

The implementation of eSTREAM, a microlearning programme for practitioners and teachers in Early Childhood Care, Education and Development.

By

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1. Abstract

Early Childhood Care Education and Development practitioners and teachers face innumerable challenges. Examining a few quotations as a guideline for expectations and goals across many decades and theorists has created a precedent; however, it has always been the baseline, without a paradigm shift so significant that children are now critical thinkers in collaborative partnerships. eSTREAM was created to fill that gap and create the shift. Early childhood care, education, and development (ECCE/D) management and centres often overlook or fail to address the challenges, despite the large number of creches and ECCE/D centres in rural, semi-urban, and urban areas that struggle with a lack of professionally trained ECCE/D practitioners and fully equipped centres of knowledge and care. Resources are limited, but create opportunities for recycling, tools for teaching, and Learner Teacher Support structures are limited. Entrepreneurial opportunities emerge from foundational education. Recycling, upskilling, and creating opportunities for early learning centres, creches, and babysitting services foster entrepreneurship, even with minimal professional development support. The distinction must be made unequivocally. Practitioners are often unqualified or underqualified, sometimes certified (though not always), and may have only recognition of prior knowledge; they are providers of care. Teaching assistants are not qualified in education, but they provide support to caregivers and facilitate learning through observation and shadowing. In contrast, teachers typically hold undergraduate degrees and have graduated as fully trained teachers. The professional teachers are supported by professional development and SKAVS, which the eSTREAM model aims to amplify within the ECCE/D and Foundation Phase sectors. The Bill of Rights (Goldstone, 1997) and the National Curriculum Statement and Assessment Policy (2005) provide detailed guidelines for all teachers and practitioners. Recently, the Basic Education Laws Amendment Act (Bela) updated the Schools Act (1996).

Grade R has now become compulsory; school attendance must be regular; the language policy authority has shifted to provincial departments; corporal punishment has been banned; and there are stricter rules for home schooling.

Frustration from practitioners in ECCE/D has become a silent scream for delayed recognition of their roles and responsibilities. The politics of finance, funding, and privatisation play a crucial role in the success of ECCE/D learning centres and in the education of practitioners. The cost of training and the demand for ECCE/D practitioners must be consistent. Unqualified and untrained practitioners who mentor and educate children exacerbate the problem, especially considering that the care and mentoring of children in ECCE/D are the bedrock for the Foundation Phase. Clarification for Early Childhood Care Education and Development (ECCE/D) stems from developmental objectives, as children spend their developmental years in childcare and early learning centres (ELCs). The need has grown significantly for professional ECCE/D practitioners and teachers, as parents have careers, are involved in the work environment, and supplement household income. Because of financial pressures from higher inflation. A child's education then falls into the hands of the practitioner and teacher, rather than the parent. Institutionalising education and edification start in the early years. The need for ECCE/D centres has grown significantly as parents are involved in their careers; many are working, and many are from single-parent households. <https://www.statssa.gov.za/?p=13908>. The statistics indicate a disproportionate ratio of early learning programmes to children attending, teaching staff, and children of the age to attend Early Learning Programmes.

Early Learning Programmes (ELPs) Early Learning Centres practitioners
Whole Brain Creativity and Thinking Africanology

2. Introduction

Given the country's historical inequalities, socio-economic disparities, and ongoing efforts to address educational imbalances, the CAPS curriculum has not adequately addressed these discrepancies. ECCE/D encompasses birth to four years, while Grade RR focuses on four-year-olds. The Foundation Phase includes Grades R-3. They form the foundation for lifelong learning and development. Knowledge and practice connect lived experiences with actionable frameworks, creating meaning and shaping futures within a sustainable environment. McNiff (2002, p. 26) states, "action researchers are real people in real situations" who ask the question: How can I improve or change what I am doing?"

