.

2.2 The extent to which teaching practice assessment instruments reflect the demands of CBE, ESD and 5.0 for quality education

Although CPDs in both institutions had reviewed their curriculum and modules to reflect CBE and innovation and industrialisation skills (5.0) as expected by the government for quality and sustainable education, educators were not prepared for the change and did not participate in curriculum transformation. As a result, findings revealed that both pedagogy and assessment had not changed to align with the demands of ESD, and CBE. Teacher educators in both institutions colluded that their teacher training and assessment methods did not test these skills outside the classroom and that most of the learning did not take place outside the classroom but they however, linked their teaching to the environment by encouraging their student teachers to use locally available natural resources as instructional media. They believed that incorporating the environment into the classroom helped connect learning with real-world context. The resources listed were flora, fauna, food stuffs, fruits, plants and animals, sand and trees. In some subjects, examples of the above were referred to. Institution B summarised natural resources used as all gift of nature adding to the above water, minerals, soil types and wood. When asked whether they penalised students for failure to use these, educators from both institutions concurred that they did not but gave credit to students who used them. The respondents reported that there were no specific marks allocated for practising inclusive education which involves use of locally available natural resources from the surrounding and conducting practical projects for livelihood but rather credited teachers whose lesson delivery reflected these. L3 from institution A had this to say; *'these are not specifically singled out so we credit where observed".* The teacher educators accepted any type of instructional media. They were not particular about media drawn from locally available resources. L4 from institution A reported; "*we do encourage student teachers to make models from local materials but this is not a must"*. In institution A, sometimes student-teachers would be taken to the innovation hub to see practical projects and goods made out of locally available resources. Educators confirmed that traditional media technologies like charts, white board, flash cards, ICT, diagrams and maps still dominated their teaching even for real phenomenon that

can be observed and worked with outside in real contexts. Institution B added packaging materials, magazines, paper, pictures, models, projectors, laptops, books and products from the market.

The responses relating to a question on what their departments had done to ensure teacher training reflected the above skills, responses showed that nothing had been done to assess these skills. Institution A, cited that they exposed students to various activities, however, most of the lecturers were unaware of how they could assist trainee teachers to acquire the above competences. Institution A cited that they had reviewed their curriculum modules to reflect CBE, ESD and 5,0 as well as their teaching practice processes and strategies. It was, however, noted that the teaching practice review was related to number of visits, duration, transport logistics, review and assessment of clinical tools, training guides for expectations. It also had to do with how to draw schemes of work and lesson plans and use of ICTs namely, skype and changes from university driven to faculty driven teaching practice, all of which had nothing to do with transforming assessment instruments to measure CBE and 5.0 the fundamentals of ESD. Below are the responses indicating that assessment instruments have not undergone review to test ESD, CBC and 21st century skills.

CPD 1 in institution B, *No we have not changed our instruments*

TPPC2from institution B: *Not really, I coordinate the pre- service programme, we have not changed the assessment instruments*

TPPC1 from institution A: *We are in the process. We once discussed the issue. The changes we have made have nothing to do with the skills you are talking about.*

However, those training in practical subjects, for example, food science, textiles, ICT and agriculture among others, were near imparting concrete skills for sustainable future lives though their assessment was also largely classroom based assuming that the life skills are easily transferable to the real world of life. Learning is still largely confined to the classroom or school and rarely takes place outside the school. The environment is brought to the classroom instead of taking learning to the experiences of learners outside the school. The skills from CBE and ESD are for solving real world problems in the context of the environment rather than bringing the environmental problems to be solved in the classroom.

CPDs and TPPCs brought up a thorny issue relating to lack of unified policies between HE and Ministry of Primary and Secondary Education (MoPSE), sometimes their policy demands contradict. The tow ministries work in silos. The ministry of HE introduces 5.0 in its curriculum while MoPSE brought in Continuous Assessment Learning Activities (CALA). In terms of policy outline, the two have in the practical aspect of heritage based, emphasis on competences and harnessing of local resources but teachers were not trained on the pedagogy of the two. The student teacher training under the new curriculum 5.0 and CALA in school based TP is being supervised by a teacher-mentor who have no idea of HE 5.0. It was revealed that when college lecturer-supervisors follow students on TP, they find students implementing CALA when they had not trained student teachers for CALA.

