

COLLABORATIVE ACTION RESEARCH

**COLLABORATIVE ACTION RESEARCH IN A COMMUNITY OF PRACTICE TO
NURTURE SOCIOCULTURAL TEACHING INNOVATIONS AMONG TEACHER
EDUCATORS IN GHANA**

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Thesis submitted to the University of Ottawa
in partial fulfillment of the requirements for the
Doctorate of Philosophy in Education

Faculty of Education

University of Ottawa

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Abstract

This thesis describes three (3) action research (AR) cycles I conducted in collaboration with my co-participants in Ghana's colleges of education. The focus of our collaboration was to nurture creative and innovative teaching strategies for education on HIV/AIDS and other emerging health issues. It has become necessary to engineer this bottom-up approach to learning and research because we see the current way of teaching and learning in Ghanaian schools as mere regurgitating of information and reproducing same in examination without meaningful change in behavior. This assertion was reiterated by Ghana's minister of education, Dr. Yao Osei Adutwum when he addressed delegates at the just ended United Nations General Assembly on September 26, 2022. He says, "[y]ou can't memorize your way out of poverty but you can critically think and innovate out of poverty." My co-participants and I are of the view that many people will continue to die from HIV/AIDS if teachers continue to teach by encouraging students to memorize factsheets to reproduce in examinations. The action research described in this thesis seeks to empower teacher-educators in Ghanaian colleges of education with useful pedagogical and research tools. The long-term goal – beyond the timeframe of this thesis – is for them to train new teachers to be confident, bold and assertive to push cultural and systemic boundaries, to nurture equally assertive students to deal with health challenges (pandemics) which they may be confronted with. Methods used to gather data included focus group interviews, observations of lesson presentations and reflective notes (journals). The design of this research was, partially impacted by the COVID-19 pandemic. The findings, however, still proved to be interesting. Among those findings were strong teacher educator participation and a significant improvement in teacher educators' understanding and employment of SCT teaching strategies suited to their *HIV/AIDS and Other Tropical Diseases in Africa* classes.

Acknowledgements

First, I would like to express my deepest gratitude to my thesis supervisor, Dr. McMurtry Angus for providing me with unwavering support, wise counsel and feedback throughout my doctoral journey. You encouraged me to keep pushing and never give up, even when Ghana's scholarship secretariat failed to respond to my financial assistance request for the fieldwork in Ghana. I would also like to extend my sincere gratitude to my thesis committee members: Dr. Richard Maclure, Dr. Ruth Kane and Dr. Stephanie Arnott. I appreciate your insights, expertise, time and efforts you invested in my doctoral journey. I am grateful for your contributions.

I am eternally grateful to Mr. Robert Ogilvie's Airlie Foundation for financial assistance for my doctoral studies. I could not have gotten this far without the financial support from the Airlie Foundation's award for Health Education. Again, my appreciation goes to Rev. Fr. Walter Mawusi Agbeto of the Ho Diocese in Ghana, Comfort Addai (Mama Kormla Teng II of Kpando Aloyi, Ghana), Pat Brett (Greenbelt Baptist Church, Ottawa), and Diane and Ron Mabee (Greenbelt Baptist Church, Ottawa) for your financial, emotional and spiritual support.

Finally, I would like to thank my co-participants from St. Francis College Education and St. Teresa's Colleges of Education in Ghana for willing to take part in this collaborative research study. Our collective resolve to spark a conversation on a community-of-practice, bottom-up approach to learning, research and change in teacher education in Ghana gave me the motivation to continue this study with you. Thank you! Akpe nami!

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Chapter 1: Introduction

Collaboration to build community of practitioners

Knowledge is like a baobab tree; no one individual can embrace it.

(African proverb)

The complexity of problems in Ghana's education sector demands synergy between different kinds of expertise rather than a singular solution imposed in a top-down fashion. There is a need to shift from traditional approaches to problem solving towards more collective approaches, such as those described in sociocultural theory of learning (SCT), community of practice (CoP) and action research (AR). In the past decades, these concepts have gained ground in education to explore how learning occurs beyond the individual level in complex and dynamic social settings

To provide a brief historical context, formal education in Ghana began in the pre-colonial era by missionary activities in relation to the teaching and learning of the Bible as well for commerce. The western-style education system of Ghana is largely a legacy of the Christian missionaries and European merchants (Antwi, 1991), which is further entrenched and reinforced by successive colonial and post-colonial governments. In spite of several educational reforms since the 1920s, Ghana's formal education system remained Western and predominantly academic and elitist, because it is heavily examination-based and favors the more academically prepared students (Dzobo, 1987). To date, there has been not been a deliberate effort to nationalize Ghana's education system, in order to better reflect its cultural, historical and developmental realities – as

in the case of Japan and Malaysia. This research attempts to begin conversations on pushing culturally appropriate forms of instruction to the centre of the education system in Ghana and other African countries. We hope that the conversation will lead to reengineering the education system, not only teaching strategies, to reflect the ethos and the developmental goals of the country.

In light of the above, the research described in this thesis sought to generate, through collaborative AR, empirically grounded insights into the outcome of SCT-inspired teaching strategies in Health and HIV/AIDS education in colleges of education (COEs) in Ghana (UNESCO, 2008).

This research employs concepts of SCT, CoP and AR that are relevant and timely for improving upon teacher education at a time when key policy reforms are being introduced in COEs in Ghana, specifically the decision to offer a four-year bachelor of education (BEd) degree.

As part of the reforms in COEs in Ghana, teacher candidates are required to pursue ‘action research’ projects in their final year of training. While the aim of changing educational practice for the better is certainly laudable, this ‘educational action research’, from my experience as a former teacher educator, was usually not carried out in a systematic manner or in accordance with all recognized AR principles.

This situation is unfortunate, as I believe that AR can offer an excellent methodology for bringing about positive educational and social change, context-sensitive knowledge, and democratic community empowerment in Ghana and other sub-Saharan African (SSA) countries. This is especially true if AR is combined with SCT and CoP that suit AR’s focus on relevant praxis problems, local expertise and collaboration among key stakeholders.

As we shall see in the actual thesis, I demonstrated how compatible and useful these concepts were in this research.

1.1 Thesis Structure

Theoretically, this thesis follows an AR spiral of reflection, planning, action and observation, followed by further reflection, planning, action and observation, and so on. The spiral process is used to organize the structure of this thesis, although in reality not everything that happened during the research process fits the spiral process seamlessly.

Chapter 1 introduces this research study by providing a brief overview of the study. It also lays out the structure of this thesis.

Chapter 2 discusses literature reviews that offer the theoretical bases for the current study, specifically sociocultural theory, communities of practice and action research.

Chapter 3 focuses the current study. It discusses the rationale, the research problems, conceptual framework, and the epistemological sensibilities that informed theory for this study. It also discusses the methodology, focussing on the research site, participants, the method used for data gathering, the research plans and data analysis.

Chapter 4 offers a description of the first AR cycle, in which I collaborated with teacher educator co-participants to critically, examine current teaching strategies in HIV/AIDS curriculum in the COEs in Ghana.

Chapter 5 deals with the second AR cycle, in which I collaborated with my co-participants to explore how new SCT-based teaching strategies might be incorporated into their HIV/AIDS education lessons. In this cycle, I facilitated the process to help my teacher-educator co-participants integrate the 'new' SCT-based teaching strategies into their lessons. As we shall

see later, the integration of the ‘new’ SCT-based teaching strategies by the participants was enacted in three trials. The aim of experimenting with the SCT-based teaching strategies in a community of practice fashion was to support the participating teacher educators to improve upon practice and become experts in their field of specialization as teacher educators.

Chapter 6 focuses on the third AR cycle and discusses the widening effects of the AR in relation to the CoP established. In this cycle, I discuss plans my co-participant and I have made after data gathering in Ghana to sustain and expand the CoP. I also discuss the activities we have carried out so far and the results we anticipate to achieve.

Chapter 7 reflects on themes that emerge from the research process. With the help of NVivo coding, I have delineated key findings from the research process for reflective discussion under this chapter.

Finally, chapter 8 articulates the conclusion, limitations, and future research plans.

Chapter 2: Literature Review

The purpose of this chapter is to describe and synthesize literature relevant to this study. I review literature on sociocultural theory of learning (SCT), communities of practice (CoP) and action research (AR) – which are relevant to this study. First, I examine literature on SCT, exploring its main principles. I also probe into the zone of proximal development (ZPD) as a concept related to SCT. Second, I evaluate literature related to CoP, examining its main principles. Third, I analyse literature on AR, delving into its key principles. Furthermore, I discuss a couple of AR studies in sub-Saharan Africa as well as AR challenges in the context of this study. Finally, I discuss how the three theoretical concepts – SCT, CoP and AR – are compatible in the context of this study.

2.1 Sociocultural Theory of Learning (SCT)

Sociocultural learning theory (SCT) – with Lev Vygotsky as its original and most prominent theorist – views knowledge and learning as originating from social processes (Vygotsky, 1987). According to this theory, learners tend to construct knowledge through their interactions with each other and their environment. SCT frames learning and knowing in a way that focuses on collaboration, practical problem solving, researcher engagement, and situational understandings. These ideas are, philosophically, compatible with communities of practice and action research.

2.1.1 Main Principles of SCT

In this section, I listed and discussed the main principles of SCT namely: i) learning and knowing are first social, then individual; ii) individual learning (internalization); iii) cultural

tools mediate learning; iv) language as the most important mediating tool). I also describe the zone of proximal development (ZPD), a learning theory that closely linked to SCT.

2.111 Learning and knowing are first social, then individual

Vygotsky articulated the dynamic interdependence between the social and the individual processes of learning, whereby the individual's development is embedded in, and shaped by his/her social world (Davis, 2004). Vygotsky believed that learning is first collective, embodied in the social practices of the community, and that society is the bearer of the cultural heritage without which the development of the human mind is impossible (Davydov & Kerr, 1995). SCT suggests that it is impossible to separate individuals from their social influences, and that learning is culturally and contextually specific (Kim, 2016). In simple term, social learning and individualistic learning mutually support each other and they need not be seen in dichotomous or oppositional terms.

2.112 Individual learning (internalization)

From an SCT perspective, internalization does not mean that learners "take in" information. Rather, in line with constructivism, they individually construe the meaning of social practices and interactions (Davydov et al., 1995). Nonetheless, these social interactions and practices provide the fundamental structure for such individual construals. Language is one important example of how social practices are internalized through the process of socialization (Vygotsky, 1978). For example, for young children, language starts as a purely social process, with sounds used to mediate interactions with others. Later children engage in "private speech" to regulate their own activities. Eventually, the speech becomes silent as children grow older and learn to think using language structures (Ormrod, Saklofske, Schwan, Andrews, & Shore, 2008). Human thinking therefore does not occur in isolation, but rather through social practices

and interactions (Davydov et al., 1995). Children participate in the language of their parents, as well as other embodied activities - cooking, games, and so forth - which they later internalize and apply on their own. These embodied activities they have internalized help them to interact, learn and make sense of the world (Adams, 2006).

2.113 Cultural tools mediate learning

Another main principle of Vygotsky's theory is the assertion that cultural tools mediate cognitive development. SCT emphasizes the importance of culture and context in understanding what occurs in society and knowledge is constructed based on this understanding (Davydov, et al 1995). Tools recognized in sociocultural thinking include language, mnemonic devices, algebraic symbol systems and computers (among others) that help learners to internalize concepts (Lantolf & Thorne, 2009). Adults such as parents and teachers can serve as mentors participating with learners to facilitate their internalization of these cultural tools (Davis, 2004). For example, teachers introducing a mnemonic device in a science class to help students internalize concepts. For Vygotsky, the culture of the learner gives him or her cognitive tools needed for development (Vygotsky, 1987). Vygotsky (1987) viewed language as the most powerful psychological tool for mediating higher mental functions. According to Vygotsky (1987) language is the means by which adults (parents and teachers) bring children into many cultural norms and practices. It is also a powerful tool for intellectual adaptation (Arnott, 2015; Lantolf et al., 2009).

2.12 Zone of proximal development (ZPD)

Zone of proximal development (ZPD) is a key proposition of Vygotsky's SCT. ZPD refers to the gap between what the learner can do alone, and what the learner can do with guidance (Vygotsky, 1987). Vygotsky defines ZPD as "the distance between the actual

developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (1978, p. 86). Vygotsky (1987) suggests that teachers can use, for example, cooperative learning exercises where less competent children develop with help from more knowledgeable others such as peers, teachers and parents - within their ZPD.

In the context of SSA, Tchombe, (2007) describes how Bamiléké culture in Cameroon encourages the development of children through the concept of 'siblings tutoring'. Pence & Nsamenang (2008), also observe that not only elder siblings and peers (who are more competent) but also adults serve as mentors in children's ZPD in African societies. However, the challenge, according to Pence et al., (2008), is how to organize the school curricular to permit child-to-child mentoring.

2.2 Communities of Practice (CoP)

Communities of practice (CoP) approaches to learning are inspired by Vygotsky's SCT and place a major emphasis on social processes involved in learning. CoP focuses on how all learning is situated within particular social groups and practices (Lave & Wenger, 1991; Wenger, McDermott, & Snyder, 2002). Lave et al (1991) assert that CoP offers a social, rather than an individual, cognitive perspective on learning.

CoP, was introduced by Lave and Wenger in the early 1990s. Lave and Wenger noticed that learning is not just a novice-expert relationship but a relationship with a whole community of people (Lave et al, 1991). Members of CoP share their experiences and tacit knowledge, improving their competencies and nurturing learning (Agrifoglio, 2015). Within CoPs, members share a concern or passion for something they do and strive to learn how to do it better as they

interact regularly. The body of knowledge and methods used by a community in its practice assist its members to improve upon practice. CoP members tend to explore ideas, talk about their needs, and help each other solve problems. I must point out that CoP concepts have been used in studies in SSA, for example in Sierra Leone (Maclure, 2006) and in South Africa (Maritz, Visagie, & Johnson, 2013; Islam, 2012).

Studies that use CoP as a framework have the potential to provide communities (such Health and Physical Education (HPE) practitioners in COEs in Ghana) with both a supportive space and social context to negotiate challenges and improve upon practice. Bitzer (2010) makes a case that even though CoP offers great potential for staff development through informal learning in collegial groups, the concept of CoP needs further research since it has received very little attention within higher institutions of learning in SSA. Islam (2012) adds that there is need to explore the larger impact of CoP on individual members through a more sustained and full scope CoP research studies in Africa. I am wholeheartedly supportive of the points made above and suggest that it was useful to promote the idea of CoP in academic departments in this study to explore more about the concepts and its dynamics within COEs in Ghana.

One of the major challenges for the cultivation and growth of authentic and sustainable CoP in SSA is the over-reliance on institutional support (Ngulube, & Mngadi, 2009). This study helped local teacher educators in nurturing an informal, organic, grassroots CoP to design change themselves rather depending on institutional, “top-down” approaches that are largely unsustainable – from my personal experience as a beneficiary of staff development programs a decade ago in Ghana.

2.21 Key principles of CoP

CoP provides a number of key principles for research on learning. The four principles most relevant to the study proposed below are: learning is always situated; the importance of participation in authentic social practices; individual learning occurs through legitimate peripheral participation; and value creation.

2.211 Learning is always situated

The concept of situated learning articulated by Lave and Wenger is based on Vygotsky's assertion that learning is an inherently a social process. Situated learning is a way to understand learning as a social process more than an individualistic mental dynamics (Lave et al., 1991). Learning usually depends on the activities, context and culture in which it occurs (Smith, 2003). In situated learning, it is the authenticity of the context in which the learning occurs that helps individuals make meaning of events in their environment and allows them to apply it in new situations (Billett, 1996). Lave et al. (1991) assert that a group's practical knowledge is situated in relations among members, their practice, and the social organization and political economy of CoP.

2.212 The importance of participation in authentic social practices

Traditionally, learning is assumed to occur through individual transfer and acquisition of information, for example, via books and lectures. In contrast, social learning within the context of CoP supports the idea that learning takes place as people attune themselves to others, to authentic social practices, and to their wider social contexts (Rogoff, Paradise, Arauz, Correa-Chávez, & Angelillo, 2003). Authentic social learning experiences tend to help learners to be adaptable and creative thinkers who utilize their skills and knowledge to create solutions to problems beyond the classroom. By giving learners the opportunity to learn through authentic -

real life, relevant - learning experiences, they are being guided to apply their learning, to learn through doing, and to adapt successfully to changes in their environment (Bleakley, 2010). At a collective level, learning is also embodied in changing social practices (McMurtry, Rohse, & Kilgour, 2016). In this situation, a learner's role gradually changes from being a beginner to an expert as he or she becomes more active and immersed in the social learning community (Wenger, McDermott, & Snyder, 2002). Social approaches to learning encourage group engagement in cooperative activities to reflect on and challenge previously held assumptions.

2.213 Individual learning occurs through legitimate peripheral participation

CoP was initially proposed to describe the way novices or apprentices within CoP learn as they gradually take on roles that are more central. The concept of apprenticeship is a process whereby individuals, through socialization and participation in the activities of a community, start from a peripheral position, get legitimated by other members and develop competencies and move up into the middle to become experienced old timers (Davis et al., 2008). This transformative and reciprocal process of apprenticeship tends to offer members of a community space for continuous growth (Lantolf, et al., 2009). This process often takes place informally through social interaction, rather than by a planned or mechanistic process of cognitive transmission. Supportive and accessible CoPs tend to be associated with authentic, motivated learning of what is needed to be learnt and mastered (Lave et al., 1991).

2.214 Value Creation

Wenger and his more recent collaborators have introduced the concept of 'value creation stories'. Value creation describes and assesses the nature of social learning in a CoP and what value is created because of CoP members' activities and in their interactions with others in informal networks (Wenger, Trayner, & de Laat, 2011). These individual and collective

narratives weave together learning indicators such as relationships developed, resources used and project outcomes. Rather than attempting always to define what constitutes valuable learning ‘in advance in the form of predictable or measurable outcomes,’ Wenger et al. posit, one should collaborate with participants to ground learning assessments in their actual contexts, activities, negotiations, experiences and perspectives, using both quantitative and qualitative indicators as appropriate. The primary beneficiaries of this value are participants of a CoP, but the value may also benefit other stakeholders, such as the institutions in which CoP operate.

2.3 Action Research

AR is a form of practitioner research where there is a professional intent to intervene to improve practice in line with values that are rational and just, and specific to the context (Carr & Kemmis, 2009). Historically, the term “action research” has been associated with the work of Kurt Lewin, who viewed AR methodology as cyclical, dynamic, and collaborative in nature (Mills, 2011). Through repeated processes of planning, observing, and reflecting, educator engaged in AR can implement changes to improve practice (Hine & Lavery, 2014). According to Carr et al (2009), AR encourages educators to be critical and reflective of their own practices in order to enhance the quality of education for their students and themselves.

2.31 Key Principles of AR

The four key principles the truly defines AR are discussed under this section. These are: i) that AR is collaborative in nature, ii) that AR goes through a spiral (cyclical) process, iii) that AR brings about change and iv) that AR participants constantly reflect on their actions and the research process.

