



Health Literacy Education in Pre-Service and in-Service Teacher Education in Sub-Saharan African: Gaps and Opportunities

Steve Sider, PhD¹, Sospeter Gatobu, PhD², Esther Brockett¹

¹Wilfrid Laurier University

²Learning for Humanity

***Corresponding Author:** Steve Sider, PhD, Wilfrid Laurier University

Abstract: This paper is the second part of a scoping review to consider the question “To what extent does teacher education in sub-Saharan Africa currently include a focus on health literacy?” The first paper considered an overarching area of the literature related to health literacy. This paper examines the second overarching area of teacher education. Within this area we consider teacher training in health-related aspects, current teacher education efforts on health literacy, and the use of Open Education Resources (OER) to scale teacher education efforts. Conclusions drawn from the scoping review include the need for, and benefits of, investing in competency based education in order to increase health literacy levels within sub-Saharan African countries. Likewise, we discovered a clear need to support and enhance teacher education programs as well as ongoing teacher training in health literacy education. We conclude the review with a discussion of the opportunities for offering teacher training on health literacy through OER.

Keywords: health literacy education, sub-Saharan Africa, Open Education Resources, OER, competency based education, pre-service teacher education, in-service teacher education

1. INTRODUCTION

This paper is the second part of a scoping review that was completed in response to the question “To what extent does teacher education in sub-Saharan Africa currently include a focus on health literacy?” The methodology of the scoping review as well as the key themes for the over-arching area on health literacy was provided in a previous paper [1]. In this paper, we present key themes related to an over-arching area of teacher education in sub-Saharan Africa.

2. OVER-ARCHING AREA 2: TEACHER EDUCATION IN SUB-SAHARAN AFRICA

In order for individuals and communities to develop health literacy, people need to be empowered with knowledge, skills, and resources that enable them to make informed decisions about their lives and the lives of those around them. The most effective way of ensuring this empowerment is through education. According to Bruns and Luque, the teacher is the school level factor with the largest impact on student learning achievement [2].

Teachers play the role of educator, mentor, and often trusted confidant of the learner. However, in order for teachers to be prepared to undertake this responsibility, as well as have the knowledge and skills to engage their students in learning a diverse array of subjects, they need to be sufficiently trained and equipped. Numerous themes were identified as we surveyed the literature on teacher education in sub-Saharan Africa (SSA). We commence with an examination of teacher education programs in SSA and identify the ongoing concerns and issues that pre-service teachers raise around their training. We next highlight how teacher education programs place a strong focus on students developing adequate literacy skills. We also highlight the critical issue of in-service teacher education. This is particularly relevant in SSA since thousands of teachers in this region have never completed formal teacher education programs. We touch on the challenges of gender equality and education, especially as many girls and young women face unequal access to education. We draw attention to opportunities and challenges for health literacy education based on previous work within sexual health and HIV/AIDS education. Finally, we consider the limited health literacy education programs that have taken place in SSA. In the conclusion, we consider how Open Education Resources (OER) can serve as a tool to integrate teacher education and health literacy education.

3. MAJOR THEME 1: TEACHER EDUCATION IN SUB-SAHARAN AFRICA

In order to ensure that students are receiving the education and training they need to achieve sufficient levels of health literacy, it is necessary to look at those responsible for delivering education and training: the teachers. An education system is only as good as the teachers working within it, and teachers are the key in supporting students to meet the goals of the education system, including the health literacy goals [3; 4]. To best understand how teachers develop their skills, it is important to consider the teacher education systems because “the quality of teachers therefore is determined by the teacher education regiment experience that a prospective teacher goes through” [3]. Teacher education programs have the opportunity to provide effective, practical, and relevant education to pre-service teachers in order to equip them with the skills they need to provide a high quality of education to their students.

Unfortunately, many countries around the world face a shortage of teachers and those in sub-Saharan Africa have the greatest lack of trained educators [4]. For example, “70% of Sub-Saharan Africa countries face acute teacher shortages, rising to 90% at secondary levels” [4]. Likewise, “one third of existing teachers are unqualified or under-qualified” [5]. As a result, many of the children who attend school leave without adequate literacy or mathematics skills, let alone with sufficient levels of health literacy [4]. A study which focused on the preparedness of literacy and language teachers in SSA reported that the majority of these educators were not prepared when they first started to teach [3]. These educators felt unprepared for a variety of reasons, but the most significant reason was a gap between their training and the realities of school life and the curriculum that the new teachers were expected to use[3].