L2 from institution A had this to say:

What we train for, MoPSE may not need and our student teachers do not have a class of their own. They can only do what the school based mentor wants.

TPPC 1What schools demand has nothing to do with ESD and 21st century skills. Mentors have highlighted that they do not understand our curriculum thrust.

CPD 3 Our students are strangers in MoPSE. Students end up having two files, one for college and one for the school attached to.

Emerging was a policy gap between the two ministries. MoPSE has not aligned its policies to 5.0 heritage based education where students are to interact with the local environment. In CALA as well as in 5.0, learners have to produce goods and services from craftwork, textiles, woodwork and metal among others using raw materials and expertise from industry or the community but there is no clarity of educational policy when it comes to outdoor activities. Student teachers may not take learners outside the school for security reasons. Learners also have to collect data from their communities so they have to do it alone.

The teacher educators colluded that their assessment instruments did not have specific, explicit and visible CBE, 5.0 or ESD skills but the skills are partly assessed by implication. Despite the national policy, vision and thrust emphasizing these aspects, the instruments are not yet aligned. When lecturers were asked on whether they participated on curriculum review and the crafting of TP assessment instruments, the majority reported that they had not. However, a few, primarily chairpersons confirmed their participation. Among the sampled lecturers, none had been involved in the crafting of the TP assessment instruments and they were unaware of a lecturer within their department who had participated in this process. Below are some of the responses indicative to this fact. Below are their responses:

L1 *No*

L2 *Not at all*

L3 *Never*

L4 *No , the instrument was already there when i joined the institution*

Their responses were inline with those of institution A;

L1 *No I didn't*

L2 *The instrument is given to lecturers as it is*

L3 *Nothing has been done to it, found it there, i joined the institution in 2017*

On whether the TP and its assessment instrument was imparting CBE, ESD and 21st century skills as well as contexualising learning, the following responses were given:

L5 institution B, *The instrument mainly focuses on what students should do before, during and after the lesson. Students do not learn anything about heritage based education. It focuses on lesson progression.*

L2 institution B *To contextualise learning my students use real world examples*

L4 *We encourage students to make use of their surroundings*

The responses from institution A are as follows.

L3 *We use illustrations, for example, drawing the map of the globe of the world on an orange then spread the orange on the flat ground.*

L6 *We still rely on drawings on charts or board as well as teaching aids brought to the classroom to try and create a context*.

The results above on teaching practice assessment instruments are supported by data from analysis of assessment documents below.

So generally, teacher education and TP remain as classroom based detached from the 21st century and ESD expectations for the world of work.

2.3 Analysis of teaching practice documents for institution A and B

The TP documents were analysed to determine whether they address the competence skills in terms of content and delivery methods. The findings revealed that the documents focused on the expectations of student teachers in relation to understanding schools' organisational structures and teaching practice file documentation as well as supervision processes. Despite reviewing curriculum content to align with CBE, 5.0 and ESD there hasn't been a corresponding shift in pedagogy and assessment in both institutions. The lesson plans composed of topics, content, objectives and assumed knowledge, none reflected the pedagogy or elements of CBE or ESD. Media technology samples were too general and did not necessarily link to the environment and experiences of learners. Lesson planning documents revealed that sources of information in schemes and lesson plans were books, pictures, maps and the internet overlooking valuable knowledge from learners and the environment.

The clinical TP instrument focused mostly on documentation and preparation for teaching while the TP assessment instrument was concerned with precise or smart objectives, neatness, level of content, motivation of learners, clarity of questions, low and high order questions together with use of any instructional media. It also focused on the organisation of the lesson namely the use of voice and non-verbal cues, class management, engagement of learners in classroom participation and chalk board or white board use as pointed out by L5 from institution B. " *The assessment instruments focus on pedagogical skills of the classroom, what the student teachers should do during the lesson."* These are the skills that are assessed within the confines of the classroom in 30 to 35 minutes lesson.