In the critical summary of existing literature and assessment of multiple sources, the discussion focuses on current knowledge, theories, research gaps, and methods in the relevant literature within a transformative, socially and professionally relevant context. The purpose, thus, is to summarise, identify, and present the main arguments from my position as the researcher, then introduce and enhance existing knowledge practices with new experiences, knowledge, and ideas in the design and implementation of an eSTREAM model and programme. Evolving curricula and educational paradigms of ECCE/D and Foundation Phase Education in South Africa, examining key policies, pedagogical approaches, and the challenges educators and communities face, draw on contemporary research to highlight the role of ECCE/D in poverty alleviation, the importance of quality provisioning, and the awareness of systemic barriers that continue to affect access and equity. Critical discourses and literature provide evaluation and expository understanding of ECCE/D, shaping the trajectory of South Africa's learners. eSTREAM cannot be argued against or debated with any theory or theorist. But drawing on various frameworks, the creation of a model and programme for practitioners is unique in offering a skills-based opportunity to maximise the benefits of enhancing teaching and learning in ECCE/D. Upskilling and upscaling by capacity building to inspire aspirants to lifelong learning while imparting the best in SKAVS changes the pedagogical framework in ECCE/D ... thus drawing on **Africanology (2024)**, (a word I created as a philosophy to decolonise the ECCE/D curriculum of eSTREAM while including all the principles of African epistemology and entomology), eSTREAM is a unique skills and play-based model offering alternate opportunities to practitioners who cannot upgrade to a tertiary education but still have the passion and aspiration to instil foundational knowledge in childhood education. Words in Africanology included Nommo, the power of the word

ECCE/D and the Foundation Phase must be revised to reflect the latest trends in curriculum transformation, especially for practitioners who require skills development and upliftment. In this synthesised literature review, theories, ideas, different sources, and results have been grouped and then compared. It is intended to present and interpret this study, as well as to interpret previous results and findings and compare them with the present study.

What is the Gap? The research gap is created by the underexplored existing literature in ECCE/D and by limited research or a lack of a structured curriculum to fulfil the needs of practitioners, teachers and learners in the field, leading to knowledge gaps in the current knowledge economy. "The knowledge gap is a common gap in the prior research. There are two settings where a knowledge gap (knowledge void) might occur. First, knowledge may not

exist in the actual field” (Miles, 2017, p.4). In eSTREAM, a new paradigm in ECCE/D, the focus is on varied experiences throughout the programme and model, and on knowledge-based observation of why the gap occurs, how it occurs, and what the eSTREAM model does to enhance and address past deficiencies within the present systems and models available. “Second, it might be the case that the results of a study differ from what was expected [Müller-Bloch & Kranz, 2014]” (Miles, 2017, pp. 5-6). There is no single reality but a multiverse of constructed meanings that are transformative in the gap. However, there is a theoretical gap as well. Miles (2017) explains the theoretical gap as it “deals with the gaps in theory with the prior research”. eSTREAM addresses these gaps by providing training, upgrading, and upskilling for practitioners and teachers in practice and pedagogy.

Within the Gap in ECCE/D, the limiting factors are creativity and innovation in a playful, positive environment with a subliminal metacognition of learning and understanding through play and collaborative practice. Within the interpretive paradigm and ethnography as a humanistic paradigm, the socially and culturally constructed paradigms are both subjective and objective: subjective, based on individual experiences, and objective, based on the previous curriculum and the presentation of the eSTREAM model and programme to fill the gap. The combination of a mixed paradigm is particularly important, based on the evidence of experience and its meaning. eSTREAM is an expanded interdisciplinary education model that builds on STEM and STEAM by integrating robotics and coding, educational and environmental sustainability, and emphasising sustainability, creativity, and real-world problem-solving. It reflects a shift toward holistic, futuristic learning. The evolution from STEM to STEAM to eSTREAM is a dynamic jump into the future of ECCE/D. STEM education, i.e., Science, Technology, Engineering, Mathematics, originated in the early 2000s via the U.S. National Science Foundation. It was more career-oriented in science and technology, fuelling global expansion into techno-savvy, futuristic-thinking individuals who serve the country while pursuing their personal goals, emphasising analytical thinking, problem-solving, and technical skills. STEAM education added Arts to STEM, introduced by Georgette Yakman (2010), to include Arts (visual, performing, and design). STEAM recognised the role of creativity and innovation in scientific inquiry. It encouraged right-brain thinking alongside technical disciplines. STEAM is incorporated as a comprehensive whole-brain creativity and thinking model within the framework of holistic education.

3. Methodology and Discussion

eSTREAM incorporated Reading and Writing within language, literacy and literature. Thus, eSTREAM expands STEAM with robotics, coding, and Education and Environmental Sustainability, emphasising communication and literacy. eSTREAM incorporates Technology, robotics, and coding as core learning areas. Education for Sustainable Development (ESD) aligns with the global Sustainable Development Goals (SDGs), and design thinking promotes human-centred design, critical thinking, and social responsibility. The analysis centres on several interconnected themes that reflect the national curriculum and global best practices for enablers and visioners in ECCE/D and the Foundation Phase in South Africa.