In Cameroon, some pre-service teachers have expressed dissatisfaction with teacher training programs [6]. Wohlfahrt reports that pre-service teachers see a disconnect between the theory they were taught in teacher education programs and the realities of the classrooms they entered as new teachers [6]. Similarly, students in the teacher training program at the University of Zambia testified to their frustrations with the focus on theory and the lack of opportunity to gain real life experiences in classrooms [7]. A startling 64% of students interviewed expressed the perception that the material they learned in a particular course was irrelevant once they entered classrooms [7]. These studies highlight the clear need for teacher education programs to reassess the content and quality of their education program and consider how best to prepare pre-service teachers for the realities they will face in schools.

Government and non-governmental organizations are attempting to address these challenges with enhanced teacher training. One program, a partnership between UNESCO and the Government of China, working in sub-Saharan Africa, focused on equipping both pre-service and in-service teachers with IT skills. By working with teacher training institutions in these countries, the project improved the capacity of these institutions as they were able to equip their students with relevant and effective skills in the area of IT, which they in turn could pass on to their students [8].

Another initiative, Teacher Education in Sub-Saharan Africa (TESSA), focused on helping teachers gain real life experience and practice with the situations they would confront in classrooms [5]. In addition to enhancing the experience of students in teacher training programs, the TESSA program also offers subject-specific OER which both pre-service and in-service teachers can access. A highlight of these resources is that they are authored by scholars from SSA and are context sensitive, making them more relevant than OER or other educational initiatives that are geared toward Western audiences[5].

In a similar recognition of the importance of a practical component to teacher education, the Zambia Education Curriculum Framework, released in 2013, highlights key reforms in teacher education programs, including one year of course work and one year of practical experience in classrooms [9].

4. MAJOR THEME 2: TEACHER EDUCATION PROGRAMS’ FOCUS ON LITERACY

When considering how to improve education in SSA, most leaders appear to focus on the need for improved literacy education. As one researcher stated, “literacy should be the main focus if any improvement in the education system is to be done” [3]. Numerous projects between SSA countries

and international partners also focus on literacy. For example, the Time to Learn project in Zambia focuses on increasing student reading levels, with programs designed to help learners improve as well as equip teachers with the skills and resources to facilitate their learning [10].

Transforming Teacher Education, another program in Zambia, sponsored by USAID, likewise focused on primary student literacy and has trained over 20,000 primary school teachers and distributed nearly five million teacher guides, textbooks, and reading materials [11]. The purpose of this initiative is to ensure that teachers have the resources required to effectively teach children how to read, clearly emphasizing the importance placed on these literacy skills from a student's early education and beyond [12]. Evidently, the general consensus is that the focus of education systems within these SSA countries should be improved reading and writing skills.

The focus of educational systems on literacy is also evident in the curriculum materials released by governments of these countries as well as in the focus of their teacher training programs. For example, in the *Zambian Education Curriculum Framework*, a series of 13 goals are outlined for their new curriculum, many of which relate to literacy for people of all ages [9]. Likewise, the framework outline a set of desirable attributes or characteristics that learners will develop, which once again include a focus on literacy skills. In order to achieve these literacy goals, the teacher training programs in these countries must also focus on preparing their teachers to achieve them [3]. This is evident in the focus of these programs. For instance, in a document outlining courses offered at teacher training colleges in Cameroon, teachers take several courses related to language and literacy, more so than any other subject [13]. If education systems are to achieve high literacy rates, they must provide support for this via both pre-service and in-service teacher training.

5. MAJOR THEME 3: IN-SERVICE AND PRE-SERVICE TEACHER TRAINING

Teachers are responsible for ensuring that the expected learning outcomes of a curriculum are achieved. In order for teachers to be successful in doing so, governing bodies need to provide them with the knowledge and skills to succeed, both through effective initial, and meaningful ongoing training opportunities. While pre-service teacher education is critical there is also a significant need for governments to invest in in-service teacher education. This is the stage where teachers learn most of their skills and where they will engage with significant problem-solving [6].