2.311 Collaborative

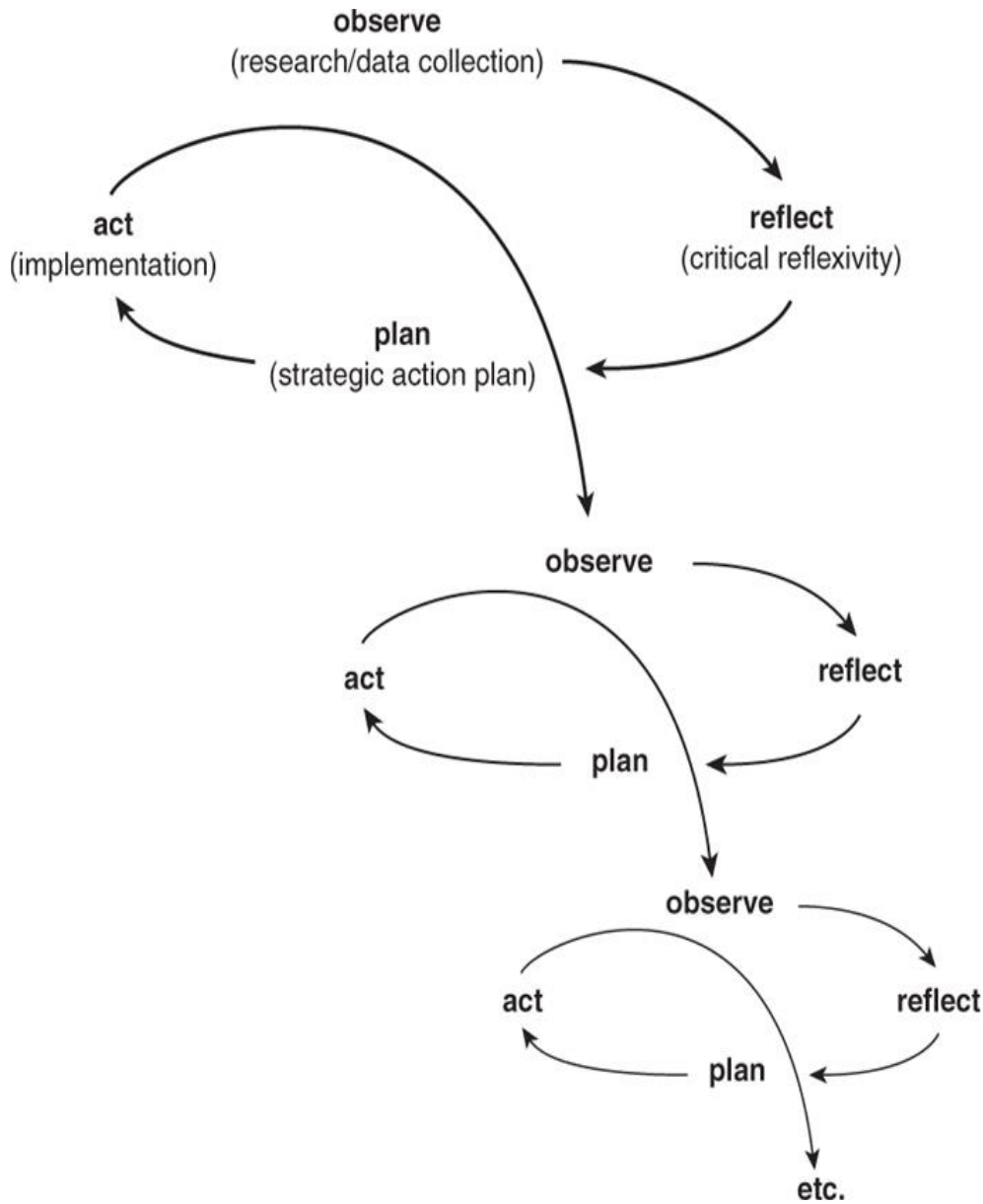
Although some AR examines only individual practices, most involves collaboration with other people. As Creswell (2002) writes, “[a]ction researchers collaborate with others, often involving co-participants in the research” (p. 614). Action researchers tend to work together with co-participants in the education sector. Maclure (2006) posits that one underlying principle of AR is the collaboration between researchers and participants in the research process. This partnership allows stakeholders to gain familiarity with the research process and assume some responsibilities (Maclure, 2006). AR can help educators to identify, plan and implement changes needed for improvement in their schools (Hine et al., 2014). The collaborative learning is achieved through an open communication space where researchers and co-participants openly and equally share their perceptions of problems and proposed answers (Carr et al., 2009; Somekh, 2002). Collaborative AR tends to offer co-participants the opportunity to become empowered practitioners, taking a bottom-up approach by gaining knowledge and solving work-related problems (Greenwood & Levin, 2005).

2.312 Cyclical

AR is a cyclical process for inquiry and nurturing the emergence of knowledge (Coghlan & Shani, 2005; Stringer, 2008). AR goes through repeated cycles of planning, acting, observing and reflecting on the findings, and reformulating new plans (Carr et al., 2009; Stringer, 2008). It is often asserted that multiple AR cycles are needed to have a full understanding of the problem, gather enough meaningful data and to implement the desired change (Mills, 2011; Stringer, 2008). AR involves a feedback loop in which initial findings generate possibilities for change, which are then implemented and evaluated as a prelude to further investigation (Denscombe,

2010). In terms of social change, each outcome provides an opportunity for further reflection and further action. As a result, AR cycles may continue indefinitely.

Figure 1: O’Leary Action Research Cycle Diagram



(Cited from Koshy et al., 2011, p. 10; O’Leary, 2004)

2.313 Change oriented

AR appeals to educators who are seeking change in their practice. AR ensures that the change being sought by educator researchers is done through a systematic reflection on problems in their workplaces (Stringer, 2008). AR is relevant to educators because it engages them to critically reflect on and take action to improve upon their own practices (Carr et al., 2009; Reason & Bradbury, 2001). AR (like ethnography) is a social science research method that does not seek to “discover” generalized truths or findings. Action research is less concerned with particular methods than with developing a deep understanding of what it sets out to investigate; this actually makes AR as an approach readily transferable to other similar situations (Green, 2002, p. 123). AR thus challenges and empowers teacher educators to develop context-specific, bottom-up interventions to enhance their professional practice and academic community (Kilgour & McMurtry, 2014).

2.314 Reflective

AR provides guidance to people on how to reflect critically on their practice and think about new ways of improving it. The principle of reflection ensures that educators reflect on issues and processes, and make explicit the interpretations, biases, assumptions, and concerns that formed their judgments (McNiff & Whitehead, 2011). Action researchers aim to learn from the research process and put that which is learnt into practice, leading to improvement in practice. Reflections of participants influence research analysis and research findings (Somekh & Zeichner, 2009). Reflection enables action researchers not to see themselves as objective observers but rather linked to their research settings and therefore ethically accountable (Michael, 2011).

2.32 AR Studies in sub-Saharan Africa (SSA)

In SSA context, AR has been used systematically and successfully in some development projects and educational research. Examples include Maclure (2006) in Sierra Leone as well as O'Sullivan (2002), Stuart and Kunje (1998), and van der Westhuizen (2008) in Southern Africa.

Maclure (2006) offers an illustration of AR dealing with the participatory evaluation of humanitarian education and development projects in Sierra Leone. Maclure (2006) asserts that AR's collaborative relationship between researchers and participants helps to ensure that stakeholders have the opportunity to gain familiarity with the research process and assume some responsibilities. Applying AR in professional development settings, O'Sullivan (2002) writes about how AR was used to nurture some forms reflective approaches to teaching among teachers in Namibia.

In Ghana however, AR has been used in a naïve and unsystematic manner. For example, an AR research manual for teacher candidates in COEs in Ghana evinces several key tenets of AR, such as its collaborative and democratic orientation, a focus on practical context and change, a situated view of knowledge, and researcher engagement. But it fails to articulate other key principles, such as the specific AR model it draws upon and how to enact iterative cycles of planning, acting, reflection, replanning, and so on. Furthermore, the way it is carried out in practice rarely adheres to any of these principles – based on my anecdotal experience.

My co-participants think that AR can and should be employed more widely and systematically by educators in COEs in Ghana. Some writers have attributed the limited use of AR to inadequate resources, motivational challenges due to low remuneration, or the hierarchical structure of education systems (Asimeng-Boahene, 2004; Stuart et al, 1998). As in many other

parts of the world, these challenges tend to reduce Ghanaian teachers to mere technicians, capable only of implementing national curricular generated by experts in a top-down fashion.

2.33 Action research challenges in the current context

In spite of AR's laudable goal of solving problems, this AR study made my co-participants and myself aware of the fact that the AR process can be difficult to negotiate. The challenges we were confronted with include the following:

2.331 Positivist assumptions

From our anecdotal experiences, teacher education in Ghana is built around traditional views of knowledge as objective and universal. This system of education makes teacher educators unable to question educational policies and practices (Tekin & Kotaman, 2013).

However, using AR for this study has challenged the concept 'universality of knowledge and absolute truth' as my co-participants were able to develop their own teaching strategies outside what is prescribed in their textbook. AR provided my co-participants and myself the opportunities to investigate controversial [taboo] topics and concepts in HIV/AIDS education, such as sex negotiation in Ghana, and helped to provide new insights (Ferreira, Ebersöhn & Botha, 2013). Finally, AR has helped to generate 'new' knowledge grounded in our [local community] experiences where we shared ideas and co-constructed strategies democratically (Kane & Chimwayange, 2014).

2.332 Ethical Issues

The unfolding nature of AR makes it difficult to determine specific ethical issues in advance (Walker & Haslett, 2002) of this study. Ethical issues may come up during the AR process as researchers become aware of the needs of (co)participants (Creswell & Poth, 2017).

Coghlan and Shani (2005) caution about challenges regarding informed consent when researchers cannot anticipate the outcome of an AR project.

I attempted to address ethical issues during this research by first satisfying the University of Ottawa's ethical requirements for this AR study (see **appendix A** ethics approval letter). I provided sufficient information about the research for my co-participants, and we discussed the letter of information as well as the informed consent (see **appendix B** and **C** letter of information and informed consent letter respectively) and agreed on the terms before the commencement of the study (Kim, 2016). In addition to meeting with my co-participants at the initial stage of the research process, I involved them in all activities that unfolded in the AR cycles to deal with ethical concerns as they arose.

2.333 Validity Concerns

Most AR take the form a qualitative research and like other forms of qualitative research, AR is faulted for lacking validity and generalizability (Creswell & Poth, 2017) in some cultural contexts (such as the one in which this research was conducted). Qualitative AR is thus, criticized for failing to adhere to the traditional standards of validation and reliability (Creswell et al., 2017). In addition, from my anecdotal experience, some Ghanaian scholars accustomed to quantitative research say because research such as an AR is undertaken by individuals who have vested interest in the research, the validity of results may be compromised.

However, McNiff and Whitehead (2002) contend that because AR has been around the research space for decades and has been legitimated by the academic community as valid form of research and learning, it should be judged by criteria such as the quality of the collaboration between the researcher and participants, and the contribution of the research to change. Creswell et al (2017) propose triangulation of data and member checking for validation and

trustworthiness of AR findings. These alternative criteria for AR validation were employed in this AR study.

2.334 Resource Constraints

This AR study was challenging conduct in Ghana because of resource constraints, especially in terms of money and time. Since AR is cyclical and iterative in nature, it can be costly and time consuming to conduct (Alpert, 2006; Kim, 2016). Educators may find it a time-consuming process to conduct AR in addition to the existing burden of teaching the curriculum and dealing with the various extracurricular activities.

However, my co-participants and I persisted in successfully carrying out this AR study because our motivation in its potential to solve challenging health issues such as HIV/AIDS through effective health education. Even though I could not get funding from the Government of Ghana for this study, friends in Canada who believe in the potential impact of this study and my goal to nurture critical and change-oriented educators supported me with some funding for this AR study.

2.4 Compatibility of AR, SCT and CoP

SCT suggests that it is impossible to separate individuals from their social influences, and that learning is viewed as culturally and contextually specific (Davis, 2004; Kim, 2006). For action researchers, solutions to problems are negotiated among stakeholders with different power and resources (Herr & Anderson, 2005). In this vein, action researchers assume that knowledge is uncertain, evolving, contextual, and value laden (McNiff et al., 2011).

SCT thinkers view research as a social process, and AR findings tend to take place within this social and political meaning-making process (Tekin et al., 2013). Similar to SCT perspective, AR emphasizes a mutual interaction between researchers and participants in co-creating their reality, that is, what is meaningful and useful in their context. Action researchers value social theory that builds upon the understandings of practitioners but extends this knowledge toward new insights that can form the basis for social action to improve practice (Somekh, 2002).

SCT and AR are concerned with how groups of people critically reflect on a situation and construct new knowledge relevant to their context (Davis, 2004). For action researchers, this knowledge constitutes research and can be the basis for changes in their practices.

Hine and Lavery (2013) posit that the pragmatic appeal of AR makes it context-based and fosters empowerment of members of a CoP. Maclure (2006), for instance, argue that collaborative AR project evaluation program in Sierra Leone was very beneficial to all stakeholders (recipients and donors). The iterative or cyclical nature of AR makes the research process a flexible and beneficial to discover best practices for social change (Michael, 2013).

As discussed earlier, AR, SC and CoP have much in common. SCT provides a philosophical justification for CoP and AR's integration of action, collaboration, and context in learning and research. Specific overlapping themes include a collaborative and democratic orientation, a focus on practical activities and contexts and a view of learning, knowing and research that is explicitly oriented to iterative cyclical improvements rather than discovering a single, objective and unchanging truth.

Chapter 3: The Current Study

3.1 Rationale

As a former teacher educator in Ghana, I seek improvement of practice in COEs through AR, which is described as transformational (Whitehead & McNiff, 2006). In Jasikan College of Education (JASICO), my former institution in Ghana, teacher trainees are required to pursue ‘action research’ projects in their final year of training. While the aim of changing educational practice for the better is certainly laudable, this ‘educational action research’ was usually not carried out in a systematic manner or in accordance with all recognized AR principles. In effect, these ‘action research’ projects become mere formalities of meeting the training requirements of teacher trainees for graduation.

This situation is unfortunate, as I believe that AR can offer an excellent research methodology for bringing about positive educational and social change, context-sensitive knowledge, democratic community empowerment in Ghana and other SSA countries. This is especially true if AR is combined with SCT theories of learning that suit AR’s focus on relevant praxis problems, local expertise and collaboration among key stakeholders.

Next, in spite of the several reforms, mainly occasioned by the external donor funding in COEs, there are, still, challenges bedeviling teaching and learning in the colleges. The most recent reform is the national cabinet approved policy for initial teacher education (ITE) in the country. As part of this policy, all COEs have been elevated to tertiary status to offer a four-year Bachelor of Education (BEd) degree, starting in the 2022 academic year based on the National Teacher Education Curriculum Framework (NTECF). The primary objective of these COEs is to train teachers for the Basic Schools (Kindergarten; Primary Schools - grades 1 to 6; Junior High

Schools - grades 7 to 9) in Ghana. Many of these reforms are top-down policies ‘forced’ upon teacher educators, and the consequence, in my view, is lack of sustainability.

Another reform of interest took place in 2006, when Ghana’s Ministry of Education developed strategies in the education sector for preventing HIV/AIDS infections. To achieve these strategies, student trainees in the COEs became the most important target group, because they would reach a vast number of young people over the course of their careers (Window of Hope Trainee Manual, 2006). Teachers are seen to represent the most critical group for safeguarding the country’s “Window of Hope”. “Window of Hope” refers to 5-14 year-olds who have-not-yet been infected by the AIDS virus (National AIDS/STI Control Programme, 2001). As the Windows of Hope trainee Manual (2006) states, “[i]f these children can be taught to protect themselves from HIV infection before they become sexually active, they can remain free of HIV for their entire lives”. The Ministry of Education, in collaboration with World Education, under the Strengthening of HIV/AIDS Partnership in Education (SHAPE) project, introduced the revised HIV/AIDS syllabus for the COEs in Ghana in 2006. The HIV/AIDS course aims at building relevant knowledge among COEs trainees, and helping them integrate and infuse HIV/AIDS issues into their various basic school lessons.

The program has had some impact on teacher trainees who gained some level of confidence to discuss sensitive and controversial topics in HIV/AIDS education, at least in college, which hitherto were considered taboos. Despite the confidence to discuss HIV/AIDS concepts, many of the teacher trainees have difficulty integrating these concepts into their lessons. This assertion is supported by Fobil and Soyiri (2006) who note, “it is currently quite obvious that the integration of HIV/AIDS topics into the mainstream curriculum has not yet achieved significant success.”

In spite of this policy of integrating HIV/AIDS into lessons Ghanaian schools, the virus has spread and cases continue to increase. Currently, there are few discussions about HIV/AIDS education since external donor agencies have ceased financial support for the program. As a concerned teacher educator by training, I believe the over-reliance on external funding to develop curriculum for critical, life threatening issues such as HIV/AIDS (and currently COVID-19 and its variants) in Ghanaian schools need to be re-examined.

In light of the above, I decided to leverage two educational theories – SCT and CoP – that I have explored in PhD classes to find sustainable and nuanced ways of improving upon practice and dealing with complex health issues in Ghana and SSA. Both these theoretical orientations are compatible with AR methodology. I therefore drew upon both insights from SCT, CoP and AR's grass-roots and collaborative approaches to this research. The ultimate goal for this collaborative AR was to nurture and encourage a CoP in Ghana's COEs to continue with this sort of practical research to be able to equip teachers to negotiate challenges they face integrating HIV/AIDS concepts into their lessons.

3.2 Research Problem (HIV/AIDS Education in Ghana)

HIV/AIDS remains a major global public health issue, having claimed more than 35 million lives so far (WHO, 2017). In 2017, there were approximately 36.9 million people living with HIV internationally, with 1.8 million new cases in the same year (WHO, 2017). Africa remains the most affected region, with 25.7 million people living with HIV in 2017. The region also accounts for over two thirds of the global new HIV infections in that year. In Ghana, there were 20,000 HIV cases were recorded in 2017. Out of this figure, 16,000 are 15 years and above (UNAIDS, 2017).

In the absence of a known cure, education provides the information and skills needed to mitigate the spread of HIV/AIDS (Harber, 2017; MDG Report, 2010). The education sector is an important sector in sub-Saharan (SSA) that plays significant roles in responding to the HIV/AIDS pandemic, because it has the potential to impact very large number of children and to educate them about HIV/AIDS (Braslavsky & Schenker 2002; UNESCO 2003). Schools are therefore critical spaces to educate students about HIV/AIDS (Schenker, 2001). In this regards, teacher preparation and support are key to the success of school-based HIV/AIDS education programs (James-Traore, Finger, Ruland, & Savariaud, 2004; Schenker 2001).

The recent evolution of Health and HIV/AIDS curriculum in Ghana aims at effective integration of HIV/AIDS concepts into the mainstream curriculum in schools. The goal is to assist both students and teachers in understanding the complexity of the disease across the curricula and its devastating effects, in order to protect themselves from infection.

Ghana seems to lag behind developed countries like Canada by failing to embrace new, useful and evidence-based learning and teaching theories and strategies in the HIV/AIDS education (Dull, 2006). Akyeampong (2003) notes that the most commonly used teaching strategy in COEs in Ghana was lectures with teacher educators dictating notes. Dull (2006), observes that while teacher educators at COEs taught teacher trainees about the topic ‘interactive teaching methods’, they did not really use these same methods in their classrooms. Rather, they use lectures interspersed with discussion. In the specific case of HIV/AIDS education, the situation is in accord with Dull’s observation. The lecture method makes it difficult for many teachers to integrate Health and HIV/AIDS concepts into lessons. This makes Fobil and Soyiri (2006) to conclude that integration of HIV/AIDS topics into the other core subjects has not yet achieved significant success in Ghanaian schools.

In addition to the use of limited teaching strategies, other challenges teachers face that account for the low level of success of Health and HIV/AIDS education in schools, include inadequate resources and lack of expertise (HEAIDS, 2010; Waihenya, 2001).

These challenges motivated this AR study and its aim to develop SCT-based teaching strategies that would be useful and contextually sensitive for Health and HIV/AIDS education in Ghanaian schools.

It is worth reflecting that my co-participants and I can only start making small, bottom-up changes in popularizing SCT-based teaching strategies for meaningful learning in COEs because we are constrained by the Colleges of Education Act 2012, Act 847 in addition to other challenges listed in the paragraph above. The COEs Act was crafted in such a way that curriculum being used in the colleges can only be designed by supervisory universities.

Even though the COEs Act sought to give autonomy to all government funded COEs, some provisions in the law are ambiguous and tend to undermine the autonomy and smooth administration of the colleges. The following two examples illustrate my point.

First, regarding the functions, the law provides that the development of academic policies, regulation of courses, development of academic standards, the conduct of examinations and award of diplomas should be undertaken in consultation with an affiliated institution. The law also requires, among other things, that COEs ensure that ‘action research’ forms an integral part of teacher education.

Second, the law stipulates that the development of statutes for governance and management of the COEs be subject to the approval of the Minister of Education. I think the above provisions are inimical to smooth administration of the colleges, which have not been able to develop their own academic programs, including the curriculum of the various subjects since the

consummation of Act 847. In light of these constraints, it is not surprising that teacher educators are reluctant to innovate and be creative, since they have to seek approval for almost every program from either the Ministry of Education or affiliated university with its attendant bureaucracy.

3.3 Research Questions

As we saw above, the rationale of this study is to seek improvement in teacher educators' practice in *HIV/AIDS and Other Tropical Diseases in Africa* lessons through AR. Furthermore, the research problem discusses the limitations and challenges teacher educators face in their colleges, which make them unable to innovate to effectively and contribute to the fight against HIV/AIDS – which is still an endemic disease in Ghana. To help address these concerns, the following questions guided this AR study.