In public and private Early Childhood Care, Education, and Development, the competitive advantage lies in the willingness to pay exorbitant privatised fees versus the desire to provide the best educational opportunities to our young children. Private schools offered more resources, opportunities, and a stable organisational and independent infrastructure. In contrast, learners in government schools were disadvantaged due to limited funds and resources and a disruptive infrastructure, which was often affected by political and organisational disruptions. These gaps lead to competition for knowledge and professional development. Practitioners seek employment at elite private schools, which offer the perks of well-resourced, financially advantaged institutions, whereas public and semi-private schools often lack such facilities. The number of students per class also varies. In private centres, the maximum number of children per class is 25, whereas public schools are overcrowded. Questioning whether modifying an old outcomes-based curriculum would effect change and progress by creating a new programme fosters synergies and a shared experience among the school infrastructure and relevant stakeholders, i.e., teachers, parents, learners, and the school management team (SMT).

The model and programme's value and worth must be in its simplicity and integration into an existing curriculum. **Afrocentrism** is more than a cultural movement—it is a theoretical framework that repositions African people and perspectives at the centre of historical, cultural, and educational narratives. It rips the mental corrosion of colonisation from its roots. It opens opportunities for writing new theories with new theorists in the enlightenment, rather than from the heart of darkness of Africanism, as opposed to Eurocentrism. Therefore, this study builds upon existing theories and phenomena, addressing injustices through reimagining, redressing, and recreating them. Here are some of its key theories and concepts:

Changes must be subtle but forthright, innovative and visionary, welding past knowledge with new knowledge, but the new content must be revolutionary and challenge

existing limiting and outdated systems. The synergy should be reflected in consolidating the programme model and the past curriculum, customising it to the ECCE/D and Foundation Phase, and then connecting the latest knowledge with practitioners, teachers, and learners who are techno-savvy, embracing changes on a 4th Industrial Revolution platform with a 5th Industrial Revolution mindset. Most significantly, community engagement with parents and communities enhances the social-emotional environment through multiple literacies and modalities, and addresses concerns affecting the well-being of children, parents, and practitioners. In ECCE/D, eSTREAM is the Cadence of Imperfection (F. Khan, 2023). Cadence of Imperfection is the rhythm by which children, learners, and students see the world through fresh eyes. Thus, they are design thinkers and Imagineers with EQ (emotional intelligence) and IQ. They are not afraid to ideate, iterate, and learn in the process. They are born design thinkers in their own rhythm, and they do not have to dwell on perfection.

Designing and implementing research are not technical tasks. These implementations dictate knowledge generation, validation, and interpretation. Participatory action learning and research (PALAR) combines action learning and participatory action research in the design. In the cycle of action research, each aspect of planning, action, implementation, observation, and reflection addresses ‘what, why, and how’ of the process of creating, redesigning, and recreating new knowledge for sustainable social change and lifelong learning. This chapter details the programme design and implementation strategy, merging phenomenological inquiry with experiential learning to create a highly divergent model. Real problems in teaching and learning within the ECCE/D community are solved through critical thinking and reflection, collaborative teamwork, and the resolution of complex issues. The study gains credibility and replicability by integrating qualitative depth and breadth and by anchoring data collection tools in existing theories. This study employed a pluralistic methodological framework. Phenomenology, decolonised participatory action research, and experiential learning, using qualitative strategies, are integrated and blended. Through the integration, the research achieves rigour, replicability, contextual relevance, social responsiveness, and decolonial qualities. Wholistic teachers for holistic teaching and learning are the bedrock for Whole Brain Creativity and Thinking (Khan, 2017). Using the Left brain for cognition, design thinking, and logical thinking, together with the Right brain for creativity, innovation, and visualisation, puts knowledge redesign and generation on steroids.

4. Conclusion

The results from four workshops and four cycles of PALAR presented incredible results for eSTREAM. Issues related to gender, gender bias, entrepreneurship, personal and professional development, funding, and free resources for ELCs were identified during data collection and analysis. The need for change is directly related to the lack of curriculum revision for ECCE/D (Last revised in 2018). Early learners are the focal point of foundational knowledge, the bedrock of global citizenship. However, practitioners and teachers must be equipped to address the paradigm shift in global thinking and practice, as well as the role of machine and computational learning in childhood. The present and the future are for Imagineers, innovators, and creatives, and that lies in the hands of the professionals who want to impart knowledge but lack pedagogy and methodology. In the Pedagogy of Ubuntu (F. Khan, 2020), knowledge, education and edification start at the breast of mothers (USIKO) and through play for holistic learners. However, in the knowledge economy in South Africa, we need whole practitioners and teachers for holistic teaching and learning.