One key reason for governments to invest in in-service teacher education is the simple fact that many teachers have never completed a pre-service teacher education program [14]. In recognition of this situation, governments in SSA countries have started to focus on in-service teacher education in an effort to both improve teachers' classroom practice and enable teachers to upgrade their qualifications [14]. Unfortunately, despite these governments' good intentions, "Policy on INSET [in-service education for teachers] is generally fragmented and more often than not simply non-existent" [14]. Challenges to implementing effective in-service teacher education includes a lack of financial commitment to these programs as well as the tendency for governments to prioritise pre-service programs [14]. While there are many limitations to the current opportunities for in-service education, ongoing efforts to invest in this area will result in more meaningful opportunities for teachers to enhance their own abilities.

In addition to making effective use of existing resources, such as collaboration between teachers in a school, in-service teacher training needs to focus on integrating new information, concepts, and ideas with the day-to-day experiences of teachers. To address this need, curriculum documents highlight the importance of offering training to teachers on relevant issues. For example, the *Zambian Education Curriculum Framework* states that in-service teacher education will be driven by "identified societal needs" [9]. In-service teacher training can also result in improved outcomes in particularly sensitive topic areas, such as sexual health education. A study in rural Tanzania demonstrated that teachers who received ongoing training in sexual health education were more likely to prioritize integrating this topic into their teaching and ensuring students were developing critical skills in sexual health literacy [15]. Clearly ongoing teacher education provides opportunities for teachers to enhance their skills and knowledge in areas that are critical to their students' success and well-being, including that of health literacy.

6. MAJOR THEME 4: EDUCATION AND GENDER EQUALITY

As with many aspects of life in SSA, gender inequalities exist within education. For example, in Cameroon, the overall level of youth literacy is 83.8%, whereas the level of female youth literacy is 60.1% [16]. This significant difference, of over 20%, between levels of male and female youth literacy will likely carry over into adulthood, thereby impacting access to higher levels of education as well as careers. In addition, about 14.2 percent of adolescent girls become pregnant each year and leave school in Cameroon, increasing the gender imbalance between young men and young women who are receiving higher levels of education.

Attempts are being made to address the gender imbalances in education and to raise awareness of the systemic problems within education systems that contribute to these disparities. For example, the Zambian Education Curriculum Framework discusses the law passed in 2000, called the National Gender Policy, which indicates that “all curricula materials highlight matters which are gender responsive and promote equity of access to education” [9]. Similarly, in Cameroon, teachers are receiving training in “gender balanced teaching” but the transition to this form of teaching is slow and generally not endorsed by the government [16]. There is much more that can and should be done to address these ongoing imbalances in gender, and one way in which they are being addressed is through lessons learned from HIV/AIDS education.

7. MAJOR THEME 5: TEACHER TRAINING IN HIV/AIDS EDUCATION

The HIV/AIDS epidemic has been one of the biggest challenges facing countries in SSA. The ability of teachers to educate children and youth on HIV/AIDS is an opportunity that must be seized and built upon at every opportunity. A recent study found that most teachers indicated that they needed to have not only a solid foundation of knowledge about HIV/AIDS but also the skills to effectively disseminate this knowledge to their students as well as parents and community members [17]. In order for teachers to be capable of engaging in these critical communications, they must be sufficiently trained themselves and have access to appropriate curriculum [17]. Unfortunately, there are currently many barriers to incorporating effective HIV/AIDS education in teacher training programs, including a lack of properly trained teacher educators who can train others on this topic and the tendency for other, more well recognized subjects to take precedence in teaching and testing in these programs [18]. Evidently, if teachers are to have a strong foundation in HIV/AIDS education, changes will have to be made within the teacher training programs.

Regardless of the availability, or lack thereof, of HIV/AIDS education courses in teacher training programs in SSA, there are other ways for teachers to gain confidence and skills in helping their learners engage with these issues. While challenges such as AIDS fatigue and hostile community reactions can discourage schools and teachers from investing in HIV/AIDS education, collaboration between teachers and school leaders can result in meaningful change [18]. For example, a study found that when principals and teachers at a school engaged in “investigative and reflective activities” in the contexts of their own schools they would become “strongly motivated to provide proactive leadership in the fight against HIV and AIDS – and to provide care and support to HIV infected/affected learners and colleagues at their schools” [18].