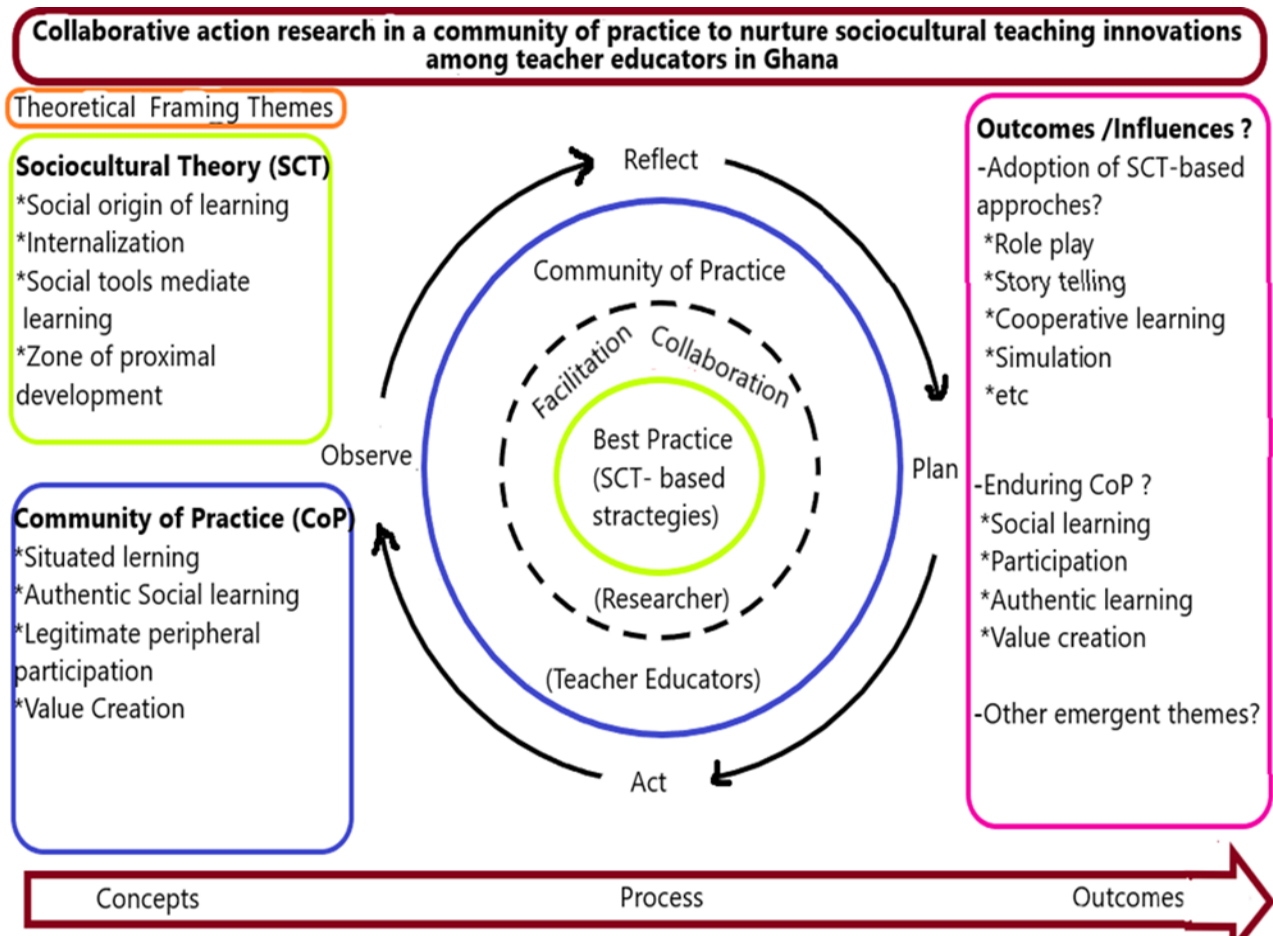
Research question:

How does integrating a collaborative AR project centred around SCT-based teaching and learning strategies in HIV/AIDS education classes influence teacher educators' teaching beliefs and practices?

This question was pursued using CoP and AR as the theoretical frameworks to help generate and analyse data. In addition, the choice of the above theoretical frameworks, within which the research question was explored in this study, was informed by intersubjective social constructivism as the epistemological sensibility.

3.4 Conceptual Framework

Figure 2. Illustration of conceptual framework for this study



CoP and AR have much in common philosophically and can work together well in this thesis. CoP and AR thus offer a useful framework for approaching the life-and-death yet culturally sensitive topic of HIV/AIDS education in Ghana. It is my hope that this framework will help generate socially relevant and sustainable innovation in teacher education in Ghana.

This AR study used a CoP (Wenger, 2006) lens to highlight the importance of sharing information and experiences in continuous interaction as well as of participating in joint

activities. It focused on the extent and the quality of conscious sharing ideas and pedagogic experiences among my co-participants and me, as we engaged in the research process and in generating improvement and value (Wenger et al., 2002). Mutual accountability and democratic decision-making (Wenger, 2006) was crucial in this AR study. My role was to inform, reinforce, inspire, support and enlighten my co-participants, so that we could collectively generate and embrace the desired interventions and improvements in practice. Our aim was to innovate through this AR within the framework of CoP of HPE practitioners, even as the CoP provided the framework for understanding the importance of collaboration. We see the concept of CoP as a meaningful and authentic means of giving educators some space to begin to tell their stories, share experiences, network, and build their confidence and competencies. CoP's framework integrates individual and group learning as mutually constituting each other (Wenger, 1998) and so can be seen as contributing to transformative change (Snyder & Wenger, 2010). In light of this, this AR study provided a platform for my co-participants to learn more about SCT approaches to teaching and learning.

3.5 Epistemologies Consistent with this AR study

Before proceeding to discuss AR as the methodology for this research in the later part of this chapter, it worth pausing to consider the epistemologies consistent with this AR study. Epistemological issues are clearly central to educational research. Indeed, epistemological sensibilities are especially important to foreground in the context of this research, since AR, more often, is dynamic and needs the appropriate epistemological alignments.

The epistemological orientations developed by AR thinkers in education have much in common with SCT and critical discourses like CoP developed by Lave and Wenger. All these

theories position learning and knowing in terms of social practices. That is, what people learn and know emerges from intersubjective activity and negotiation.

In this thesis, the theories and methodology I employed is rooted in the epistemology of intersubjective social constructivism. That is, what people learn and know – including the ideas (knowledge) produced by this thesis – emerges from intersubjective activity and negotiation. As we shall see, the theories and methodology I will be using – SCT, CoP and AR – are compatible both with one another and with an intersubjective, social constructivist epistemology.

Intersubjective social constructivists see learning as self-organized adaptation to current contexts, whether in an individual's beliefs or a social group's practice. HIV/AIDS and the emergence of COVID-19 in Africa demand a collaborative approach to effectively deal with issues such as beliefs, misconceptions, politics and other factors intertwined with health education in Ghanaian communities.

Intersubjectivity is central to construction of social meanings among individuals in a group. Intersubjectivity not only provides the grounds for articulation of ideas but also supports people to extend their understanding of new information and activities among the group members (Rogoff, 1990; Vygotsky, 1987). When members of a community are aware of their intersubjective meanings, it is easier for them to make sense of new information and activities that arise in the community and this will [hopefully] lead to change in behavior.

I chose a social constructivist epistemology because it is linked to my life experiences and educational practice. Having been health educator as well as a sports coach, I have implicitly been employing SCT-based techniques in my works. Most of my teaching strategies were group-based activities and games where the various abilities and insights of the students are harnessed in their various groups as they achieve assigned tasks. Based on this background, it is natural for

me to adopt AR, with its fluidity of roles and reliance on various areas of expertise from my co-participants and myself in the joint construction of useful and workable strategies for HIV/AIDS and Other Tropical Diseases in Africa lessons in COEs. Because my co-participants and I actively and collaboratively created learning situations in this research, my role was flexible – and I never imposed any ideas upon my co-participants. My roles included guiding, supporting, participating, evaluating and facilitating. The guidance was purposely mediated and almost hidden, embedded in the research activities and evaluations/reflections that were conducted at the end of every AR cycle.

While I am aware of the philosophical sensibilities that I bring to this AR study and acknowledge how they shape the study, the next important step is determining the methods to follow in conducting this study. In the paragraphs that follows, I discuss the research methodology and the context in which the study was carried out.

3.6 Research Site

This study was carried out at St. Teresa's College of Education (TERESCO), one of the government funded COEs in the Volta Region of Ghana. Volta Region is one of Ghana's sixteen administrative regions, with Ho as its capital. It is located west of the Republic of Togo and to the east of Lake Volta (see **Appendix D** for the map of Ghana). Divided into 25 administrative districts, the region is multi-ethnic and multilingual, including groups such as the Ewe, the Guan, and the Akan peoples. Afadjato, the highest mountain in Ghana, is located in the Volta region. According to the 2010 census data, there are 2,118,252 people living in the region. The regional capital is Ho. Hohoe municipality, which is about an hour drive from Ho, the research

site for this study, is one of the 25 administrative districts or municipalities in the Volta region of Ghana.

The municipality has a total land surface area of 1,172 km square. According to the 2010 population census, Hohoe has a total population of 167,016 (48% males and 52% females). Major economic activities engaged by the people of the municipality include agriculture, petty trading, construction, and government jobs. Hohoe municipality is unique because it is the municipality with two Catholic colleges of education in Ghana, in addition to the School of Public Health campus of the University of Health and Allied Sciences and a midwifery training institution.

To be specific, St. Teresa's College of Education, which is the research site for this study, is an all-female teacher training institution affiliated to the University of Cape (per the COEs Act 847, 2012). The mission of the college, according its website, is to train competent, efficient and dedicated female teachers who will teach and serve as role models in society.

At this point, I would like to say that during my AR study journey to Ghana, I carried out some social responsibility activities. I donated books and other educational resources to some selected schools including my host college and a teachers' group, whose members are my former students. I am nurturing this group to become more reflective and student-centred in their practice – a gap in professional practice even when I was in Ghana. Members of the teachers' group are practicing in Kadjebi district, which is one of the deprived districts in Ghana. I do encourage them to meet periodically to reflect on the impact of their practice on students' learning and development. Although the activities of this group have no link to the current study, I believe the research is motivated, at least, in part by my reflections on how students' voices are

ignored in Ghanaian schools. The items donated – a laptop, stationeries, textbooks, kids' books and toys – were to support teaching, learning, and quality education.

Items presented St. Teresa's College of Education includes forty textbooks on teacher education, educational research journals and magazines on contemporary issues in education – all of which I selected from the free books cart in front of the Faculty of Education library at the University of Ottawa. In addition, I donated kids' books to the Early Childhood Education department of the college. I also presented the following items: a laptop to teachers' group in Kadjebi to help with their learning and research activities; a box full of books to St. Agatha Commercial College [a high school]; and kids' toys to a kindergarten in Kadjebi. I bought the laptop and kids' books while the other items donated were gifts shipped from Canada.

3.7 Research Participants

To work with teacher educators in realizing the objectives of this AR study, I needed to identify participants who fit particular criteria. To recruit the participants, I started by making contacts with my network of teacher educators in Ghana. I first shared the objectives of the study through a telephone conversation with five of my former colleagues. As Taylor, Bogdan, and DeVault, (2016) explain, a researcher starting from his or her connections is a practical and pragmatic strategy used to recruit participants for qualitative research. I still had a good relationship with my former colleague teacher educators and that made it easier for me to reconnect with them in recruiting participants for the study. A majority of my former colleagues whom I contacted after the initial five people were informed about my research expressed interest in the goals of the study. Through further discussions, my former colleagues and I decided to work together to achieve the goals of this AR study.

In technical terms, I considered the purposeful selection of the participants for this AR study. According to Kelly (2010), purposeful sampling is appropriate in selecting participants that share in the objectives of the research study and will most likely provide useful data. Purposeful sampling of participants also helps in the effective use of limited research resources. Finally, unlike random sampling, purposive sampling strategy ensures that only specific kinds of participants, those who are important to and affected by the research topic, take part in the research study.

The original research plan – which was impacted by the COVID-19 pandemic in 2020 – had ten teacher educator participants (all agreed to take part in the study), two selected from each of the five COEs in the Volta Region of Ghana. Indeed, I visited the original five COEs to hand out letters to the Principals to seek permission for my co-participants to be allowed to take part in the study. However, circumstances in the world at the time, brought about by the COVID 19, have made it necessary for the AR – including the research questions and participants – to be modified and adapted. The teacher educator co-participants from more distant parts of the Hohoe area decided to withdraw from the study because they did not want to risk travelling in crowded commercial buses for fear of getting infected by COVID-19. Although schools and colleges partially resumed on June 8, 2020 for teacher candidates to prepare for their examination, the observation of classrooms portion of my research did not take place. Fortunately, it was legal and safe in Ghana to have smaller group meetings (up to 25 people) with social distancing and wearing of masks. That left 4 teacher educator co-participants from the more local colleges: Two of the participants from St' Teresa's College of Education (TERESCO), an all-female teacher training college, and the other two from St. Francis College of Education (FRANCO), a gender mixed teacher training college. With the changes brought about by the pandemic, I submitted a

new plan (adapted version of my proposal) which was approved by my committee members on May 29, 2020. This new plan included the elimination of two proposed research questions that relied on in-class observations.

It is important to add that the participants for this study are teacher educators whose responsibilities include teacher preparation in the areas of *Health, Physical Education, HIV/AIDS and Other Tropical Diseases in Africa, Early Childhood education*, coaching and mentoring pre-service teachers, and supervising final ‘action research’ projects of teacher candidates. In addition to the above responsibilities, the participants organize programs in *Health, HIV/AIDS and Other Tropical Diseases in Africa* – which is the focus of this study – in their respective colleges. All the participants, except for one, had more than five years of teaching experiences in their respective colleges.

In line with the ethics requirements for this study, I use the following pseudo names – Kofi, Kwame, Korsi and Kordzo – to identify the participants in order to conceal their identities.

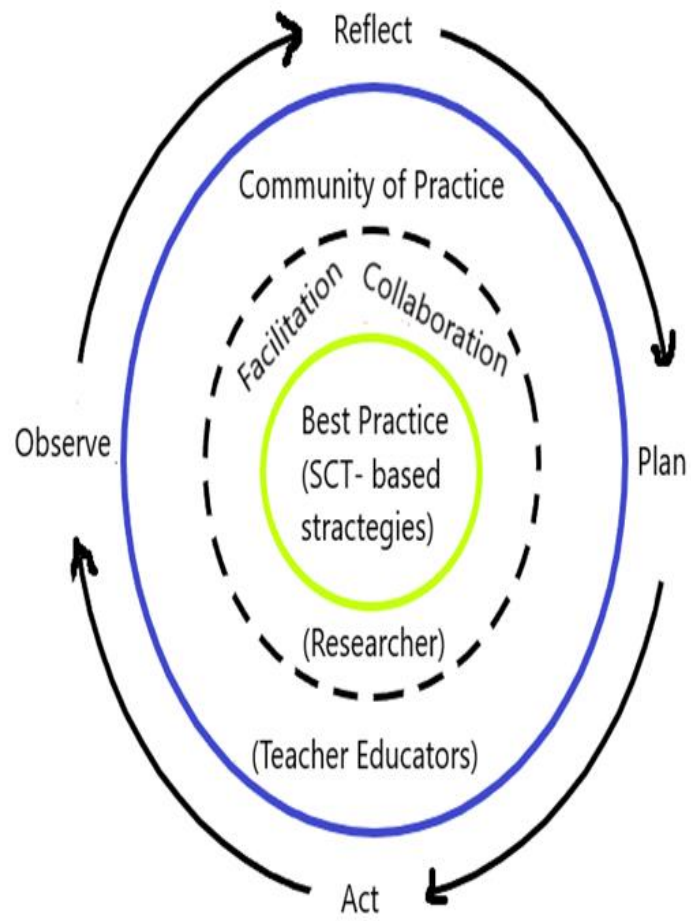
3.8 Research Method

At this point, I should re-articulate the method that has guided this research, that is, action research. Indeed, its influence has been articulated in the literature review section under chapter 2, for instance, in the focus on collaboration and mutual interaction between theory and practice. AR is an on-going process in which researchers make efforts, collaboratively, to take action in order to solve or improve upon the initial problem or issue defined. In this AR study, my co-participants and I reflected (on our teaching practices), planned (strategies for improvements), acted/enacted (strategies planned), and observed (to assess impact of interventions) in a

continuous fashion. The emergent nature of AR led to changes of strategies based on trials and discoveries during the cyclical research process.

In this study, we carried out a social learning and knowing process through three cycles of critical reflection and interpretations of data (reflect), planning a new intervention (plan), implementation of the intervention (act) and data collection (observe). After the first cycle, each new cycle commences by planning based on reflecting on previous cycle and then repeats the cycle. Each cycle builds and refines upon the previous cycle in order to improve actions, and thereby achieve our objectives for this research (O'Leary, 2004).

Figure 3: Illustration of AR cycle of this study



3.9 Research Plans

Below, I have provided abridged outlines of the AR cycles that my co-participants and I followed in carrying out through this thesis research.

AR Cycle 1

Reflecting: We started this AR study with a meeting, between 4 teacher-educator co-participants and me, at St Teresa's College of Education, for collaborative reflection on their current teaching culture and practices in *HIV/AIDS and Other Tropical Diseases in Africa*. This focus group discussion was to be audio taped.

Planning: I planned a schedule for remaining processes and steps in this AR study together with my co-participants.

Acting: I introduced my AR study and enacted a model innovative SCT-based teaching and learning strategies (role-play, cooperative group learning and simulation) with the co-participants.

Observing: My co-participants observed my enactment of the SCT-based strategies in a peer-teaching format, with themselves as "students/learners".

AR Cycle 2

Reflection: We met at the same location 7 days after the first meeting for collaborative reflection on the SCT-based teaching strategies that I enacted in cycle 1.

Planning: I brainstormed with co-participants to select and develop ways to enact innovative SCT-based teaching strategies in their peer teaching lessons.

Acting: Each co-participant peer-taught a unique SCT-based strategy. For example, co-participant 1 enacted “role play”, co-participant 2 enacted “simulation, co-participant 3 enacted “cooperative group learning” and co-participant 4 enacted “storytelling”. These enactments went through 4 rounds so that each co-participant got the opportunity to try all the strategies listed above. In effect, this cycle included four ‘mini-cycles’.

Observing: We observed as lessons were being enacted, and had reflective debrief sessions after each mini-cycle and a reflection at the end of the whole cycle.

AR Cycle 3

Reflecting: We collectively reflected on how co-participants enacted the SCT-based strategies.

Planning: With my co-participants, I planned how to continue carrying out SCT-based strategies in their lessons. We also planned how to keep the CoP functioning and expanding.

Acting and Observing: Co-participants carried out actual SCT-based lessons in their classes. We also hoped to keep the CoP functioning and expanding.

3.10 Data Gathering

Data related to this AR study was collected in a number of ways. First, I chose to hold open-ended, semi-structured focus group interviews at the planning and reflection phases of the AR cycles, which is in line with qualitative research approaches (Charmaz, 2014; Creswell & Creswell, 2018). The focus group discussions during planning and reflection phases of each AR cycle were documented through audio recordings. I ensured we focused on the research topic but not prescribing the nature of responses. I used two devices – laptop and cell phone – to audio tape the focus group discussion sessions. The multiple devices used were to ensure that data was

not lost. At the end of each focus group discussion session, I played part of the audio recording in the presence of my co-participants, to check that the recording was well done. I transcribed the audio recordings after each focus group meetings to assist with my data analysis.

Second, I kept a research journal in which I recorded my observations and thoughts during the AR process. The research journals provided me with a log of my impressions of activities that took place during the research process (see **Appendix E** for a typical journal entry)

Third, I consulted documentary sources, including the current *HIV/AIDS and Other Tropical Diseases in Africa* course book and daily timetable for the colleges to help me understand the broader context and practice of the participants.

Finally, we had a WhatsApp chat group [where we used to communicate] during the AR process in Ghana but we shifted to telephone calls since I had to change my cell phone here in Canada because of technical issues. Currently, I am trying to get my co-participants accustomed to emails, since this mode of communication is more reliable in terms of leaving a trail of records for reference purposes.

3.11 Analysis of Data

As previously discussed, the focus group discussions were documented through audio recordings. The transcribed data was subjected to content analysis. Content analysis allowed me to use inductive reasoning. Thus, I developed codes and themes based on the content of the data to theorize from the ideas explored in the study. In the specific case of this AR study, the analysis of data is embedded in the 3 AR cycles: 1) examining and identifying current philosophy and practice of teacher educators, 2) exploring and developing SCT approaches

['best practice'], and 3) consolidating and expanding 'best practice' through CoP, in line with literature and the research questions.