The teaching practice assessment report is submitted to the training institution at the end of teaching practice. For institution A, the report is on the history and organogram of the school, applicable theories in teaching, challenges and possible improvements. Professionalism focuses on dress code, ethics, punctuality as well as adaptation to the community and school, communication, relationship with learners, supervisors, school authorities and with other teachers. The day today activities of the teacher in training are overseen by mentors who lack knowledge of new trends in education due to their training predating the introduction of the new competencies. The assumption is that competencies do not change, pedagogy is static and 19th century teaching is still applicable in the 21st century.

The grading scale of teaching practice assessment also focuses on content and average marks rather than competencies. A student teacher who gets a distinction is the one who has exceptionally high mastery of the content subject with marks ranging from 75-100%. A merit is given to a student with up-to-date documentation whose mastery of the subject matter is good. A pass is acceptable degree of mastery and the one who fails is one who is negligent in documentation and whose mastery of content is doubtful. Such kind of assessment misses the desired goal of the new curriculum and new trends in education hence cannot achieve quality education relevant to the needs of the current and future generations.

However, all the teacher educators, TPPCs and CPDs felt that additional efforts are necessary in this domain to ensure that the above skills are imparted if we are to have quality and sustainable education. Strategies of pedagogy and assessment need to be developed to ensure teacher education and teaching practice imparts these skills. Below are the suggestions to that effect:

L1 *institution B: Currently the focus is on imparting knowledge, the TP curriculum is knowledge based. To improve this, there should be assessment out of the classroom.*

L2 institution B: *Our students need to be strengthened with skills to engage the community*

L3 institution B: *There is a challenge in changing the current TP model because our student teachers go out to teach an exam oriented curriculum where the focus is to make student pass*

L3 institution A: *More marks should be allocated to community engagement activities as compared to content or knowledge acquisition.*

CPD 1 institution A: *We need to add industrial and community learning component.*

TPPC institution A: *There is urgent need to interrogate the relevance of the current TP and re-think on models.*

The general feeling was that the models are outdated and change was inevitable and very necessary and urgent.

5. Conclusion and Recommendations

5.1 Conclusion

From the study it is clear that teacher educators need to be grounded in new trends in education and to have a broader understanding of the role of education and teacher education in order to keep abreast with local and global priorities. Teacher educators lacked a comprehensive understanding of the demands of ESD or CBE, which is the focus of the new curriculum. Despite the curriculum of universities being reviewed to incorporate new trends in CBE, ESD and innovation and industrialization, this hasn't translated to the transformation of pedagogy and assessment towards achieving these. Although educators CPDs and TPPCs listed competency based skills, these were narrow in scope. The pedagogy and assessment lag behind and educators have not been prepared to tackle CBE AND ESD for the achievement of the 21st century competences. Teacher education pedagogy and assessment are divorced from the environment and experiences of teachers and learners. Pedagogy and assessment models and instruments need to be re-visited and transformed to achieve quality and sustainable development competences. TP should be school, industrial and community based. Teacher training colleges and universities should be able to channel out graduates suited for work outside the classroom and who possess lifelong skill.

5.2 Recommendation

The following are the recommendations outlined from the findings:

1. Transformative learning which action is oriented learning to achieve CBE, 5.0 and ESD competences in line with global and national priorities.
2. Curriculum review starting with learning content, then pedagogy and assessment to promote core competencies that help learners to take responsibility and contribute to SD.
3. Re visiting and designing of TP models which connect school based TP to industry and the local communities for community engagement learning.
4. Teacher educators' capacitation building in action-oriented pedagogy and assessment to achieve the above 21st century competencies and quality education which is sustainable.
5. Harmonisation of HE and MoPSE educational policies.

References

Aglazor, G. (2017). The role of teaching practice in teacher educational programmes: Designing framework for best practices. *Global journal of educational research. Vol. 16* pp 101-110.

Atkinson, G. (2016). Work based learning and work integrated learning: Fostering engagement with employers. Education resource information Centre. https://files.eric.ed/gov/fulltext/ED 568154.pdf.