Another study that looked at using participatory visual methods to engage with HIV/AIDS issues likewise discovered that having space to engage in reflection and discussion within the school context resulted in teachers who were more able and willing to engage in these topics with their students [19]. In yet another study, it was demonstrated that in-service teacher training around sexual education resulted in teachers whose “knowledge, attitudes and perceived self-efficacy” to teach subjects in this area, including HIV/AIDS, were significantly improved [15]. The experience with HIV/AIDS education in SSA provides important lessons for health literacy education.

8. MAJOR THEME 6: TEACHER EDUCATION ON HEALTH LITERACY

As previously discussed, most teacher education programs in SSA for both pre-service and in-service teachers, tend to focus on traditional aspects of literacy. When issues on health arise, with questions on training teachers to adequately address health in their classrooms, the focus within these countries tends to be on sexual health and HIV/AIDS education. Outside of education related to HIV/AIDS, there appears to be minimal emphasis on health literacy in teacher education programs in SSA.

Teachers and principals, as the key leaders and role models within a school, have a critical role to play in demonstrating the value and impact of health literacy skills [20]. However, this importance is not reflected in teacher training curriculum documents. For example, in a teacher training document in Cameroon, there are 10 specific subjects listed for pre-service teacher training. However, health education is not included in this list [13]. Likewise, while the Zambian Education Curriculum Framework states that it intends to train teachers such that they can instill the skills in their students to live healthy lives, there are no details about what this training would constitute, and no reflection of courses that adequately address this area in the teacher training curriculum. While the Zambian government clearly states that it plans to prioritize the health and well-being of the children and youth, the actual implementation realities appear to be somewhat different. However, when given the opportunity to improve their own health literacy skills, as with their HIV/AIDS education knowledge, the result is teachers who engage in greater reflective practice and who feel empowered to live and speak to their own experiences and engage with their students in theirs [21]. Therefore, it is clearly necessary to continue to focus on training teachers in the area of health literacy so that they can equip their students with these skills that are critical to their health and wellbeing.

International agreements for development such as the Sustainable Development Goals have recognized the critical role of teachers in ensuring equitable, inclusive, and quality education. Based on our scoping review, it is clear that health literacy has not been a core component of pre-service or in-service teacher education in sub-Saharan Africa. This is a significant barrier to improving health literacy outcomes. Open Education Resources provide an excellent opportunity to address these gaps in both pre-service and in-service teacher training.

9. OPEN EDUCATION RESOURCES FOR HEALTH LITERACY TRAINING

One of the key findings from the scoping review is the importance of having tools to scale education. The use of technology offers increasingly important ways to scale teacher education. COVID-19 has accelerated the use of technology in all human activities including in education. The ability to integrate technology in teacher education is an important competency for teachers. UNESCO recognised this and developed the ICT Competency Framework for Teachers (UNESCO, 2018) for use in teacher training and development. One way in which competencies in the use of technology can support health literacy education is via Open Education Resources [8]. OER offer a means to ensuring that the content of teacher-development programmes are inclusive, and allow for mainstreaming of content in classrooms, to the ultimate benefit of the learner [22].

An initial review of Open Education Resources, particularly Massive Open Online Courses (MOOCs) specifically developed for SSA, revealed a distinct gap in courses on health literacy topics (see Table 1). We identified that some OER exist that support teacher education but content on health literacy is largely non-existent. Our review identified some very specific areas of training related to health literacy but, for the most part, the resources were either not holistic, complete, or relevant.

Table 1. *OER and teacher training regarding health literacy in SSA*

Open Education Resources for SSA that were identified in the Scoping Review
<ul style="list-style-type: none"> • https://www.oerafrica.org/oer-courseware: OER available in Africa but non related to health literacy for teachers; some courses are targeted at those studying health related degrees • Edx.org: https://www.edx.org/ - a large database of courses, quite a few programs and courses related to health areas such as nutrition and disease • https://www.elearning-africa.com/: Their purpose is to “showcase and support sustainable education solutions and improve access to relevant information, education and training, in order to drive economic and social prosperity.” However there do not appear to be any resources on health literacy. • https://www.ajol.info/index.php/ajhpe/article/view/69934 : “OER has the potential to advance the delivery of health education by increasing the availability of relevant learning materials, reducing the cost of accessing educational materials, and stimulating the active engagement of teaching staff and students in creating learning resources”