First, I made sure to document my impressions in the researcher journal during the AR cycles. Furthermore, as described earlier, I manually transcribed each focus group discussions and familiarized myself with the data. As I was transcribing, I was able to listen to what the participants were saying and compared that with my impressions captured in the research journal. This helped me to locate comments that were interesting, to inform subsequent focus group discussions and CoP actions. Many of key ideas [themes] that came up, for instance, in one cycle or mini-cycle [as in cycle 2] were adapted to improve upon the next. Generally, the nature of AR is such that findings [new ideas] from one cycle contribute to the on-going cycle of planning, action, observation and reflection – to generate new ideas (knowledge). In addition, I employed a process of participant validation (member checking), where the transcribed data was discussed with my co-participants to verify and validate the analysis process. My co-participants and I spent about half an hour prior to the start of meetings [apart from the first meeting] to discuss key ideas from transcribed data of the previous focus group meeting. When I returned to Canada, we interacted through conference calls as I kept working on my thesis.

Second, I used NVivo data analysis software to assist me with the sorting, coding and development of themes. NVivo helped to highlight text within the transcripts to generate codes, which I organized into themes to align with the research questions. Saldana (2013) explained that NVivo coding is verbatim coding and that it gives priority and honor [to] the participant's voice by coding with their actual words (p. 91). Further details on the themes that emerged from the AR cycles are discussed in chapter 8, which is the reflective discussion of themes section of the thesis.

Finally, the epistemological sensibilities that frame this AR study shaped the lens through which data was analyzed. For instance, informed by intersubjective social constructivism [of the CoP], my co-participants and I decided on which themes or ideas to adapt into subsequent AR cycle, and which to ignore from the focus group interview transcriptions. The significance of our theoretical lens in this study is that it helped the CoP focus on contextualizing the learning theories explored and allowed them to ignore supposedly objective, externally-imposed ‘truths’ about their practice.

Chapter 4: AR Cycle 1

4.1 Examining current teaching practices and developing a CoP

The collaboration that is the focus of this AR cycle began with a meeting between my co-participants and myself at St Teresa's College of Education, which is my research site. I had earlier met with the principal and some of the teaching staff to donate some teacher education textbooks to the college as part of my efforts for improvement in teacher education in Ghana.

My co-participants and I began the first meeting by spending few minutes to reminisce about some memorable moments during the last [2014] inter-colleges games, which I was part of; I led the zonal women soccer team to win the national games prior to my study in Canada. This exercise was aimed at rekindling the bond of friendship we had in the past and to make them feel relaxed because they might be tempted to think I came back to force my views on them.

I played a central role in this first cycle of the research process. At that meeting, we agreed to constitute ourselves into a learning group (CoP of Health and Physical Education practitioners) for this study and beyond. Our aim was to collaborate – that is, to, productively, combine what I knew about the AR and new theories of learning, with what they knew about teacher education, health issues and teamwork skills. The specific areas on which we planned to focus are theories that support creativity and innovations in teaching, practicing innovative teaching strategies and current research in emerging health issues. After our mutual commitment, we began the process required to create and sustain the CoP for this study.

4.2 Reflection

The first phase of this AR cycle is reflection. The reflection was to afford us the opportunity to examine how my co-participants currently teach lessons in HIV/AIDS in COEs. The actual questions that guided our discussion at this phase are as follows:

- a) *How do you teach lessons in HIV/AIDS in Ghana currently? Is it effective? How do you know?*
- b) *Would you like to change or modify your teaching? If so, how? If not, explain*

Before the focus group discussions begin, my attention was drawn to the fact that the HIV/AIDS education curriculum we were enacting prior to my study in Canada has been revised to include other tropical diseases in Africa, hence the new name: *HIV/AIDS and Other Tropical Diseases in Africa*. In this reflective focus group discussion, the participants began by describing how they taught lessons according to the dictates of the *HIV/AIDS and Other Tropical Diseases in Africa* course outline produced and provided by their affiliate “Mother” university, which is the University of Cape Coast. This, they intimated, was required of them by academic board of their respective colleges. As Kofi stated, “I teach according to the items listed in the course outline [hmm] to prepare students towards the end of semester examination since exams questions are set by the University of Cape Coast (UCC)”. Kordzo elaborates:

As usual, I am guided by the course outline and the content from UCC. The course outlines are structured in such a way that you have specific timeframe to cover its content [...] And as a tutor, my performance is assessed based on the number of students that pass the UCC’s end-of-semester examination. My focus is on giving them knowledge about contents in the course book, so that they can prepare for the exams.

Korsi echoes this view:

The undeniable fact is [we've a culture where] students rather prefer to memorize the concepts in the course and reproduce them during examinations. And having in mind that we are being assessed based on the number of students that have passed [...] Our focus is also on making sure that the students pass exams, since nobody assesses the performance of our graduates [in] the field and relate[s] them to the colleges that have trained them.

In terms of the specific teaching strategies they had been employing, all of them predictably said they used lecture and discussion methods to teach lessons in *HIV/AIDS and Other Tropical Diseases in Africa* in their respective colleges. Probing further, I asked why they relied heavily on lecture and discussion methods. The following reasons given below are my summary of the discussions documented in the transcribed data. 1) They had limited time to explore other teaching methodologies, and that it was more convenient to use lecture and discussion methods to cover large amount of contents in relatively less time. 2) They have limited insights and lack useful teaching and learning resources for SCT-based teaching strategies. 3) They were of the view that the large class sizes were more suited to the use of lecture method and throwing a few questions to students for discussion. Kwame explains:

'Charley', I only discuss the concepts stated in the course books with my students [...]. Most times, I use lecture and discussion methods to teach lessons in *HIV/AIDS and Other Tropical Diseases in Africa*. It would have been ideal to take students, to places like the Voluntary Testing and Counselling (VCT) Unit at the hospital for some lessons on counselling [...] But, it is difficult to get time to plan for such trips.

Some of the views expressed by my co-participants resonated with what is found in scholarly literature. My review of the current *HIV/AIDS and Other Tropical Diseases in Africa* curriculum for COEs revealed suggestions on the use of some experiential teaching strategies for

lesson delivery. However, teacher-centred pedagogy such as lectures continues to be the dominant strategies in colleges in most SSA countries (Harber, (2017); Chisholm & Leyendecker (2008); Dull, (2006); Akyeampong, (2003). This phase of the research shows that the lecture and discussion methods are being used to teach in the COEs. Ironically, the co-participant teacher educators often described ‘interactive teaching strategies’ as a topic in the course book, but they failed to use these same strategies in their lessons. Rather, they continue to use lecture methods and sometimes discussions in teaching ‘interactive teaching strategies’ to teacher trainees (Dull, 2006).

Some of the comments expressed by my co-participants support the effectiveness of the lecture methods in teaching lessons in *HIV/AIDS and Other Tropical Diseases in Africa*. However, some comments articulated the limitations of the lecture method. Those who viewed the lecture and discussion methods as effective said the most important thing was for their students to pass their examination. They elaborated that having had over 80 percent pass rate among their students over the past years proves the effectiveness of their teaching strategies in lessons in *HIV/AIDS and Other Tropical Diseases in Africa*. For example, Kwame observes,

[s]ince the pass rates in the colleges, as long as *HIV/AIDS and Other Tropical Diseases in Africa* classes are concerned [...] we have about 85% pass rate. That means I am doing a good job. Management is happy, students are happy, and I feel good too.

Korsi makes a similar point:

My goal is to encourage my students to grasp the concept in order to pass their examinations. I think the lecture method is effective on my part as far as students pass their final examination [...] And that is the goal of school authorities and the government.

On the other hand, others viewed their current teaching strategies as only partially effective. They were of the view that lessons in HIV/AIDS and Other Tropical Diseases in Africa should have far-reaching behavioural implications beyond passing an end-of-semester examination. Those who held this view wanted their teacher trainees exposed to varying innovative teaching strategies that they in turn could explore in integrating health concepts into their lessons in the basic schools. Here are two quotations from participants who held this latter view:

I can say that in terms of teaching, I use lecture and sometimes group discussions. To be honest, I don't see its effectiveness in bringing about behavioral change. Teachers we train are not able to integrate HIV/AIDS concepts into their lessons at the basic schools to help kids prevent themselves from the consequences of sexual promiscuity [...] And from current newspaper reports, HIV/AIDS cases are still on the increase in the country (Kofi).

I don't think the teaching strategies we are using now are effective because the teacher trainees must acquire some life skills, beyond passing exams – to help them change their behavior, particularly about how to protect themselves against the spread of HIV and other endemic diseases in Africa. Secondly, I think that beyond passing [the] examination they should be able integrate HIV/AIDS concepts into their lessons [...] And stop calling here to help during external supervision (Kordzo).

Literature on this topic confirms the difficulty faced by teachers to effectively, integrate concepts in *HIV/AIDS and Other Tropical Diseases in Africa* their lessons. Fobil and Soyiri (2006), for instance, conclude that the integration of HIV/AIDS topics into the mainstream curriculum has not fully successful. It is the objective of this AR study to help teachers fully integrate concepts in HIV/AIDS – to prevent young people from infection.

4.3 Planning

This is phase 2 of cycle 1 where the participants and I collectively made plans for the entire research process. In this phase, we planned to embark on an exploration, in a community of practice fashion, on how to integrate SCT-based strategies into *HIV/AIDS and Other Tropical Diseases in Africa* lessons, in order to make learning more meaningful for teacher trainees.

At this planning meeting, we agreed that there were areas in which we might be able to collaborate to enhance professional practice through a community of practice. More specifically, we decided to combine what I learned about the teacher education, SCT, and CoP within the AR context of this research, with what they knew about the *HIV/AIDS and Other Tropical Diseases in Africa curriculum*, teamwork and experience in teacher education. An additional goal was for us to make the *HIV/AIDS and Other Tropical Diseases in Africa* curriculum more context-specific and engaging for students, beginning with the colleges that are taking part of this research.

One of my first tasks was to put together a number of new, accessible readings on theories that drew upon SCT, CoP and AR for my co-participants. Sharing these readings with them ensured that they gained an understanding of the ideas we were seeking to explore. While my co-participants were reading the new materials, I was critically examining the *HIV/AIDS and Other Tropical Diseases in Africa* curriculum, to see where SCT insights could be integrated.

The *HIV/AIDS and Other Tropical Diseases in Africa* course aims to build relevant knowledge among teacher trainees, and help them integrate and infuse concepts in *HIV/AIDS and Other Tropical Diseases in Africa* into their lessons to help students protect themselves against the disease. The curriculum covers a wide range of topics and encourages teachers

trainees to make personal behavioral changes, improves their communication skills and confidence, and provides students with the courage to talk about sexual issues.

For the purpose of this thesis, the most important topic in the curriculum is the *Methods of Teaching HIV/AIDS and Other Tropical Diseases in Africa*. It is important to note that upon critical examination of the *HIV/AIDS and Other Tropical Diseases in Africa* curriculum, there are mentions of experiential teaching strategies in the curriculum, some of which, I believe, have theoretical roots in SCT. There is an external examination, purposely, on *Methods of Teaching HIV/AIDS and Other Tropical Diseases* that covers all the experiential teaching techniques, which teacher trainees are required to learn, including the process of enacting them, the advantages and disadvantages.

For illustrative purposes, I list below the ‘experiential teaching strategies’ in the HIV/AIDS course book and description of how four of them are enacted – as stated (verbatim) in the course book (Ministry of Education, Science & Sports/GES; USAID and World Education/Ghana, 2006, p. 177-188).

- i) Brainstorm
- ii) Case study
- iii) Critical incident
- iv) Demonstration
- v) Field visits
- vi) Fishbowl
- vii) Ice breakers
- viii) Jigsaw technique

- ix) Lecturettes
- x) Panel discussions
- xi) Plenary discussion
- xii) Role-plays
- xiii) Simulations
- xiv) Small groups
- xv) Video
- xvi) Visual aids

Demonstration: the facilitator should explain the purpose of the demonstration. The facilitator demonstrates the procedure or new behavior. Students are encouraged to ask questions and engage in discussion. The students practice what has been demonstrated.

Role-play: roles may be set up by the facilitator or students may make up their own roles. The description of a role can be given orally or by handout. Students acting in the role-play should be given some time to prepare. Students act out role-play as the character that they are portraying. Facilitator facilitates discussion and analysis of what was seen or felt by students. ‘Actors’ are given a chance to describe their roles and what they were doing to see if it matches with what students observed. Students then discuss how what they saw relates to their own lives and situations they encounter.

Ice breakers: this technique is usually short and has no specific forms. It is how it is used that makes it an ice breaker. A joke, short game, or physical activity of some sort can all be ice breakers. For example, to begin a class with new students you might randomly pair off students. Have them students work in pairs and find out much about each other in five minutes as possible. Each student then introduces her/his partner to the rest of the group. Other example of ice

breakers include: having students draw a picture, which describes something about themselves and then explain to the group; solve puzzles together.

Small groups: students select or are randomly broken into smaller groups. A specific task is assigned to smaller groups. The purpose of the task is clearly stated and a time limit imposed. How the group's work is to be presented is clearly defined and responsibility for presentation is given to all members of the group. Following these instructions, the task is carried out. The small group come back together and results are presented to the whole group.

As I described above, however, these experiential teaching strategies were generally not enacted by the teacher educators in class, due to fact that it is inconvenient and takes less time to use lecture and discussions for large class sizes to cover large amount of contents for the purposes of getting students to pass examinations. As P2 notes: "I don't have enough time to even try any of the experiential teaching techniques for a class of about hundred students for only two hours. Rather, I do ask them to read on the techniques prior to class discussion."

4.4 Action and observation

At this phase of cycle 1, I made a brief oral presentation, where I formally introduced myself and gave a snapshot of the planned research's methodology and its direction. Additionally, I made a presentation on SCT and CoP conceptual frameworks as well as the AR methodology employed for my research. The aim of my presentation was to clarify the above concepts in the new readings I had selected for them to peruse, and to offer my initial observations concerning their current practice with respect to teaching HIV/AIDS and other health issues.

After the brief introduction, I began by talking about AR methodologies, and how I hoped to work with them to combine what I knew about education, SCT and its related theories with what they knew about the *HIV/AIDS and Other Tropical Diseases in Africa* curriculum - with a view to improve upon practice (within a CoP established). Since they were more familiar with quantitative research than qualitative research methodologies, I was not quite sure if they really understood all the ramifications of this methodology, such as its non-objectivist, participatory epistemology. In spite of my initial fear, they seemed prepared to join in the research process with me.

After going through the theoretical approaches with my co-participants, it was now time to present a model SCT-based teaching strategy. In enacting the model SCT-based strategy, I adapted a juggling activity in my *Teaching Strategies for Health Professions Education* in my PhD class. I used a soccer ball for the juggling activity my lesson presentation instead of tennis balls. I used a soccer ball because it is a common sporting activity in Ghanaian COEs for both men and women. The soccer ball-juggling activity is a useful activity to illustrate SCT-inspired strategy as well as learning within CoP. The most important rule of this activity is to keep the soccer ball in air as much as possible with the feet. I used this activity to kill two birds – to present a model enactment of SCT-based strategy in lesson presentation and to illustrate learning within a community of practice. In enacting the ball juggling activity, I first explained to my co-participants that the lesson was based on CoP and its social perspective on learning as a guiding framework. I stood in the center of the room and asked my co-participants if they knew how to juggle a ball (expertly). I then demonstrated ball juggling, first with one (dominant right) foot, then with both feet. Then after, I used other parts of the body (apart from my hands).

Second, I described the basics of ball juggling with my co-participants as follows: To juggle a ball with one foot, take the ball with one foot from the floor and keep it in the air as much as you can. I made them aware of the rule that any part of the leg and foot can be used – the inside of the foot, the in-step, the heel (if possible) and the thigh. To juggle a ball with both feet, they can repeat the process as above but the ball is alternated from one foot (leg) to the other. Finally, juggling the ball with other body parts in addition to the feet requires keeping the ball in the air as long as one can with as many, body parts as possible (including the head, chest, legs etc.) apart from the hands.

Next, I asked my co-participants to grab a ball, find a space on the periphery of the room and practice ball juggling first with one foot, then with both feet and with many parts of body as possible (apart from my hands).

I classified those who were successful in juggling the ball with one foot as *beginners*, those successful in using both feet as *masters* and those successful in using other body parts in addition to the feet as *experts*.

In enacting the concept of CoP, I asked the experts (who mastered the use of many parts of the body in the ball juggling activity) to move (from the periphery) to the center to join me. I then asked the ‘experts’ to help the ‘masters’ [who were in-between the center and the periphery] and have them practice more to become ‘experts’ and move to the center. In like manner, I asked the ‘masters’ to help and encourage the ‘beginners’ to practice more to become ‘masters’ [to use both feet in ball juggling] and move to the next level towards the center.

As a reminder, the process of learning within CoP is through socialization and participation in the activities of the community. The learning process for new members in CoP starts from a peripheral position, where they get legitimated by other members as they develop

competencies and move up into the middle to become experienced old timers (Davis et al., 2008).

I discussed with my co-participants that no matter the level one starts with any learning endeavor in a CoP, the expectation is that everyone can, over time, move toward the center and become an expert in the social practice of the group. Finally, in CoP, the focus is not so much on individual cognitive processes but on the culture, that is, social performance and increasing responsibility.

The education principles in this soccer ball juggling activity are engaging participants in a meaningful (fun) task, ensuring that participants have access to practice and to practitioners that are more expert, and making use of social interactions and participants' interest and desire to belong and advance within a group. (See **Appendix F** for lesson note on the ball juggling activity).

During discussions after enacting the model SCT-based strategy [soccer ball juggling activity], I was careful to emphasize that I was not aiming to impose any new idea on them. Rather, I stressed that I would be facilitating and that the observations and suggestions I would be making (based on my interactions with them) should therefore, be considered a starting point for discussion or further exploration in SCT ideas, rather than a conclusion or fact.

After offering that caveat, I shared my observations on the *HIV/AIDS and Other Tropical Diseases curriculum*. First, I noted that there were descriptive notes on some experiential teaching strategies for use by teacher educators to equip teacher trainees to be able integrate HIV/AIDS concepts in basic school lessons.

The second observation I had was that the philosophical bases for the suggested teaching strategies described in the curriculum has been not mentioned. I added that SCT approaches

make more sense to educators if they know the philosophical bases, for example, that people learn through social interactions and practices.

I offered to help deal with these observations by encouraging my co-participants to use ideas from the discussions we had earlier on the learning theories and the soccer ball-juggling activity as a starting point to reflect on their practice. I discussed with them that further reflections, actions and observations with the context of the CoP in this study could help them understand the philosophical bases for what they do as educators to improve upon practice.

Finally, I made them aware that SCT and related ideas offer useful contribution to a focus on learners within their social, cultural, and historical context and provide the basis for selecting useful pedagogical strategies that facilitate development of critical thinking and lifelong learning.

4.5 Reflection on AR Cycle 1

This phase presents my personal reflections and an interpretation of our collective reflections.

Individual Level (Myself)

As a PhD student in Canada, which has one of the best economies in the world, and as an ‘outsider’ researcher among former colleague teacher educators, I was seen as having greater socio-economic status since I offered to pay for their transportation fees and provide them with lunch and snacks during our meetings (in fulfilment of ethical requirements). I was not quite comfortable with this feeling, so I kept telling my co-participants that it is part of my ethical requirement for this research, which we discussed at the beginning of our first meeting to provide lunch and snacks, as well as transportation fees.

Unfortunately, for me, I was denied a request for financial assistance for my field research and the remainder of my PhD study from Ghana's scholarship secretariat – without any reason. I made three follow ups upon official requests by travelling about 220 kilometers from Hohoe, my research site, to Accra, the capital city, and was told decision would be made. But it never was. In order to complete the research process, I had to seek some financial support from a church member in Greenbelt Baptist Church in Ottawa.

On a positive note, I was quite happy with my role as a facilitator to help ignite the spark of continuous learning in a community of Health and Physical Education practitioners to improve upon practice in my home country. The other participants identified me more with the philosophical and theoretical thinking behind teaching strategies, particularly SCT ideas. They kept telling me that they were fortunate to have me come back to share the philosophical and theoretical thinking behind learning and teaching approaches. Korsi stresses this point:

we are fortunate you [remember us] to come share the theoretical basis for some of these teaching strategies with us. You guys remember that back in the undergraduate days, the focus was more on the number of teaching methods a teacher should have in her/his portfolio without really focusing on the theories underlying them.

I realized that my role within the group was to offer new and challenging ideas that seemed to challenge pre-existing opinions and practices in the *HIV/AIDS and Other Tropical Diseases in Africa* curriculum. For example, I challenged my co-participants to stay together as a community to keep trying new ideas (specifically SCT ideas) to challenge pre-existing teaching methods in their subject areas and bring about change organically.