Burns, M. (2014). Five models of teacher-centred professional development. https://www.globalpartnership.org

Cator, K., Lathran, B., Schneider, C., 7 Ark, T.V. (2015). Preparing leaders for deeper learning. www.gettingsmart.com/wp-content-uploads/2015/05/preparing-leaders-for-deeper-learning.pdf

Cebrian, G., Junyeti, M. & Mula, I. (2020). Competences in education for sustainable development: Emerging teaching and research development. Girona: Institute of educational research.

Chapungu, L. & Nhamo, G. (2023). Status quo of SDGs localisation in Zimbabwe universities: Student perspectives and reflections. *Elsevier vol 7.* https://doi.org/10.1016/sftr.100147.2023.

Cheng, X. & Omoeva, C. (2014). National leading assessment mapping projects: Key findings. Literacy Assessment Monitoring Project (LAMP). https://www.epdc.org

Codrington, G. & Grant –Marshal, S. (2011). Mind the gap: Own your past, know your generation, and choose your future. Johannesburg: Penguin books

Curry, L. & Docherty, M. (2017). Implementing CBE. Collected essays on learning and teaching. https://files.eric.ed/gov/fulltext/EJ1147189.pdf

FAO. (2022). Sustainable Development Goals. FAO. https://www.fao.org/sustainable-development-goals/goal-4/en/.

Fleisch, B., Gulting, J. Allais, S. & Maringe, F. (2019). Curriculum reform assessment and National Qualifications Framework (NQF). Master card Foundation https://mastercardfdn.org

Gaible, E. & Burns, M. (2007). Using technology to train teachers: Appropriate uses of ICT for teachers' professional development in developing countries. World Bank.

Gatlin, D. (2009). A pluralistic approach to the revitalisation of teacher education. *Journal of teacher education, 60*(5), pp469-477.

Gauthier, R.F. (2013). The competence based approach to curriculum reform in 5 African countries: What can we learn from the 2008-2009 evaluations? *Prospects 43*(4), 429-439.

Gonzalez, J.C. (2020). Key competences, ESD and strategies for the development of literature review. *Sustainability 12* (24). https:www.researchgate.net/publication/347621169-key-competences-education-for-sustainable-development-and-strategies.

Huddleston, P. & Stanley, J. (2012).Work related teaching and learning: A guide for teachers and practioners.

Kambombwe, Y.M. & Mulenga, I.M. (2019). Implementing CBE curriculum by teachers of History in selected secondary schools in Lusaka district, Zambia. *Yesterday and today,* (22), 19-41.

Kangai, P. and Bukaliya, R. (2011). Teacher development through open distance learning: The case for Zimbabwe. *International journal on new trends in education and their implications to models of teacher education. Vol 2*, issue 4 pp124-141.

Kangai, P. & Mamvutho, A. (2011). Emerging perspectives in teaching practice external examinations in the university of Zimbabwe scheme of Association. *ZJER Vol 23,* No 2. PP 85-100

Kioupi, V. & Voulvoulis, N. (2019). ESD a systematic framework for connecting the SDGs to educational outcomes. London: Centre for environmental policy.

Koichiro, M. (2009). Training guidelines on incorporating ESD into the curriculum. UNESCO. www.ibe.unesco.org/sites/esd-training-guidelines-3pdf

Komba, S.C. & Kira, E.S. (2013). The effectiveness of teaching practice in improving student teachers' teaching skills in Tanzania. *Journal of educational practice. Vol 4* no 1 pp157-164

Komba, S.C. & Mwandayi, M. (2015). Reflections on competence-based curriculum in Tanzania secondary schools. *Journal of education and learning 4* (2), 73

Konyana, S. & Motalenyane, M.A. (2022). A challenging world and a changing teaching practice model for Zimbabwe in a post covid-19 context. *Journal of culture and values in education 5* (1) pp 43-58.

Leyendecker, R.W., Ottenger, W. & Van den Akker, J. (2008).Curriculum examinations and assessment in secondary education in Southern Africa South of the Sahara. The World Bank.

Lotz-Sisitka, H.B., Tshiningayamwe, S., Chikunda, C., Mandikonza, C &Urenje, S. (2019). Sustainability starts with teachers. An ESD action learning programme for teacher educators of ECD, primary and TVET in Southern Africa. Makhanda/Harare: Rhodes university/UNESCO.