We were able to identify some relevant MOOCs on health topics, such as nutrition and food advertising. However, these courses are set in a Western context and are likely rather irrelevant for the health situations and contexts in sub-Saharan Africa. It is our conclusion that there is need for

increased OER on health literacy designed for the sub-Saharan Africa context. Courses and resources on this area, whether first of their kind or adding to an existing body of material, will only increase the chance of teachers and other educators within these countries having sufficient training and skills to help their students increase their levels of health literacy.

It is also important to note that the effect of COVID-19 on education and learning has been profound and unprecedented. Due to the pandemic, 80% of the world's learning population has been affected by school closures, and many countries are in lockdown to reduce transmission. An important shift has taken place as a result of COVID-19. The closure of schools has made remote learning and homeschooling as primary alternatives for traditional schooling. The shift also coincides with the larger shift to competency-based education in many education systems. CBE involves all the stakeholders in the learner's education journey, and parents are expected to play a more active role. Sedibe and Fourie (2018) suggest that parental support boosts children's learning and that the support plays an essential role in their children's academic success [23].

This presents an opportunity to equip parents with the knowledge and skills to play an even greater role in all the areas of the curriculum. Some parents have the time, the resources, and the pedagogical skills to educate their children at home. However, many do not. As well, just like teachers, parents may need regular training to be up-to-date with current education and approaches (for example, continued professional development). Other parents are new to teaching, and may need initial training. Here again, OER may serve an important function. OER can be available for use in contexts where there are limited opportunities for traditional teacher-led classes. Not only can teachers build their teaching skills via OER but these can also be available for parents, thus scaling the opportunity for health literacy to be further implemented in teaching and learning contexts.

10. CONCLUSIONS

This scoping review has provided an overview of major themes around health literacy and teacher education in sub-Saharan Africa. The results of this review demonstrate the importance of helping populations develop higher levels of health literacy in SSA. Our examination of teacher education within sub-Saharan Africa found that teacher education training and programs had minimal to no specific focus on preparing teachers to equip their students with health literacy skills. There is a distinct gap between governments' declared national priorities of developing health literacy skills in their populations and the reality of educators. Teachers are often underprepared to teach core subjects such as literacy and even more unlikely prepared to teach health literacy.

This review also found evidence of some successes in HIV/AIDS education programs. The lessons learned from these programs could be incorporated into teacher training related to health literacy. Therefore, our review concludes that there is a clear need to mainstream health literacy education at both the pre-service and in-service stages, including specialized training in health literacy.

Having clearly identified the need to increase training in health literacy for teachers, the question then arises as to how best to deliver this training. A potential resource for this training of both pre-service and in-service teachers is Open Education Resources. As noted, our review found a gap in OER that address health literacy. Thus, there is a significant opportunity for local, national, and trans-national organizations to address this gap by supporting the development of OERs that can be used in pre-service and in-service teacher training in SSA to foster health literacy.

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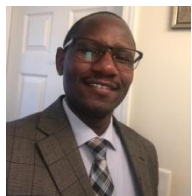
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AUTHORS' BIOGRAPHY



Steve Sider PhD, is Associate Dean, Professor, and Director of the Centre for Leading Research in Education at Wilfrid Laurier University (Waterloo, Canada). He has a PhD from Western University (London, Canada).



Sospeter Gatobu, PhD is the Director of Research, Monitoring and Evaluation and Learning (R, ME&L) and the Kenya Country Director at Learning for Humanity (Waterloo, Canada). He is a Visiting Scientist at the University of Nairobi Kenya. He has a PhD in Public Health from the University of Waterloo, (Ontario, Canada), a Master of Arts (Communication) from Daystar University (Kenya), and a Bachelor of Education from Kenyatta University (Kenya).



Esther Brockett, holds a Bachelor of Education and Honours Bachelor of Arts degrees in Biology and Global Studies from Wilfrid Laurier University (Waterloo,, Canada). She is pursuing a career as a teacher at an international school in South Korea and looks forward to extending her expertise in special education within an international context.

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