Group Level

We got along well as a group, since we were all colleague teacher educators prior to my study in Canada. Even though our collaboration was more academic, the atmosphere was not overly formal and allowed everyone to share his or her experiences in a friendly way. This friendly atmosphere was influenced by my experiences of attending academic dialogue sessions at the Faculty of Education at the University of Ottawa, where snacks were provided and participants are encouraged to ask questions and share their thoughts on the topic under discussion. I encouraged my co-participants to express their views, and decisions were made in a democratic fashion, particularly at the planning phases.

Indeed, my co-participants attended meetings regularly, except for the pair from St. Francis College of Education, who delayed meeting on one occasion because they had honored an emergency staff meeting in their college.

During the focus group discussion to reflect on events in cycle 1, there was a consensus among my co-participants that they are beginning to gain insights into SCT and related ideas, which they hope to, explore further to help better train their teacher trainees. As Kordzo put it,

Giving us the snapshots on SCT ideas was helpful, because going forward I can make attempts to explain the basis for which we have been making over-generalization statement such as ‘use group work; always use group work in your lessons’ to our students on teaching practice.

My co-participants all expressed their readiness to adopt and adapt SCT-based strategies into their lessons. They viewed SCT ideas as acknowledging the critical importance of culture and social context for cognitive development of their students. They also believed that, as a community of HPE practitioners, they could construct ideas (knowledge), and that these ideas

(knowledge) do not necessarily have to be imported from European culture. One participant (Korsi) compared this combination of local and imported ideas to what happened in healthcare:

Colleagues, you know most people are practicing Neem tree steam inhalation [...] In addition to chewing fresh ginger and other spices to fight the COVID-19 even before government begin thinking about vaccines. The COVID-19 pandemic has given us opportunity to revisit, refine and integrate our [old] folkloric medical practices into the curriculum for study in our health training institutions [...] Instead of pushing them to the back burner as we did to our religious practices in our school system.

However, they lamented that they have never had any meaningful contribution into the curriculum they are enacting in their respective colleges. Kwame asked: “do our so-called educational experts have these ideas (knowledge)? If they have, how is it that we are still running [this archaic] educational system rooted in colonial European culture?”

Kofi emphasized:

In our schools, apart from exposing students to ‘Ghanaian languages’ at certain stages in school [...] and some local cultural concepts in ‘Social Studies’, all other subjects and concepts are being studied in English. If our curricula are not related to our way of life, then when are we going to build and run educational system that is Afrocentric and based on our own realities, like those of countries such as Japan and China?

One other idea that kept coming up was my co-participants’ consistent reference to institutional and governmental policies and practices, with emphasis on the fact that their core business of teaching revolved around strict routines and timelines that stifled their creativity.

Korsi offers his/her [rather long] observation on this idea as follows:

Colleagues, this research session is a good opportunity for us to influence curriculum in a way that reflects our culture [...] But as we are all aware, the COEs Act...and the system is design[ed] in such a that there is very little we can do apart from implementing whatever we receive from UCC. The Law

says we should consult [...] everything consult [...] We can't even think of any new thing to try on your own. What even annoys me more is the cliché 'order from above' [...] All these things are not helping us invent anything [...] But rather wait for leftovers and handouts from the Western world. But who am I? As it stands now, we have no options but to stick to whatever comes from 'above' and try to help our students pass the examinations so we can earn our monthly pay.

The sentiments expressed above by the participants to reflect on policy and their practices mark the end of the first AR spiral and the beginning of the next spiral. The next cycle deals with my collaboration with my co-participants to develop ways to enact the SCT ideas discussed in the first cycle in their own *HIV/AIDS and Other Tropical Diseases in Africa* lessons.

Chapter 5: AR Cycle 2

5.1 Working with Co-participants to Explore of SCT-based strategies

In this research project, my co-participants and I developed teaching strategies that are SCT-based. That is, they are based on theories attributed to Lev Vygotsky and others, which assert that human learning and knowing originate primarily in social practices and interactions (Creswell, 2012). Our ultimate goal was to explore how these teaching strategies might contribute to meaningful learning and teaching in the colleges of education in Ghana – and, in turn help teacher trainees integrate concepts in *HIV/AIDS and Other Tropical Diseases in Africa* into their lessons.

It is important to re-articulate that this study departs from conventional academic research that usually strives for objective detachment to discover universal, or at least widely generalizable, knowledge. This conventional view accords well with traditional Western assumptions about knowledge as truths about the world that are independent of any particular social contexts, as well as the assumption that learning is about individuals ‘acquiring’ these truths (Davis, Sumara & Luce-Kapler, 2015; McMurtry & McMurtry, 2016; Tekin & Kotaman, 2013).

In contrast, this collaborative AR seeks to generate situationally relevant knowledge grounded in the experiences of participants, their communities and their contexts (Kemmis et al., 2014; Tekin et al 2013). Such knowledge may not be as useful or relevant in different communities and contexts. Even within a particular situation, AR knowledge is never ‘set in stone’; further experiences and reflection may lead participants to revise their plans and try new actions or practices – and thus generate new knowledge (McNiff et al., 2011).

Fortunately, SCT offers an alternative way to frame learning and knowing, a way that fits much better with AR and its focus on collaboration, practical problem solving, researcher engagement, situational understandings, and the continuous cyclical nature of knowledge construction. We wanted to explore how AR and SCT– when employed together – can help support positive social change, context-sensitive knowledge construction, and democratic educator community empowerment in COEs in Ghana.

In this cycle, my co-participants and I planned and enacted innovative SCT-based strategies in a peer-teaching fashion. I was much involved in the reflection and the planning phases in this cycle. At the action and observation phases, however, I merely observed as my co-participants tried out SCT-based innovative strategies in their HIV/AIDS lessons. As collaboration with and among my co-participants developed through subsequent research cycles, I took on a less central role and became more of a facilitator. The data collected focused mainly on co-participants' evolving understanding of SCT ideas and pedagogy, including how changes in their understanding during the research process influenced their practices and desire to keep learning and exploring in the CoP being nurtured. As in the first AR cycle, data related to this collaboration was gathered through audio recordings and a reflective journal in which I recorded my observations and feelings in relation to this collaboration.

The action and observation phase in this cycle is broken up into many parts. First, there were four different enactments of SCT-based innovative strategies – what I referred to as 'mini-cycles' in chapter 4. In each mini-cycle, the participants took on different SCT-based approaches. At the end of all four mini-cycles, each participant had tried four different approaches. I adopted the mini-cycles approach to help generate more data to compensate for the reduction in the number of the initial participants recruited prior to the withdrawal of six of them

from the study because of the COVID-19 pandemic. To provide a break and time to reflect, a short 'reflective debrief' was conducted after each mini-cycle. These brief reflections are included in this 'action and observation' section. A more general reflection, incorporating themes across the various mini-cycles, is provided in the Reflection section that follows.

The reflective debrief sessions were held with my co-participants to consider what they thought worked, what did not work, and what might change or be improved upon. The short reflective debrief session served as a very important stage of this cycle because they not only offered us an opportunity to reflect on how the SCT-based strategies were enacted but also served as a learning space for us to nurture our emergent CoP as HPE practitioners.

5.2 Planning

My co-participants and I brainstormed extensively to select innovative SCT-based strategies and develop ways to enact these strategies in peer teaching fashion. The SCT-based strategies we discussed involved inquiry-based, student-centered learning, collaboration, dialogue and critical thinking; our goal was to support deep learning of concepts rather than the more common practice of merely giving lectures.

The following are the SCT-based approaches I discussed with my co-participants to enact in their Health and HIV/AIDS lessons in the *Action Phase* of this cycle, with a view to adopting and adapting the lessons in their classes in the future and beyond the scope of this research.

Role-play is a form of popular theatre where teacher educators can identify a problem (such as caring for an HIV/AIDS patient), come up with a story, and act it out, to generate discussions and problem solving.

Storytelling can help learners to understand others' experiences and to benefit from the wisdom of HIV/AIDS patients. For example, following the necessary protocol and ethical issues, teacher educators can collaborate with local hospitals to invite an HIV/AIDS patient or a family member to talk about their experiences during HIV/AIDS lessons. This can serve as a powerful teaching strategy to get learners to more deeply understand real life experiences and how devastating HIV/AIDS can be, as well as to take the needed preventive measures against the disease.

Cooperative (group) learning is another useful strategy to help learners have meaningful learning experiences. It can be enacted by putting learners into groups and tasking them to discuss, for instance, the concept of HIV/AIDS stigmatization in the workplace. The educator can provide learners with scaffolds and options to present their ideas through drawings, discussions, narratives, songs, poems, essays and role-play.

Simulation is a way of imitating a situation. I will encourage my co-participants to design a simulation scenario for concepts in *HIV/AIDS and Other Tropical Diseases in Africa*. A concept that can be taught or illustrated through simulation, for example, is giving first aid to an HIV infected person (not real) who is bleeding from a deep cut while avoiding blood contact.

The planning discussions on the SCT-based strategies generated a lot of interest on the part of my co-participants. They were nodding in excitement about gaining insight into these innovative strategies. During this time, I also benefited from their rich experiences related to *Health and HIV/AIDS education*. They made valuable contributions at this planning phase as we juggled through the teaching strategies they were familiar with.

For instance, Kofi opines, "I tried using the small group discussions method last year in my class." Kordzo echoed Kofi's point but applied it to role-play:

“I once organized a drama for my class to raise awareness about impact of HIV/AIDS on the infected person and the affected family.”

My co-participants’ contribution at this stage of the research cycle thus gave me a valuable glimpse into how the *HIV/AIDS and Other Tropical Diseases in Africa* course could be enacted prior to this research.

The plan we developed was as follows: Each of my co-participants would select one of the SCT-based strategies described above for enactment in the action (next) phase of this cycle. Since there were four of them, they would alternate in enacting all the four SCT-based strategies to help generate rich data for analysis and discussion. The mini AR cycles would be done in the following format.

Mini AR cycle 1

Kofi enacted role-play

Kwame enacted simulation

Korsi enacted cooperative group learning

Kordzo enacted storytelling

Mini AR cycle 2

Kofi enacted storytelling

Kwame enacted role-play

Korsi enacted simulation

Kordzo enacted cooperative group learning

Mini AR cycle 3

Kofi enacted cooperative group learning

Kwame enacted storytelling

Korsi enacted role-play

Kordzo enacted simulation

Mini AR cycle 4

Kofi enacted simulation

Kwame enacted cooperative group learning

Korsi enacted storytelling

Kordzo enacted role-play

It is important to note that I followed through with the advice from one of my community members to make the research plan very flexible for my co-participants – who volunteered to take part in the study – in the wake of the COVID-19 pandemic. We planned this AR cycle 2 in such a way that if we had to postpone meeting a day or two because of situations beyond our control, it was not much of a problem.

My role at this phase was to guide, direct and answer questions relating to the selection of SCT-based strategies for enactment by my co-participants. Since we were making plans for all of AR cycle 2 at this phase, I elected to collect data through audio recordings of focus group discussions as well as through my research journal of observations. I used the same data gathering methods mentioned above during focus group discussions at the reflection phases as well to give us a good sense of how we were progressing in our attempt to improve upon practice

in this community of HPE practitioners. We also agreed that each of my co-participants would present a one-page lesson plan prior to enacting the SCT-based strategy selected (See **Appendix G** for participants' sample SCT lesson plans).

5.3 Action and observation

This phase was enacted over a period of 4 weeks. In each week, a day was set aside for each mini AR cycle. Prior to enacting each mini cycle, each of my co-participants handed in the one-page lesson plan and a brief overview of the chosen concept in *HIV/AIDS and Other Tropical Diseases in Africa*. The lessons were enacted in line with the general stages of lesson delivery in Ghanaian schools, beginning with an introduction, then activities and finally an evaluation [reflection].

I was amazed at the interest my co-participants showed during these enactments. The enactment sessions were very interesting; they brought out the 'child' in each of my co-participants, as they acted as students when it was not their turn to present lessons.

Without my prompting, each of my co-participants had re-arranged our meeting venue to suit the SCT-based teaching strategy selected. I modeled my co-participants pre-lesson delivery preparations during the *action phase* of AR cycle 1, where I gave 'expert' enactment of the SCT-based strategies using the soccer ball juggling activity.

Again, as I indicated under the preceding *planning phase* above, I treat each enactment (or trial) as a mini AR cycle. In the enactments that follows, my co-participants adapted the SCT-ideas in lesson topics that affect the people in their communities. My co-participants in their first mini AR cycle try to mimic the steps I followed in my lesson presentation because that was the only model prior to the first trial of the activities. In their second, third and fourth trials, they had

the opportunity of observing their colleagues and at each next trial, they make efforts to improve upon their practice.

5.3.1 Mini AR cycle 1:

The discussions under this phase are my summaries of how each of my co-participants planned and enacted the SCT-based approaches.

First, I was very impressed with the lesson delivery of my co-participants, especially with how much preparation they had done in terms of information and resources they collected and their organization of that information and resources into lesson plans within the relative short amount of time they had.

Second, in enacting the approaches, my co-participants introduced the concept under consideration, and then followed through with the specific SCT-based strategy selected, and finally, ended the lesson with an evaluation or a reflection. I was aware that each of my co-participants would have four trials using the various SCT-based strategies, so I adhered to my research plan not to interrupt their lesson delivery sessions with questions. This was to allow them with ample space to learn, through this AR process within the CoP, how to use the SCT-based strategies in their future lessons for meaningful learning experiences for students in their respective colleges.

Finally, I created a safe and open atmosphere in our meeting place, so that my co-participants felt free and relaxed, especially when enacting the SCT-based strategies. I used the term ‘facilitator’ to describe the co-participant running the activity since I believed it was an appropriate terminology to describe educators using SCT-based strategies in their classes. I also

used the term learners or students to describe the co-participants acting as teacher trainees [student teachers] in the peer teaching sessions.

Enactment I – Role-play

Kofi was the first to enact a role-play on how to show empathy towards HIV/AIDS infected person. S/he asked the learners to act as characters in the role-play. S/he gave them short scripts to plan the role-play themselves. S/he gave the group 10 minutes to decide who will play which role and to prepare the role-play. After the preparatory work, it took the group another 15 minutes to present the role-play, after which Kofi, as the facilitator, debriefed (by way of evaluation) the characters, asking them how they felt and insights they received from the role-play experience.

Lesson summary

Introduction: giving out scripts and guiding learners select roles to play

Activity: presentation of role-play by characters

Evaluation: debriefing characters on role-play experiences

Enactment II – Simulation

Simulation was the next strategy and was enacted by Kwame. S/he simulated the procedure for giving a first aid to ‘an HIV infected person’ who is bleeding from a deep cut while avoiding blood contact. S/he introduced the lesson by guiding the learners to identify first aid items and their uses. Then, s/he poured palm oil [as improvised blood] on the left hand of the victim [as if blood is oozing out from the hand]. Next, s/he simulated the procedure for giving first aid on the ‘HIV/AIDS patient with an open wound by following the procedure below:

Washing her/his hands

Applying pressure to stop the bleeding

Cleaning outside of the wound

Cleaning inside of the wound

Applying antibiotic and covering the wound

Next, s/he gave opportunity to the learners to repeat the simulated process s/he enacted in order to assess them on the simulation strategy.

Lesson summary

Introduction: guiding learners to identify first aid items (equipment) and their uses

Activity: the simulation process

Evaluation: guiding learners to repeat simulation processes

Enactment III – cooperative group learning.

Korsi enacted this strategy. S/he put the three other participants into a group and distributed a note card to each of them identifying each person's unique role. S/he provided the group members with clear descriptions of their roles using examples and modelling. S/he described the roles as follows:

Summarizer (read the text and highlight key ideas to share in the group),

Questioner (read the text and pose questions about the selection such as puzzling information and unclear sections of the text) and

Clarifier (read the text, listen to the summarizer and questioner and try to answer questions raised).

S/he used this strategy to teach the topic '*socio-cultural conditions that make women more vulnerable to HIV/AIDS in Ghana*'. S/he had the learners read an assigned 3-paragraphed text selection on the above topic. S/he encouraged them to use note-taking strategies, such as selective underlining of key passages, to help them better prepare for their roles in the discussion. For each paragraph, the facilitator had the group alternate roles in such a way that each had an opportunity to be a summarizer, a questioner and a clarifier. At the end of the activity, s/he had the learners reflect on their roles in the learning process.

Lesson summary

Introduction: facilitator provides group members with descriptions of their roles

Activity: enacting cooperative learning activity

Evaluation: facilitator guides learners to reflect on their roles

Enactment IV – Narratives and Stories

The final facilitator to take his/her turn for the first mini AR cycle in enacting an SCT-based strategy was Kordzo. Kordzo used narratives and stories to teach how to cope with a person living with HIV/AIDS through the lens of a nurse. S/he invited a nurse who came to talk about what it is like to be caring for people living with HIV/AIDS. The narratives took 15 minutes, after which another 15 minutes was spent to give learners the opportunity to ask the nurse questions for clarification. By way of evaluation, the facilitator asked learners to come out with three themes in the story to guide them in developing their own stories.

Lesson summary

Introduction: facilitator introduces the topic and speaker (the nurse)

Activity: narratives by the nurse

Evaluation: learners asked to reflect and come out with 3 themes from the narratives

Reflective debrief 1

My co-participants reflected on their first attempts at trying out SCT-based strategies in their lessons. The reflective debrief questions and my summary of their responses presented by my co-participants are as follows:

- a) *How do you feel about trying out the SCT based strategies in your sample lesson with your 'students'?*

Two of my co-participants said they felt a bit nervous prior to the lesson presentation, because teaching their peer educators (acting as students), they were thinking they might be embarrassed if mistakes are identified during their presentations. As Kofi puts it: "I felt very nervous initially because I fear my colleagues will laugh at my mistakes [...]. It is not an easy teaching [a] task to teach your own colleagues who know the rudiments of teaching methods."

They talked about the fact that they had to go beyond what is in the textbooks in order to prepare and enact the SCT-based approaches. They were open to the new SCT-based approaches because they are very useful to the extent that they think a good teacher cannot ignore voices of students in her/his classes. Kwame illustrates this point by saying: "I don't think any teacher who decides to use the SCT-based approaches cannot ignore any student in her/his classes."

The participants further observed that the SCT-based approaches could help students develop context-based knowledge and the skills required for attitudinal change in real life situations. As Kordzo explains, "if a teacher keeps engaging students in activities through the

SCT-based approaches, I believe the students will [...] by all means understand and practice some aspects of what was taught.”

They felt the research process provided them with a great opportunity to change their teaching styles and expressed their willingness to explore SCT-based strategies since they were not constrained by time and examinations in the research lesson presentations. Kofi jokes:

[G]uys, this is the only opportunity we have to play around these SCT inspired ideas we are trying to ‘master’ through this research process because we are not thinking about how to cover a topic before the end of semester exams.”

The second reflective debrief question is as follows:

b) What changes did you notice in trying out these SCT-based approaches and strategies?

My co-participants were of the view that that meaningful learning and knowing could best be achieved through cooperative activities informed by SCT ideas. Another change they noticed was that enacting SCT-based approaches demand a lot of preparation compared to the lecture method of teaching. Kordzo explains: “educators need a lot of preparation – in terms of gathering of resources and practice[ing] prior lesson presentation [...] In order to do a good job with the SCT-based approaches.”

They observed that all the domains – social, affective and psychomotor – of education were greatly utilized by learners in SCT-based activities; that helped learners to make cognitive meanings of concepts, which they can apply in their day-to-day living.

Data from the activities described above demonstrates the impact the research activities had on the participants. Opening themselves to the SCT-based approaches, my co-participants

found out that there is the need to renegotiate authority and control in class. SCT-based approaches place students at the center of the learning process hence require the creation of a democratic space in their classes. As Kordzo describes: “I think if one is going to fully adopt SCT inspired ideas, then you must be ready and willing to lose the power and control we have over students in our classes.” The participants also learned to reflect through enacting the SCT ideas – something they do not usually do. They contend that to effectively adapt the SCT ideas in lesson delivery, teachers need to transform their philosophy about learning and knowing. Korsi expresses the following view:

I think we have to rethink the way we do things [ooo]. No wonder!
That is why they say Canada is an advanced country [...] the
activities we are taking part in are very interesting [...] I wish every
teacher understand these kinds of stuff.”

5.3.2 Mini AR cycle 2:

Enactment 1 – Narratives and Stories

Kofi enacted storytelling for the second trial. S/he used an animated story. S/he had learners listen to 15-minutes online story based on actual interview with a sister of an HIV/AIDS patient dealing with stigmatization. The emotional online interview engaged the attention of the learners, after which the facilitator had a debriefing session with them. The facilitator asked learners what they would do if they were the person interviewed for the story.