Lovren, V. O. (2019). Didactic re-orientation and sustainable development. Encyclopaedia of sustainability in higher education. https://scholar.google.com

Mahere, S.M. (2018).Clinical supervision model: Its role in the professional development of teachers in Zimbabwe. *ZJER Vol 30* no3 pp

Marume, T.(2016).The new curriculum and its implications. Pachikoro.http.pachikoro.

Marais, P. & Meiser, C. (2004). Hear our voices: Student teachers experiences during practical teaching. *Journal of Educational practice vol. 1* (2) pp 220-233.

Moses, L.W. (2018). An analysis of conditions and trends in student teaching in USA teacher development. *An international journal of teachers profile development vol 22* (5) pp 221.

Muyengwa, B. and Bukaliya, R. (2015). Teaching practice assessment: Are we reading from the same script? A case of the development of TD.ZOU: *International journal of research in Human and social studies vol 2* issue 2 pp 53-58.

Nyamudzodza, J., Mthombeni, A., Siziva,., Sifile, O & Manuere, F. (2021). Effectivenss of Continuous Assessment Learning Activities (CALA) by the Ministry of primary and secondary education in Nyanga district, Zimbabwe. *Indonesian Journal of elementary teacher education. Vol 2* no 2 pp 55- 62

Ogegbo, A. Adewusi, E. (2020). CBE IN Africa: Exploring teachers' perceptions. *Teacher education through flexibility learning in Africa Journal vol 2*. https: //doi.org/10.35293/tetfle.v2i1.86.

Okeke et al (2014). Schooling, society and inclusive education: An Afrocentric perspective. Oxford: Oxford university press.

Osketch, M. (2014). Educational policy, vocational training and young in SSA. Wider working papers no 2014/069.

Pedzisai, C., Tsvere, M. & Nkhonde, M. (2014). The Zimbabwean two pathways, education curriculum: insights into policy implementation, challenges and opportunities. *International journal of advanced research management and social science. 3*(5), 162-172.

Rowan, B.(2016).Defining competences and outlining assessment strategies for CBE programmes. Pearson educational inclusion. ISTR 111428-CBE-assessment-wht paper-pdf.

Ryan, A. & Tilbury, D. (2013) "Uncharted waters: Voyages for ESD in higher education curriculum". *Curriculum Journal vol24*, issues2. Special issue pp 272-294.

Ruth, C. & Ramadas, V. (2019). The Africanised CB curriculum: The 21st century strides. *Education, 7*:46-51.

Shava, G. N (2021). Quality education for sustainable development in Zimbabwean higher education in Adeyemo, K.S. (eds).*The education systems of Africa. Global education systems.* Springer. https://doi.org/10.1007/978-3-030-44217-0-6.

Serdenauc, N. 2013. CBE, Implications on teachers' training. *Procedia-social behavioural sciences 76* (1-2):754-758.

Schuck, S. & Aubusson, P. (2013). Teacher education futures: Today s' trends, tomorrow s'expectations. *Teacher development. 17* (3) pp 1-16.

Stigler, J.W. and Hiebert, J. (1999). The teaching gap: Best ideas from the world's teachers for improving education in the classroom. New York: Free Press.

Tshuma, R. &Ndebele, C. (2014). Invest the extent to which assessment practice in Zimbabwe s' 2-5-2 TP systems enhance continuing models of assessment. *International Journal of science 7*(3):733-746.

UN (2022). Sustainable Development Goals. https:/www.un.org/sustainabledevelopment/education/

UNESCO (2005). UN decade of ESD, 2005-2014: The DESD at a glance. UNESCO

UNESCO (2017). The why, what and how competence-based curriculum reforms: The Kenyan experience. https://unesco.org.

UNESCO (2019). ESD: Overview on international frameworks on ESD. UNESCO.

UNESCO (2018). ESD and SDGS: Learning to act, learning to achieve. UNESCO global action programme on ESD.https://en.unesco.org/site/default/files/gap-pn1-esd-and-the-sdgs-policy-brief-6-page-version-pdf.