Lesson summary

Introduction: getting ready and making sure audio-visual resources were functioning properly

Activity: watching and listening to animated story

Evaluation: debrief session with learners

Enactment 2 – Role-play

Kwame enacted a role-play on the topic “negotiation for sex (assertiveness in communication)”. The lesson was to demonstrate how one could be assertive in saying no to sex without feeling guilty and hurting the sensitivity of the partner. S/he had two of the participants act as characters in the play. S/he gave them the following script:

Janet visited John in his house one evening in course of dating for about a year with no mention of sex prior. As they were all by themselves in the room chatting, John developed sexual feelings for Janet and decided to propose the idea of them having a taste of it.

The facilitator then asked the ‘actors’ to plan the role-play themselves. The facilitator gave the ‘actors’ 10 minutes to decide on their roles (one acting as Jane and another as John) and another 15 minutes to present the role-play. At the end of the play, the facilitator had a debrief session with the class.

Lesson summary

Introduction: giving out scripts and helping learners select roles to play

Activity: presentation of role-play by characters

Evaluation: debrief session with class

Enactment 3 – Simulation

Korsi used a dummy doll to simulate the procedure for giving Cardiopulmonary resuscitation (CPR) to ‘an HIV infected person’ in ‘cardiac arrest’. S/he introduced the lesson by guiding the learners to familiarize themselves with some CPR equipment such as exhaled air resuscitation masks, which I carried with me from Canada and pairs of disposable gloves.

S/he then simulated the CPR procedure as follows:

- Checking the scene for safety
- Calling first respondents for assistance
- Opening the airway
- Checking for breathing
- Giving CPR (chest compressions, delivering rescue breaths)
- Repeating CPR steps

Further, s/he gave participants an opportunity to repeat the simulated process s/he enacted, in order to assess them on the simulation strategy.

Lesson summary

Introduction: guiding learners to familiarize themselves with equipment and their uses

Activity: CPR process

Evaluation: guiding learners to simulate CPR

Enactment 4 – cooperative group learning

Kordzo adapted the strategy used by Korsi in the first trial to enact the topic *difficult concepts in HIV/AIDS education* – such as incidence rate, prevalence rate and stigmatization.

S/he put his three other colleagues into a group and distributed a note card to each of them identifying each person's unique role. S/he provided the group members with clear descriptions of their roles as follows:

Summarizer (read the text and highlight key ideas to share in the group),

Questioner (read the text and pose questions about the selection such as puzzling information and unclear sections of the text) and

Clarifier (read the text, listen to the summarizer and questioner and try to answer questions raised).

S/he had the learners read an assigned text selection on *incidence rate, prevalence rate and stigmatization*. S/he encouraged them to use note-taking strategies such as selective underlining of key passages, to help them better prepare for their roles in the discussion. For each concept, the facilitator had the group member alternate the roles in such a way that each had an opportunity to be a summarizer, a questioner and a clarifier. At the end of the activity, the facilitator had the participants reflect on their roles in the learning process.

Lesson summary

Introduction: facilitator provides group members with descriptions of their roles

Activity: cooperative learning activity

Evaluation: learners reflect on their roles

Reflective debriefs 2

My co-participants reflected on their second attempt at trying out SCT-based strategies in their lessons. The questions and my summary of their responses are as follows:

Will you change your overall teaching approaches in HIV/AIDS education because of the introduction of these SCT ideas? What about your own practice as a teacher educator?

The teacher educators overwhelmingly believed that teaching approaches generally, and their own practice, needed to change in response to learning about and trying out the SCT ideas.

Korsi said:

Definitely! We need to bring some changes into the way we teach generally because the SCT-based strategies put learners at the centre of the learning process and give us the opportunity to know their strengths and weaknesses in order to help them improve upon their weaknesses.

Kofi: added:

We have to change our HIV/AIDS teaching approaches too because we have seen from these approaches [...] that there are many different ways of teaching the controversial [taboo] topics in a way that may not create problems for us.

The participants also observed that the SCT-based approaches made teaching and learning more engaging and supported classroom management. This is because they take away the mundane nature of a lecture and sustain the learner's interest in the learning process. As

Kwame observes:

Looking at the activities [...] we did so far, [...] it is just logical to make efforts to change our teaching approaches from lecture method to SCT-based strategies, because we have realized from the first two trials that whatever is learned depend on social practice of participants in class.

5.3.3 Mini AR cycle 3:

Enactment 1 – cooperative group learning

Kofi asked students to work in pairs and assigned each pair a factsheet on a specific HIV/AIDS concept (e.g stigmatization and discrimination). I joined one of the groups to bring up the number of 'learners' to 4 because at any enactment, there is 1 facilitator and 3 'learners'. S/he then asked each pair to discuss the given specific concept, to become an 'expert' on it and then share with the other pair. The other pair in turn shares the concept they mastered with the first group. Over the course of discussion, the facilitator went around to help learners have

thorough understanding of the concepts. S/he then asked the pairs to alternate the concepts and repeat the jig saw strategy. Finally, s/he asked the learners to share their jigsaw learning experiences.

Jigsaw strategy focuses on fostering learner cooperation rather than competition. In this strategy, learners in “expert groups” are each assigned part of a lesson to master and later share with other groups (jig sawing) until the whole lesson (topic) is covered. Jigsaw helps learners have meaning learning experiences and develop their collaboration skills.

Lesson summary

Introduction: pairing learners with factsheets

Activity: jig sawing of lesson

Evaluation: learners share experiences

Enactment 2 – Narratives and Stories

Kwame went an extra mile to get an HIV/AIDS patient to talk to class by phone about access to health services. The patient talked about what it is like to be living with HIV/AIDS specifically and how s/he accesses health services in midst of stigmatization and discrimination at health centers. The patient talked about the intervention roles some non-governmental organizations play to help her/him access health services by interfacing between her/him and other HIV/AIDS patients and health facilities. The facilitator provided the opportunity for a question and answer session. The facilitator concluded the lesson by asking learners what would have been their action if they were in the shoes of the patient.

Lesson summary

Introduction: getting the patient on phone

Activity: listening to patient's narratives

Evaluation: learners sharing experiences

Enactment 3 – Role-play

Korsi enacted a role-play on the topic “discrimination against people with HIV/AIDS”. The lesson was to demonstrate or draw attention to how people with HIV/AIDS are being discriminated against in public spaces. S/he had the learners as characters in the role-play. S/he gave them the following script:

Jones, an educator, an HIV infected person, in one of the colleges in town visited his friend in another college. When he got to the staff common room, he met two teachers who, instead of welcoming him and offering a chair, avoided him and directed to him to meet his friend who has taken his students for practical Physical Education lesson on the soccer pitch.

The facilitator asked them to decide on their roles (one acting as Jones and the other two as teachers in staff common room). The learners were given 10 minutes present the role-play. The facilitator debriefed them on their roles.

Lesson summary

Introduction: giving out scripts and guiding learners select roles to play

Activity: presentation of role-play by characters

Evaluation: debrief learners on their roles

Enactment 4 – Simulation

Kordzo used an improvised dildo and condom to simulate the procedure for wearing condom properly. S/he used this strategy to teach the topic ‘preventive measure of HIV through sexual intercourse’. S/he introduced the lesson by reviewing the ABC (Abstinence, Being faithful to one’s partner and Condom use) of HIV preventive measures with learners. S/he then discussed with learners that condom use is one of the ways of preventing HIV through sexual intercourse. S/he simulated the proper use of condom using the following procedure.

- Checking the expiry date on the package
- Placing the dildo stand upright
- Taking out condom from the package
- Squeezing out air from tip of condom
- Rolling out condom down to base of the dildo
- Finally, holding onto the rim of condom and withdrawing the dildo to simulate its removal

Further, s/he gave opportunity to the learners to practice the simulated process s/he enacted as a way of evaluation.

Lesson summary

Introduction: revising ABC of HIV prevention with learners

Activity: simulation process

Evaluation: learners practice simulation process

Reflective debriefs 3

My co-participants reflected on their third attempt at trying out SCT-based strategies in their lessons. The debrief questions and a summary of their responses are as follows:

Can you share your successes and challenges in trying out SCT-based approaches in your HIV/AIDS class with us? How do you think you can negotiate the challenges to be successful?

The points discussed below are my summary of what my co-participants perceived to be successes and challenges in trying out the SCT-based approaches.

Successes

They expressed the view that their attempts at trying out the SCT-based approaches were quite successful. They felt the SCT-based approaches were successful in empowering them both as facilitators and ‘students’ to take more control of the learning process. They felt that the SCT-based approaches, which are learner-centred, tend to relinquish some of the teacher-imposed rigid structure that is present in their classes to allow students to be at the center of the learning process for meaningful learning experiences. As Kordzo observes:

I felt that the SCT-based approaches made it possible for the me to guide the learning process and not telling the ‘students’ what the course book says...the approaches also allowed the ‘student’ to share ideas and support each other in the group.

Korsi exclaims:

Wow! To be honest [...] I think I can say with some level of confidence that I now understand the principles behind using songs and rhymes to teach in the kindergarten, putting students into groups for activities in class and on the sports field. I feel I’ve learned a lot so far

Challenges

Time has been the biggest challenge for my co-participants in trying out these strategies for far. SCT-based strategies required a lot of time to plan. Some of these strategies, particularly simulation require time to gather the resources, and to plan and rehearse lessons to enact them (expertly) for meaningful learning experiences for learners. As Kofi puts it:

to properly use these SCT-based approaches, you need a lot of time....And *HIV/AIDS and Other Tropical Diseases in Africa* is given only 2 hours per week on the time-table....We don't have enough time to go through all the hustle of preparing and enacting these SCT-based approaches.

Another challenge worth discussing is that medical resources for simulation are quite expensive to purchase. Medical kits such as First Aid Kits including expendables (such as plasters, methyl violet 10B/crystal violet/gentian violet, etc.) are essential for teaching some concepts our HIV/AIDS lessons, but are expensive and not readily available for educators like us to purchase. Kordzo summarizes their concerns: “And how can we get educational resources for the large number of students we teach in the colleges where there is practically no money allocated for such resources.”

Korsi makes the point that:

you, as the principal researcher [were] of great help to us in gathering resources that we could not readily get prior to enacting the strategies... your resourcefulness [like what was used to teach the CPR lesson] saved us a lot of hustles in trying to get some critical resources for the simulated lessons.

A third challenge is the difficulty of letting go of the power and control teachers enjoy over the students during lessons. They felt uncomfortable about the idea of sharing or letting go the power and control in their classes and having learners take a more active role in the learning process. Kwame describes the situation as follows:

[H]aving power and control over the teaching and learning process distinguishes us from our students. But the SCT-based strategies seem to relegate us to mere facilitators and giving much space for students to be at the center of the learning process.

An additional challenge that confronts all my co-participants is the fact that because COEs have been upgraded to the status of universities, they are replicating the universities by blocking classes according to programs. For example, classes offering *Early Childhood Education* program are blocked for common (core) courses such as *Physical Education, English Language, HIV/AIDS Education and Other Tropical Diseases in Africa* etc. Blocking classes, in addition to the challenges discussed earlier, makes it more difficult educators to adopt SCT-based approaches in their classes because the number of students per class doubles if two classes are blocked.

5.3.4 Mini AR cycle 4:

Enactment 1 – Simulation

Kofi used rapid HIV test kits to simulate testing for HIV. S/he purchased the rapid self-test kits in a pharmacy since users can use it privately without supervision of health workers. S/he got a synthetic body fluid from a local clinic (in place of blood) for test. S/he said the most important aspects of the test is the interpretation of the test result. S/he explained that for a negative result, control (C) must be present and test (T) line absent. For a positive result, both control and test lines must be present. S/he then used the synthetic body fluid to create different test result and asked learners for interpretation.

Lesson summary

Introduction: getting test kits and synthetic body fluid ready

Activity: simulation process and test result interpretation

Evaluation: learners practice interpretation

Enactment 2 – Cooperative group learning

Kwame used the *triad* as a cooperative group learning strategy to teach factors mitigating against government efforts of curbing HIV/AIDS among the youth. Triad is putting learners into a group of three to discuss the topic under consideration and presenting an oral report (summary) at the end of the session. The aim of getting learners into a small of three is to get them talking and involved deeply in the teaching learning process. The facilitator used this strategy to get learners talking after introducing the lesson by asking the group to discuss factors they think are making government efforts at curbing the HIV/AIDS menace extremely difficult. S/he asked learners to present a 3-point summary at the end of the discussion.

Lesson summary

Introduction: putting learners into a group of three

Activity: group discussion of topic

Evaluation: learners present 3-point summary

Enactment 3 – Narrative and Stories

Korsi developed her/his own story concerning ‘the consequences of drug abuse among young men in his village’. S/he said the importance of the story is to caution young people against drug abuse because they risk getting injuries including HIV if they use unsterilized sharp

objects. The facilitator asked the participants, in their role as student learners, to develop and share short stories concerning their experiences with drug addicts.

Lesson summary

Introduction: getting learners pay attention

Activity: learners listen to story

Evaluation: learners share stories

Enactment 4 – Role-play

Kordzo enacted a role-play on the importance of guidance and counseling for an HIV infected person to prevent reinfection and spreading of the virus. S/he asked two of the learners to act as characters in the play. S/he asked the learners to decide on their roles as a medical practitioner (counsellor) and an HIV infected person. The role of the counsellor was to give an expert advice to the counselee on behavior modification to stay healthy and prevent further spread of the virus. The facilitator debriefed them on their roles after the play.

Lesson summary

Introduction: guiding learners to select roles to play

Activity: presentation of role-play by characters

Evaluation: debrief learners on their roles

Reflective debrief 4

One key observation I have made throughout the enactment of the SCT approaches is the appreciation of the confidence level of my co-participants. My co-participants seem to have gained much confidence as they participated – as facilitators and learners – in enacting more of

the SCT-based strategies. Much of this confidence seems to be the result of better understanding the philosophical bases for SCT thinking, rather than just the techniques devoid of theoretical underpinnings. For example, according to Kordzo,

[W]e are familiar with putting students into groups for project works. We keep encouraging our students to use group works whenever they are conducting lessons in Basic schools. These SCT ideas have given me the understanding [and] confidence to better explain the philosophical basis for such group activities to my student teachers.

5.4 Reflection on AR Cycle 2

In this section, I summarize the views expressed under the various reflective debriefs. First, I need to bring to the fore one interesting event that got two of my co-participants debating after one of our mini cycles. One of them, Kordzo, was surprised that someone's story [experience] could be considered as a lesson [content] for students. His/her argument was in reference to the nurse who was invited to talk about her experiences dealing with HIV/AIDS patients. Kordzo's argument is that resource persons do talk about facts [specialized in a specific body of knowledge] and not their personal experiences. According to Kordzo, "even though I appreciate the nurse's [emotional] story, I was actually expecting the nurse to talk about what the standard practice [the laydown procedure] are [and] not her relationships with the patients'. The scenario [the informal debate] above, to me, is testament to the fact that learning is taking place in the CoP. What I did was to revisit literature to remind them to appreciate the fact that SCT and related theories offer an alternative to the long-held notion that there is always something called 'truth' is out there to be discovered in every situation. These alternative theories recognize learning and knowing as people's realities.

Second, my co-participants felt the research process provided them with a great opportunity to change their teaching styles and to become good models to their teacher trainees so that they could also emulate impactful ways of teaching. As Kofi puts it: “this is the only opportunity we have to play around these SCT inspired ideas we are trying to ‘master’ through this research process [...] to become examples for our students to copy us when in their practice.”

Third, my co-participants expressed the view that their attempts at the SCT-based approaches were quite successful. They felt the SCT approaches tend to empower both teachers and ‘students’ because of their interactive nature. The SCT-based approaches, which are learner-centred, tend to relinquish some of the teacher-imposed rigid structure that is present in their classes to allow students to be at the center of the learning process. As Kordzo observes:

I felt that the SCT-based approaches made it possible for the me to guide the learning process and not tell the ‘students’ what the course book says...the approaches also allowed the ‘student’ to share ideas and support each other in the group.

Fourth, my co-participants learned how to cooperate with each other through the *enactments* during the four mini cycles. The short reflective debrief sessions under this cycle [2], served as a very important stage of this AR study because they provided my co-participants and myself with a learning space for us to nurture the CoP [of HPE practitioners] established. I humbly submit that this AR study has borne some fruits in ‘uniting’ the participants from TERESCO and FRANCO to visit to each other to discuss plans of expanding the CoP to embrace other COESA members. This point is important to make because the only times they previously met up were to plan for zonal sports programs.

Finally, it is important to note that I was a leader at the centre of the research process in cycle one and prior. My co-participants at this stage were listening, observing, asking questions and participating in the activities that I facilitated. The activities that put me at the centre are as follows:

- I organized the office space used for research
- I was in control of timing of events
- I handed out reading notes to my co-participants
- I made a presentation on the theoretical approaches
- I enacted a model SCT-based strategy
- I handed out lunch packs
- I audiotaped discussions and at played part of the recording for the hearing participants for clarity prior to adjourning sitting

However, in cycle 2 and beyond, I stepped back, to allow and encourage my co-participants to step forward and take on more active and leading roles. My role at this stage was to facilitate and coordinate events. Shift in roles by my co-participants from the periphery to more central participation is key in learning within CoP, to show how a learner (as a novice) develops or learns to become an expert. In cycle 2, my co-participants took on more central roles in the following activities:

- They enacted SCT-based strategies
- One of them offered to time events
- They went in for their own lunch packs
- They helped organized the office space

- They handed out a one-page note prior to enacting the SCT-based strategies
- One of them volunteered to audiotaped with an additional device

Chapter 6: AR Cycle 3

6.1 Widening Effects of the AR Process in CoP Established

This AR cycle deals with our activities as a learning group beyond the first two cycles of this AR study. Discussion during this cycle centred around the following:

The planning phase included:

- 1) Co-participants planning to carry out the SCT inspired lessons
- 2) The co-participants and I planning to influence curriculum in COEs and universities in Ghana
- 3) Our planning to keep the CoP going and a Foundation.
- 4) Propagating SCT and related ideas in COEs

The next phase of this cycle, which can be considered action and observation, involved the following activities:

- 1) Co-participants actually carrying out the new lessons
- 2) Developing a *Teaching Strategies for Health Professions Education* lesson manual for the Education Faculty in one of the universities in Ghana
- 3) Influencing curriculum in COEs
- 4) Actually keeping the CoP going and expanding, as well as preparatory steps in forming a Foundation. All of these activities are on-going and have only just begun.

Finally, we collectively reflected on activities under planning and action phases.

6.2 Planning

Plan 1

At the beginning of this research, there was a shared understanding among my co-participants and I that its results might be used to nurture change in pedagogy and the curriculum, at least in the participating COEs from the grass-root level of our CoP. My co-participants have kept faith with that shared understanding and are planning to carry out their lessons using the SCT-based strategies.

As part of the plans to keep enacting SCT lessons, we needed the support of management of participating colleges. We tried to carry along management by sharing a brief synopsis of key results with them. In light of this, myself, two of my co-participants and one representative each from the academic board of the participating colleges met via zoom to discuss the AR outcome relevant to teacher development.

We discussed key results of the AR that emerged relative to pedagogy and curriculum change to give some control to educators at the colleges. One result was the perceived need for a shift away from reducing educators in COE to mere implementers of curriculum and examiners. We made a case, very forcefully, that the practice of supervisory universities sending curricular and test items (including quizzes) to be implemented in the colleges is not only outdated but also does not engender creativity among educators at the CoE. We argued that, at worst, educators in COEs should be given a general framework (as in Canadian schools) to develop their own lesson focuses based on the socio-cultural settings within which their colleges are situated. The 'one-fit-for-all models' do not promote critical thinking among teacher trainees in the country.

In addition, we discussed how my co-participants did a good job in enacting innovative SCT-based approaches during the AR process. Reacting to the participants' performances in the

AR process, one of the academic board members at the meeting asked to find out the impact the AR process had on the participants.

Kordzo, one of my co-participants answers:

[H]itherto, I struggled to find common words [or examples] students are familiar [with] to explain concepts in *HIV/AIDS and Other Tropical Diseases in Africa*. But since the SCT-based lessons accommodate students' voices and participation, [...] I can tell you that in some instances, the participant [learner] discovers the meaning of concepts, which make your work as facilitator much easier. And that we need your support to provide us with learning resources so we can prepare well so the students can have exciting learning experiences.

The management representatives seemed impressed by our presentation and promised to discuss our request for support with their respective academic board.

Plan 2

As I discussed above, during the meeting with the management representatives from participating colleges, we planned to compile sample lesson plans developed in course of the research for use in *HIV/AIDS and Other Tropical Diseases in Africa* classes. We hope that this manual, when fully completed, can serve as a useful resource for COEs. For now, the changes we planned to effect are limited to the level of the CoP, since we are aware of the limits that the COEs Act places on decision-makings at the colleges.

Plan 3

This AR study is seeking to impact curriculum in a rather interesting fashion. The initial goal of my co-participants and I was to seek continuous improvement in practice and curriculum through the CoP. However, during one of my visits to the Scholarship Secretariat in Accra to

follow up on my research-funding request (which was never approved though), I met with a former colleague who is a professor in Education at the University of Ghana. At that meeting, I shared my PhD program and research with him. In a rather surprising manner, right in my presence, he called another colleague, who is currently the Dean of the newly created Faculty of Educational Studies at the Kwame Nkrumah University of Science and Technology, to have a meeting with me for a possible collaboration. I met with the Dean, who was also in Accra during the peak of the COVID-19 the next day. In the meeting, we discussed topics around my PhD journey, the focus of the new education faculty, and the possibility of the new education faculty affiliating with UOttawa faculty of education. The meeting lasted for 3 hours and in the end, we agreed to collaborate to establish a masters level program in Health Professions in his faculty.

The Dean found me to be the right person to work with because of my unique educational background and working experiences. I had a Bachelor of Education (BEd) degree from the University of Cape Coast, Faculty of Education and a Master of Science in Health Education and Promotion degree from Kwame Nkrumah University of Science and Technology, Medical School. Again, I had spent significant amounts of time in Ghana embedded in a wide variety of academic and professional areas, in both education and health. Working with someone with background in education and health, the Dean is excited to pioneer the establishment of 'Health Professions Education' program of study in Ghana. We have started with the planning and preparatory works to roll out the program in a couple of years.

Plan 4

Another plan is propagate SCT and related ideas in COEs in Ghana. In that regard, my co-participants are planning to share the SCT ideas with colleague HPE practitioners who could

not participate in this research at their annual general meetings. By default, educators teaching *Physical Education* as well as *HIV/AIDS and Other Tropical Diseases in Africa* program in COEs belong to the Colleges of Education Sports Association (COESA). My co-participants who are bonafide members of both the national (COESA) and local (COESA-VOLTA) have promised to help in widening the reach of the CoP to include other members, starting from COESA-VOLTA. Since my co-participants have an appreciable mastery ['experts'] of SCT ideas, they will try to engage others ['beginners'], and once other colleagues have internalized SCT ideas, they can move from the periphery toward the center of the CoP.

In addition to efforts discussed above to widen the CoP, as a personal project, I planned to use my yet-to-be register Foundation in Ghana – DELA (Daring Ethical Leadership Advocacy) foundation – as a vehicle sustain the CoP. The plan is to motivate my co-participants to plan programs on leadership and innovation in teaching and learning spaces in Ghana to help train educators to have a shift in philosophy and practice. Thus, a shift from telling students what is in textbooks to adopting SCT-based ideas, which accommodate learners' voices and participation – something that is critical to meaningful learning experiences but a gap in local Ghanaian schools.

6.3 Action and Observation

This phase deals with the actions we have planned to carry out in our quest to expand and deepen our CoP and thereby propagate the use of innovative SCT-based strategies in teaching and learning in Ghana's COEs. This way, teachers trained will be able to integrate innovative strategies into their lessons to help kids develop critical thinking skills that could save their lives from the adverse effects of HIV/AIDS. The goal is to move away from 'forcing' kids to accept,

without question, any ‘good’ or ‘truth’ taught to them by teachers and adults in communities in Ghana. These ‘action plans’ were discussed among my co-participants and myself through telephone conversations after some of us had a virtual meeting with the management at the planning phase of this cycle.

Action 1

One concrete action we expected to result from the research conducted in the first two AR cycles was a shift in focused on pedagogy of the core CoP group [co-participants] in their *HIV/AIDS and Other Tropical Diseases in Africa* classes. Reports I have received from random telephone conversations with my co-participants indicate that these changes are taking place. Kwame, one of my co-participants told me that, in addition to trying to adapt SCT-based strategies in her/his lessons, s/he is doing more by facilitating SCT-based lessons for final year students to prepare them for their internship (teaching practice) program in local basic schools. S/he says s/he uses SCT inspired lessons and sample lessons notes to guide students to develop and enact their own lessons:

I am trying to help my final year students get familiar with the SCT-based strategies so they can start using them in the basic schools they are going for their teaching practice. And what I did was to give them a demonstration on enacting some of the SCT-based [strategies]. I have them, [in] groups of five, develop their own SCT inspired lessons plans for concepts in HIV/AIDS.

Action 2

Our findings and recommendations for curricular innovations that resulted from the research had to be channelled through several institutional levels. For now, we are working with

management of participating colleges, though with limited administrative powers under the COEs Act, to offer motivation and a conducive space for educators to adapt the sample SCT lesson plans that we (the CoP) have developed. We are making efforts to get in touch with officers in charge in curriculum development at Ghana's Ministry of Education to discuss our findings and recommendations for a possible review and change in COEs. We believe that finding allies in some education faculties in some Ghanaian universities, as I have discussed above, will boost our efforts of getting our findings and recommendations reach the right people at the ministry.

Action 3

With respect to collaborating with the new education faculty to develop *Health Professions Education* program at the newly created Faculty of Educational Studies at the Kwame Nkrumah University of Science and Technology, The Dean told me last year that he has submitted a list of suggested courses to the vice chancellor for review and that the proposed masters in *Health Professions Education* program is undergoing a process of accreditation at the relevant agencies in and outside the university. We are hopeful these concrete actions will yield the desired outcomes. I got an email from the Dean few weeks ago to keep in touch with him.

Action 4

My co-participants and I are making efforts to maintain and expand the CoP. One way of keeping the CoP going is to keep in touch through various channels of communication. We started with a WhatsApp chat group during the AR process in Ghana but we shifted to calls since I had to change my cell phone here in Canada because of technical issues. I am trying to get my

co-participants accustomed to emails, since this mode of communication is more reliable to leave a trail of records for reference purposes. We have had three conference calls since my return to Canada in 2020. I initiated the first conference to thank my co-participants for sacrificing in the peak of COVID-19 to take in the AR study. We also discuss the themes generated from the data. I, again, initiated the second conference call in 2021 when COEs reopened after the peak of the COVID-19 pandemic to share our ideas with the management representatives of participating colleges and the need to encourage their teaching staff to adapt SCT inspired ideas in their lessons. The third set of calls came from my co-participants, to give me updates on their efforts to continue enacting SCT-based strategies in their lessons.

My co-participants made a commitment to continue sharing ideas, learning and helping each other to improve upon practice. They promised to meet on a need-basis to discuss professional issues relating to pedagogy, assessment, legal and welfare. As I discussed earlier under the planning phase of cycle 3, my co-participants are making efforts to expand the CoP through networking and collaborating in the local and national associations they belong to in the COEs space.

Additionally, the CoP and the DELA foundation [at the formative stage] will the tools to help us carry out our goal of engaging with stakeholders in the education sector on the need to adopt SCT-based approaches as an alternative to current practices. I am waiting to go through the company registration process by the end of the year. Once I get the foundation registered, we are hopeful that our programs will made some impact (albeit modest) in the Ghana's education space. One of the objectives of the foundation is "to provide learning resources to equip educators with contemporary issues and innovative teaching and learning strategies within the educational ecosystem". To achieve this objective, we hope develop partnership with

technological firms to develop educational resources and strategies for use by educators in COEs to help in their SCT inspired lessons.

Finally, once this thesis is accepted, I will be sharing my research summary at conferences in teacher training as well as health training institutions in Ghana and other SSA countries, to bring to the fore the need for a shift in curriculum and pedagogy from ‘listen and tell’ to participate and internalized – for meaningful learning experiences.

6.4 Reflection

In this phase, I reflect on the events discussed earlier under *plan* and *action* phases in this chapter, distilling them to identify themes. I also reflect on lessons that have emerged during the research as a whole, as well as what and how my co-participants and I hope to carry these lessons forward into future collaborative activities. This phase could generate data to start a new AR cycle, if this study were to continue beyond cycle 3 in the field. This is because the reflections contained herein may well help in planning for further collaboration around the SCT inspired ideas. This research took new SCT ideas and related theories of learning – including CoP and AR [as a research tool] – and explored their relevance in the specific context of the teacher education in Ghana. In addition to confirming the relevance of the new SCT ideas in this particular context, the research articulated alternatives to mainstream traditional ways of enacting *HIV/AIDS and Other Tropical Diseases in Africa* lessons.

In the specific case of reflecting on emerging themes, it is of course quite difficult to foresee precisely how and where these ideas will develop in the future. At best, I can only speculate that my co-participants are committed to the CoP, to continue sharing and learning around SCT inspired ideas. Furthermore, I plan to take up a teaching appointment at Kwame

Nkrumah University of Science and Technology as I help to develop a 'Teaching Strategies for Health Professions Education' program [based primarily on SCT ideas] to offer alternatives to current practices. Taking up a teaching appointment in the near future in Ghana will get me closer to members of the CoP to continue with our plans in popularizing the SCT ideas in COEs and expanding the concept of CoP in the knowledge economy in Ghana.

It is my hope that future collaboration and activities in which I am involved will give rise to similar insights and processes of mutual change achieved in this study. Such developments will no doubt be difficult to predict currently, as we may never know future conditions but can only adapt to possibilities that present themselves through interaction. If the CoP established can maintain the trust and relationships build through the lessons and changes that this study presents, then the hope is that we can become collectively smarter and more responsive to the needs of our students.

Chapter 7: Reflective Discussion of Themes

The ideas that emerged during the research process were articulated, shared, and enacted by the four co-participants and I in relation to the CoP. It is important, therefore, to reflect further on the roles played by myself and my co-participants, and the effects that our interaction had on our contexts and us. This chapter discusses emergent themes generated from this AR study. As I indicated under data gathering and analysis, NVivo helped me to delineate themes. The themes that emerged are as follows:

Theme 1: AR as a systematic professional development strategy

Theme 2: SCT strategies for meaningful leaning

Theme 3: Resource constraints for enacting SCT-based approaches

Theme 4: CoP as a powerful learning tool for groups.

Theme 5: The current educational system hinders innovation

Before I began reflecting on emergent themes, it important to return to the research question that guided this AR study. Re-stating the question here will give readers the opportunity to situate the themes alongside questions that guide the study.

Question: How does integrating a collaborative AR project centred around SCT-based teaching and learning strategies in HIV/AIDS education classes influence teacher educators' teaching beliefs and practices?

7.1: Theme 1: AR as a systematic professional development strategy

In professions such as medicine, there seem to be a very close link between practice and research. For example, in the medical field, a group of doctors treating a patient can also use the

treatment procedure as a research studies. Lessons and findings from these studies can enhance their professional development. However, such situations do not [normally exist in the field of education; for this reason, research is usually conducted by university-based researchers who are often far detached from the classroom. This divide between research and practice is such that professional development activities are often determined and sponsored by external [outside the school] agencies such as the ministry of education, in the Ghanaian context. The consequence is that all decisions concerning curricular and pedagogy are made by the sponsors, without regard to the needs and context of the teachers and the students who are going to be the end-point recipients. These isolated in-service workshops that feature ‘knowledgeable’ experts telling educators how to do something; yet these workshops do not motivate educators to improve upon practice in a locally relevant and nuanced way.

By contrast, AR offers educators a systematic means of learning and improving upon practice through research within their specific contexts. Through this research study, my co-participants have developed a level of expertise in AR that will hopefully help them in conducting future AR studies to keep improving upon their own practice and help guide their final year students in their mandatory AR projects. This AR study has helped my co-participants to become more critical, questioning their own practice. As one of my co-participants emphasized: “I think I have a grasp of the principles that underpinned AR and going forward, I can properly guide students’ AR projects [that] I supervise.”

Before I proceed, it is worthwhile to recall that AR can be flexibly and creatively adapted to issues that emerge during a research process (Winter, 2002). Because of its focus on concrete situations and practices, AR and its principles provide an especially useful lens for learning from and reflecting on research and practice. As described in chapter 2, the distinctive features of AR

include its collaborative orientation, a respect for the principles of democratic participation, the aim of creating change, reflexivity on the part of researchers, and a spiral process of reflection, planning, acting, observing, reflection, and so on. Again, one key principle of AR is that it is more participatory in nature and seeks to empower the research participants. According to Creswell (2002), collaborative AR incorporates “an emancipatory aim of improving and empowering individuals and organizations in educational (and other) settings” (p. 609). As we shall see, each of these principles offers a useful entry point for critical examination.

Collaboration: AR typically seeks to deviate from the traditional one-way relationship between the researcher and participants, and to involve them in the research process. The relationships between my co-participants and me in this AR study indeed can be described as a very collaborative – and not a one-way, linear relationship. The collaborative relationship is evident in the fact that my knowledge of learning theories (particularly SCT) and the participants’ knowledge and experience of HIV/AIDS and teacher education contributed to this AR process and its outcomes. Some interesting insights and actions emerged from this interaction—for example, the power of learning in CoP and the use of SCT-based ideas and strategies in HIV/AIDS and Other Tropical Diseases in Africa lessons.

Democratic Principles: For collaboration in AR to be meaningful, there is the need for the research process to be democratic, that is, to involve the active participation of those involved in and affected by the research. Participants must feel that without their contribution, the ideas that emerge could not have been valid (Valla 2002, p. 173).

In this AR study, although the participants (including myself) did not invent the original SCT-inspired ideas, we were certainly responsible for how these ideas were enacted and for the changes suggested thereafter for pedagogy and curriculum in COEs. Indeed, the focus of this AR study was not so much about the original SCT and CoP ideas, but rather how these ideas were adopted and adapted for innovations in HIV/AIDS education.

In addition, my co-participants had an opportunity to provide input and criticism with respect to the results of the research. In order to solicit co-participants' input and critique, we had a conference call to discuss the key findings highlighted in this chapter.

New Changes: New changes that are grounded in and applicable to participants' concrete situations and practices is one important goal of AR. Such changes did in fact emerge because of our interaction in the research process. Changes included a shift in teaching philosophy and pedagogy of my co-participants as well as the development and efforts to expand of the CoP. Most of these insights were not foreseeable prior to the research study and they could not have emerged without the active participation of the co-participants.

Examples include the simple action of having my co-participants act and learn in groups as 'students' during the enactment phases of cycle 2 as well as their committing to become members of the CoP for sharing SCT ideas. These are monumental shifts from the petty rivalry between educators in COEs generated from the nationalization and competitive nature of examinations Ghana.

The activities of the CoP in the research process resulted in a shift of philosophy and practice of participants in developing new SCT-based lesson plans. All of the co-participants agreed that the most important factor in *HIV/AIDS and Other Tropical Diseases in Africa* classes

is guiding their students through the SCT- based strategies in order to have meaningful and impactful learning experiences. For instance, P3 asserts, “when we succeed in guiding our students to discover the meanings of concepts and are able to mentally process them properly, they will perform even better in the exams.” Collective processes were thus at play in generating these new changes and the focus on teaching and learning by the co-participants.

Spiral nature: AR goes through a spiral process of reflection, planning, acting and observing. The spiral process of AR was extensively discussed in chapter 2 and there is no need to repeat it here. In brief, the spiral process of AR can help support continuing learning and improvement in practice to offer nuanced ways of teaching and learning culturally sensitive concepts such as the use of condoms. The spiral process of AR also nurtures reflexivity on the part of researchers. Throughout the focus group discussions, I have tried to foreground my background and thinking, and to be open to my co-participants’ perspectives. I believed I had taken responsible action in relation to my role as one participant within the unfolding events in the research process, while at the same time respecting the privacy and autonomy of the co-participants involved. The mutual respect we have developed for each other through the CoP made me trust that they would they be able to communicate and enact the SCT ideas in their classes.

Empowerment: One important concern of many action researchers is empowerment or emancipation of research participants. As Kemmis and McTaggart (2000) write of the more participatory sorts of AR,

AR aims to set in motion processes by which participants collectively make critical analyses of the nature of their practices, their understandings, and the settings in which they practice in

order to confront and overcome irrationality, injustice, alienation, and suffering *in these practice settings and in relation to the consequences of their practices in these settings* (p. 592; italics in original)

This research study has given some level of awakening to my co-participants. During the research cycles, SCT and CoP ideas seem to have excited and empowered my co-participants at least to begin communicating and enacting them in their colleges. They commented on how the ideas we explored and discovered helped them in enacting the SCT-based strategies in their peer teaching. One of the participants (Kwame) commented that the ideas had given her/him an “insight” into theories underlying mundane college activities such as, putting students into drama groups, sports teams and coaching, debating clubs, science clubs and students belonging to program associations (like the early childhood students association, special needs education students association, etc.). Another said the ideas made her/him feel “more confident” to try new strategies of teaching than in past years.

The sense I get is that there is a consensus among my co-participants that the ideas were interesting and they better understood the principles that underpinned AR, and promised to guide their final year teacher trainees in their mandatory AR projects. In effect, this AR study has served as a systematic tool for my co-participants and I to research and learn to enact and internalize SCT inspired ideas within the context of the CoP.

7.2: Theme 2: SCT strategies for meaningful learning

A significant focus of this AR study was on cultivating innovative SCT-based teaching approaches that are grounded in the specific context of COEs in Ghana. At COEs in Ghana, the main objective is to train teachers for basic 1 to 9 (pre-secondary school levels) and it imperative

to have student teachers properly trained in innovative teaching strategies to help them nurture children with critical thinking skills in the 21st century. My co-participants and I, therefore, found that the SCT-inspired ideas enacted during the AR process through the CoP were quite relevant to teaching controversial and culturally sensitive topics in HIV/AIDS education.

Additionally, by combining SCT ideas and the experiences of my co-participants in HIV/AIDS and Other Tropical Diseases in Africa, we were able to develop new knowledge. To be more specific, through our interactions during the research process, we were able to develop sample SCT-based lesson plans to serve a guide (scaffolds) to help my co-participants and new entrants into the CoP to develop SCT-inspired ideas for their lessons to help student have meaningful learning experiences.

SCT-based approaches, in this AR study, offered my co-participants meaningful ways of enacting difficult concepts in HIV/AIDS and Other Tropical Diseases in Africa. This way, the SCT based approaches have helped them in learning how to negotiate the difficulty they, hitherto, faced trying to get their students understand some controversial concepts in HIV/AIDS education. The sentiment expressed above is in accord with what Vygotsky articulated the dynamic interdependence between the social and the individual processes of learning, whereby the individual's development is embedded in, and shaped by his/her social world [CoP] (Davis, 2004). Vygotsky believed that learning is first collective, embodied in the social practices of the community, and that community is the bearer of the cultural heritage without which the development of the human mind is impossible (Davydov & Kerr, 1995). SCT ideas suggest that it is impossible to separate individuals from their social influences, and that learning is culturally and contextually specific (Kim, 2016).

SCT-based approaches enacted in this AR study put the co-participants who acted as ‘students’ at the center of the learning process. Thus, the SCT-based approaches recognize the voice and active participation of students in the teaching and learning process. By embracing these approaches to teaching, my co-participants worked together in a learning community (CoP), a collaborative approach that was consistent with this AR process.

As we saw earlier in cycle 1 (chapter 5), there was a discussion of some experiential learning techniques in the current government-approved HIV/AIDS course book, which are consistent SCT approaches. But my co-participants were not motivated to enact them due to challenges such as resource constraints. However, through this AR process, the SCT-based approaches have offered them a meaningful way of negotiating some of these challenges. Kofi volunteered to give the following suggestion in enacting the experiential teaching techniques in her/his class:

Having tried the SCT-based strategies in this research study, I think, going forward, I can facilitate the learning of the experiential teaching techniques. First, I will enact one of the techniques in class. Second, I will get the students into 15 groups and have each group pick one of the techniques. Third, I will ask the groups to meet and develop lessons plan on how to enact any HIV/AIDS concept of their choice with the chosen technique. At this stage, I will make myself available on a specific day to guide, and answer questions concerning the lesson plans. Finally, I will have the groups enact the techniques over 3 HIV/AIDS education classes – 5 groups enacting in a class with 24 minutes.

This is a fairly well developed plan for enacting SCT-based approaches to facilitate learning of teaching methods in HIV/AIDS education adapted to student teachers in COEs. It suggests strongly that the SCT-based approaches are impactful and meaningful learning strategies for my co-participants within the context of the CoP during the AR process.

7.3: Theme 3: Resource constraints for enacting SCT-based approaches

Some structural constraints identified in this research that stand in the way of the sustainability of SCT-based approaches are insufficient time, large classes, too much emphasis on examination and lack of funding.

All of my co-participants, both in the focus group discussions and informal discussions, lament that they lacked sufficient time to incorporate the SCT-based approaches significantly into their day-to-day classroom activities. SCT-based strategies required a lot of time to plan and enact. One co-participant (Korsi) described the situation in the following way:

To properly use these SCT-based approaches, you need a lot of time...And *HIV/AIDS and Other Tropical Diseases in Africa* course is given only 2 hours per week on the time-table....We don't have enough time to go through all the hustle of preparing and enacting all these SCT-based approaches.

An average class size in the COEs is 45 but with the upgrading of colleges to university status, most COEs are blocking classes into programs like the traditional universities do. My co-participants told me the blocked classes adversely affect interactive teaching because groupings become too large or too many for one educator to facilitate interactive teaching. They therefore resort to the use of lecture methods in order to complete the course outline (curriculum) in time and get students ready for examinations. Again, because the performance of educators is based on the pass rate of students, the motivation to resort to lectures is very high, as the goal is getting students to memorize concepts and facts in order to pass examinations.

Since teacher educators have very limited budgets for the courses they teach, there are no funds available for them to purchase learning materials for their classes. At best, they are encouraged to improvise, and it is impossible to improvise disposable medical materials for teaching some concepts in HIV/AIDS education, which demotivates educators to use SCT-

inspired approaches. Another participant (Kwame) summarizes his/her concerns: “And how can we get educational resources for the large number of students we teach in the colleges, where there is practically no money allocated for such resources.”

One other factor identified in the study that demotivates educators from involving students at the centre of the teaching and learning process is the fear of losing power they have in the classroom. As I have discussed earlier cycle 2, one thing educators enjoy is the power and control over their students in class. The threat of losing some of the power, respect and control they enjoy in micromanaging events in their classes to their students, demotivates some educators in trying the SCT-based strategies in their lessons. A third participant (Kofi) describes the situation as:

having power and control over the teaching and learning process distinguishes us from our students. But the SCT-based strategies seem to relegate us to mere facilitators and [to] giving much space for students to be at the center of the learning process.

In dealing with the challenges enumerated above, we have appealed to the management of the participating colleges to keep encouraging and supporting their staff to use the SCT-based approaches in their classes. The actions of my co-participants so far demonstrate that this AR study has been successful in igniting some enthusiasm in the CoP to keep using the SCT-based approaches in their classes as much as they can in the face of the myriad of challenges that confront them.

7.4: Theme 4: CoP as a powerful learning group

This study within the context of the CoP has given my co-participants and I space to focus on learning through reflection on practice. As we can see in the past chapter, my co-

participants belonged to associations such as COESA in the COEs space. These associations do meet to plan and organize inter-college and national games for the COEs. However, very little is done to promote professional development of members beyond the organization of sports programs. This is partly due to the way the COE system is structured historically and within the confines of its current law, where power continues to be concentrated at the top – in relevant agencies within the Ministry of Education and not in the colleges. Professional development activities are, therefore, determined and sponsored by the Ministry of Education. Generally, most of the professional development programs sponsored and funded externally are single event activities that end once the funds are exhausted.

With little to gain in the professional associations in the COEs, the allegiance of members is generally weak. This AR study seems to begin filling that gap by offering high-value learning activities for participants who are motivated to improve upon their practices. I hope that they will reach out to other COESA members unable to participate in the research. The peer-to-peer learning activities typical of CoPs has taken place in this AR study, which has offered a complementary alternative to more traditional way of teaching and learning by the participants in this study.

There was a mutual exchange of ideas and experiences among my co-participants and myself. I learned a great deal about current practices in COEs, specifically the *HIV/AIDS and Other Tropical Diseases in Africa* curriculum and ACT 847 that governs the administration of COEs. Furthermore, the interactions greatly affected my own thinking about the future activities of the CoP as it continues to shape the thinking and practices of my co-participants concerning *HIV/AIDS and Other Tropical Diseases in Africa* curriculum in their colleges.

It is important to point out that it was practically impossible for every participant to contribute in equal measures in the CoP during the research process. This is in line with literature that states that members of CoPs play roles at varying degrees of importance to the growth of the community and its members. As Wenger et al (2002) put it; even peripheral individuals may play important roles in CoPs and the growth of the communities.

Furthermore, during the research cycles, my co-participants built on one another's ideas through the integration of ideas from a preceding reflection into planning a new cycle. Thus, once a new idea emerged, it further shaped our thinking – and in turn contributed back to the ongoing cycle of planning, action, observation and reflection – to generate new ideas (knowledge).

According to Wenger (1998), development experts are beginning to recognize that the challenge of developing nations is as much a knowledge challenge as it is a financial challenge. He believes that a CoP approach can provide a new paradigm to support development activities in developing nations such as Ghana. Knowledge building among practitioners such as what this AR study has achieved can be seen as a trigger – if it influences relevant authorities – to begin conversation, research and learning on CoPs and related ideas to improve teaching in Ghana's education sector. This endeavor, which I describe as 'context sustaining learning' can have positive consequences in development agendas in Ghana than knowledge transfers from other contexts.

Finally, it is evident from the study that my co-participants found it valuable to work as a group and collaborate for improvement in practice. They are desirous to maintain the CoP to drive home the change in pedagogy and curriculum from the bottom up.

7.5: Theme 5: The current educational system hinders innovation

During the various reflection phases I had with my co-participants, I could hear them [as I was transcribing the data] complaining about how the inherited colonial educational system has reduced teachers to become machine-like – implementing policies and programs from higher levels without asking questions. Upon reflecting on the educational system, with particular focus on COEs, all my co-participants seem to have given up any hope of radical changes in the system – changes that could reflect the aspirations, culture, and speed up the development of the country. External donor funded reforms are piecemeal in nature and seek only to reinforce colonial power over Ghana and other SSA countries. They say the sparks ignited by this AR study has given them energy to keep thinking, learning and making efforts to begin the meaningful changes they desire to see in their colleges. For example, Kofi cannot believe why for several decades Ghana, the first SSA country to gain independence from Britain, could not figure out the right educational system to drive its developmental programs. Kofi questions the relevance of the current educational system and compares it with China and Japan in the following comment:

In our schools [...], apart from exposing students to ‘Ghanaian languages’ at certain stages in school [...] and some local cultural concepts in ‘Social Studies’, all other subjects and concepts are being studied in English. If our curricula are not related to our way of life, then when are we going to build and run [an] educational system that is Afrocentric and based on our own realities, like those of countries such as Japan and China?

Again, reflecting on the current practice and policies in COEs, Kordzo made a very interesting statement:

It’s like the only [thing] that has change after we gained independence is that the British were no longer among us and [no longer] in charge of our schools. Apart from that ... all other

structure remain the same until now [...] I wonder when we're going to see any significant change.

Korsi adds to the lamentations:

We can't even think of any new thing to try on your own. What even annoys me more is the cliché 'order from above' [...] All these things are not helping us invent anything [...] But rather [we] wait for leftovers and handouts from the Western world. As it stands now, we have no options but to stick to whatever comes from 'above' and try to help our students pass the examinations so we can earn our monthly pay.

The participants seemed to be very concerned about the educational system when I asked them to reflect on their current practice in HIV/AIDS education as teacher educators. Korsi, for instance, believed that it was impossible to throw away the current system inherited from the colonialists, but we could copy what China is doing by embracing useful concepts from the Western world and then blending them with our ideas – adapting them to our context – for our own benefit.

Korsi goes on to say that:

The COVID-19 pandemic has given us opportunity...to revisit, refine and integrate our [old] folkloric medical practices into the curriculum for study in our health training institutions [...] Instead of pushing them to the back burner as we did to our religious practices in our school system.

This observation that our educational system is not promoting innovation makes me re-think about what it really means to reform educational systems [policies]. The questions I reflected on are as follows: Who engineers an educational reform? What are the motives? Are all stakeholders involved in planning and formulation of reforms? What are the theories and principles that inform particular reforms? What were [are] the benefits of the past and present

reforms? The above questions are not meant to be answered in this thesis. However, I think that this unanticipated theme will be useful to consider as an additional area of research to enrich literature on improving upon educational policies, programs and practices.

Reflecting on the above theme further in AR cycles that came after cycle 1, my co-participants and I are of the view that leaders in the education sector in Ghana should make sure that concepts, theories and policies that are imported are grounded in our context so teachers can have a sense of partnership to sustain the programs. This AR study attempts to deal with the above suggestion. The study is grounded in the CoP [local community] and made participants partners in the research process. The study also seemed to have made an impact on the participants, who creatively enacted SCT inspired lessons and developed sample lesson plans. From the views expressed above by my co-participants, it is evident that this AR study is empowering educators to, at minimum, innovate in their classes and question the policies and programs thrown at them. It is the hope of my co-participants and myself that this research can make practical changes in teacher trainees in future.

Finally, reflecting on the research question restated at the beginning of this chapter, it is worth stating that this AR has provided a space for my co-participants to learn more about useful interactive strategies inspired by SCT and related theories to challenge their old assumptions about teaching and learning and to improve upon practice. It is also evident from the research process that my co-participants have had meaningful learning experiences within the CoP space in the conduct of this AR. These modest positive changes and future activities within the CoP established can and could have cascading effects in teaching and learning in COEs.

Chapter 8: Conclusion

In this final cycle, I discuss the contribution of this AR to the literature on education, particularly in Ghana and SSA. I also describe my assumptions as well as the limitations of the study. Furthermore, I discuss my final reflections on the research study.

8.1 Research contributions

In this final section, I discuss the contributions this AR study makes to practice in *HIV/AIDS and Other Tropical Diseases in Africa*, specifically and with regard to teacher education generally. I begin by talking about the influences on individual participants, the participating colleges and myself. Then I consider how the study can influence policy. Third, I made the point that this AR study created some useful knowledge that may contribute to literature on teacher education. Finally, I briefly examine how the research might influence the training of educators in health training institutions in Ghana.

At the level of practice, this AR study aimed to help teacher educators I worked with in Ghana to improve upon practice because they now have a range of SCT-based strategies that they have adapted to teaching sensitive concepts in HIV/AIDS lessons. In addition, all teacher education programs in Ghana have an “action research” component, although adherence to some commonly accepted AR principles is questionable (as I describe in the beginning chapters above). Participation in this research project may thus support teacher educators in helping teacher trainees improve upon their AR projects in their final year of training. Finally, the findings of this study may foster innovation and creativity in teacher education in Ghana. It has

the potential to affect a complete shift in lesson planning and delivery by fostering greater student engagement and local relevance.

Even though the research is still in progress, it has already contributed new ideas to the teaching staff at my host college. A week before I left the research site at the end of the research cycles, the vice principal asked me to share the SCT and related theories with the teaching staff [non-participants in the research] by way of professional development workshop. I took advantage of the opportunity to facilitate the workshop for six teaching staff – who were residing in college bungalows during the COVID-19 pandemic. I shared ideas with them on SCT sensibilities after we brainstormed on learning theories they are familiar with such as behaviorist theory, with B. F. Skinner as a key proponent.

At policy and theory levels, there remains a paucity of research on CoP ideas in Ghana; disseminating the findings of this study at educational conferences and open access journals may bring to the fore evidence of how bottom-up CoPs can engender change and improvement upon practice. This study contributes to the body of knowledge on AR by providing much needed information about collaborative AR conducted in connection with CoPs. In addition, this study seeks to create a space to reconceptualize teacher education in Ghana and other SSA counties.

Finally, this study provides very useful information on the common links between AR, CoP and SCT. It may therefore help the COEs community to learn more about these three (3) concepts to enhance quality in teacher training in Ghana. These concepts are relevant to help both educators and student teachers in understanding the principles behind many of the activities that take place during classroom interactions.

Another potential benefit is that other professional training institutions such as the health training institutions in Ghana may find this study useful for their programs. From my anecdotal

experience as a Health Education and Promotion graduate from one of the medical schools in Ghana, a majority of professors and instructors in our health training institutions are specialists and do not have a degree in education (pedagogy). In light of this gap, I believe lecturers in health training institutions in Ghana may find this AR study very helpful to adopt SCT-based approaches in their practice. The collaboration between the Dean and me (as discussed in chapter 7) to develop a Health Profession Education program at the Kwame Nkrumah University of Science and Technology's Faculty of Educational Studies aims to address this gap – to help lecturers in our health institutions to acquire a degree in education.

8.2 Researcher Assumptions

My experience as a former teacher educator in Ghana, coupled with recent experiences in my PhD classes, suggested the need to explore new SCT strategies through collaborative action research in COEs in Ghana. Finding myself in a hybrid position as both an insider and outsider in this context, I was mindful of my assumptions and biases related to my position as a researcher. One example is my assumption that teaching and learning are not merely about accumulation of facts, but are complex social processes that require deeper involvement of both teachers and students. In line with this assumption, I did not impose what I have learnt in my PhD classes; rather my position was one of inquiry, facilitation and collaboration, to see what emerges from the members of the CoP and how that aligns with the literature. My view was that collaborative AR is a problem-solving tool that changes practice and improves confidence and effectiveness in one's own practice. This research study appears to confirm that view.

8.3 Limitations of the Study

One limitation is that this study was localized within St. Teresa's College of Education, where a smaller than originally planned group of co-participating teacher educators engaged in peer teaching to enact SCT-based strategies in HIV/AIDS/ education lessons. This situation arose due to the circumstances in the world, brought about the novel coronavirus (COVID 19) at the time of data collection: schools and colleges were closed and public gathering, in special cases, was restricted to a maximum of twenty-five (25) people. If the enactment phase of the AR cycles were carried out in real class situations – as originally planned – it would have allowed me the opportunity to visit the colleges involved in the study and help gather more data for the research; more importantly, the data would have involved students' appraisals.

Another limitation is that none of my co-participants had ever carried out any form of AR. What they did previously is follow a standardized handout on AR in guiding final year students in developing their mandatory AR project as a requirement for graduation. They are also very busy preparing their students to pass the national examination for COEs and may not have had time to explore AR more fully in their teaching practice. Instead of working with highly experienced action researchers to integrate SCT-based strategies into lessons in the colleges, this was a relatively inexperienced group, many of whom could only reflect on only a few experiences. This study therefore could lead to further research with other groups, including those who have more experience.

8.4 Final Reflection

As evidenced in this thesis, the SCT, CoP and AR approaches to learning and research have been accepted by my co-participants (CoP). This is particularly true of the innovative SCT-based teaching strategies that we collectively developed and enacted during the research process, which brought considerable change to the way my co-participants conduct their *HIV/AIDS and Other Tropical Diseases in Africa* classes. The SCT-inspired approaches have helped them to find creative ways of difficult to teach controversial concepts in these classes. Again, learning within the CoP has influenced the thinking of co-participants. These ideas also have significant implications for the wider literature on the education and pedagogy in *HIV/AIDS and Other Tropical Diseases in Africa* classes and COEs in general.

It is important to reflect on the issues of whether or not my collaboration with my co-participants had really followed AR principles. As described under Methodology in chapter 3, the distinctive features of AR include 1) its collaborative nature 2) its claim to respect principles of democratic participation, 3) its aim of creating new knowledge, and 4) a spiral process of reflection, planning, acting, observing, reflection, and so on.

The activities that my co-participants and I carried out in the research cycles appears to address all the requirements listed above. However, whether or not the collaboration sufficed to meet AR's requirement for true democratic participation is something that is difficult to state conclusively. I took a more central role in cycle 1 to model the SCT-based approaches, while my co-participants observed. At the end of cycle 1, my co-participants contributed during the reflection phase where they freely express their views on lessons learnt. Moving to cycle 2, I acted as a facilitator to guide my co-participants, who took a more central role in enacting the SCT-based approaches. Finally, in cycle 3, we were more concerned with how to maintain and

expand the CoP. At this stage, we shared ideas together and devised concrete plans for future actions.

My work with my co-participants was to engineer and facilitate a CoP to adopt and adapt SCT ideas through AR in a collaborative manner to create new changes in enacting the *HIV/AIDS and Other Tropical Diseases in Africa* course in CoEs. This seems to meet AR's aim of bringing about changes and new knowledge. This AR study created new ideas grounded in the knowledge and experiences of the participants. As Valla (2002) writes, participants must feel that without their contribution, the knowledge could not have been produced (p. 173). I believe that both my co-participants and I did indeed make significant contributions.

These considerations concerning collaboration and participation in knowledge creation are also very important from SCT perspective, since they point to the social generation of new ideas.

It was practically impossible to have my co-participants perfectly equally involved in discussions throughout the research process. Their involvement varied by the day and topic discussed. Nonetheless, the lower level of participation by certain participants at any point in time may not necessarily be an impediment to participation in an emergent collective. Wenger et al. (2002) observe that even those on the periphery, who appear to contribute little to discussions, may play a legitimate and essential role in communities of practice (p. 4). In any case, these issues of collaboration and participation in the CoP are ones that I will have to continue to consider even beyond the research process.

Another equally important requirement of AR is that it should at least approximate a spiral process of reflection, planning, acting, observing, reflection, and so on. The organizing structure of this thesis was to follow the 'spiral' nature of AR, but the actual research process

itself is, of course, not so easily compartmentalized. For instance, there were elements of action and observation in the planning phases as well.

One critical lesson learned from this AR study is that the changes could not easily be predicted. I could not have predicted, in advance, the changes –in teaching strategies, philosophy, and commitment to the CoP research – that this research process produced. This is because the SCT ideas were adapted to specific course contexts and not enacted or experimented in a ‘controlled setting’ under ‘perfect’ conditions. Negotiating change through practice is a complex and evolving endeavor involving complex human behavior. When a new idea or change is introduced to a group of people, it is generally very difficult to predict the resulting behavior of the people (Capra, 2002). Furthermore, the CoP that participated in this AR process – my co-participants and myself – influenced one another in a variety of complex ways because adapting SCT ideas in learning and researching is not a linear, one-way activity.

Indeed, as we can see in cycles 2 and 3, for example, sample SCT-based lessons continue to be developed to further enhance innovations in *HIV/AIDS and Other Tropical Diseases in Africa* lesson delivery in COEs across Ghana. There is not a predictable or easily identifiable endpoint to this evolution.

It is equally important to note my co-participants welcomed the idea of working together with me in CoP to explore SCT approaches through this AR and that there was no resistance to these theories. I think that a number of following factors may have contributed to my co-participants embracing these concepts and being amenable to changing their practices. These factors include the fact they know me and that I am a former colleague who is familiar with some practices in the colleges; the fact that I offered them lunch and transportation fees as required by ethics; and the fact that I am coming from Canada – an advanced country with superior economic

and education standards than Ghana. I am not sure I would have been as successful in getting my co-participants to open up to me and my theories if the above three factors were not the case.

The biggest lesson for me in this study that I see AR as a research methodology that formalizes intelligent real-life actions – yet also contributes in an academic sense.

Again, it is interesting to note that my call for more grounded, Ghanaian culturally appropriate approaches is actually inspired by the Western and Soviet developed ideas (AR, SCT, CoP), which recognize the importance of situatedness, local context and participation in knowledge generation. As the SCT-strategies my co-participants have developed in this AR were influenced by Western and Soviet SCT ideas, in like manner, SCT was also influenced, at least in a small way, by how it is used in a Ghanaian context. I can say that how SCT and CoP were adopted in this AR could be understood as a sort of post-colonial elaboration of these theories with branches being nurtured in a Ghanaian context.

8.5 Developing Thinking

This section discusses further steps or issues to consider if pursuing further research based on this AR-inspired thesis.

First, my co-participants and I think that the SCT-approaches tested in this research particularly, role-plays and storytelling are already important aspects of oral tradition in Ghana and many SSA countries. For instance, these approaches are vital instruments of instruction, which have historically served as key vehicles for intergenerational transfer of different forms of traditional knowledge and practices in many aspects of Africa's social and political life. Yet, somehow, they continue to remain on the periphery of the formal education system. At best, these approaches are described in Ghanaian COEs as non-formal educational approaches.

Interestingly, organizations such as non-governmental organizations use more SCT-oriented approaches (story-telling, popular theatre, discussion in mother tongue, etc.) in their educational programs in communities across SSA countries. This thesis attempts to push these otherwise familiar, effective and culturally appropriate forms of instruction to the centre of the formal education system in Ghana and other African countries. It is our hope that this research will influence policy in Ghana's education space. We think that the utilitarian education system in Ghana – which focuses on examination scores to produce the elite, professional class – must be re-examined. We think that Ghana's education need a review through a more transformative lens that utilizes SCT-oriented approaches to help learners develop critical thinking skills to drive the developmental needs of the country.

Second, my co-participants and I are of the view that it is important to develop an education policy from a more culturally grounded way if Ghana aims to have a sustainable economic development. A transformative review of Ghana's education system needs to be rooted in its cultural context and historical realities. For example, curriculum must focus more on Ghanaian ethos, cultural values, local languages and concepts, agriculture, mining, tourism and health. This research has raised our awareness of Ghana's colonial education system and of anti-colonial possibilities for transformation. Ghana has experimented with the elitist western colonial educational architecture for decades with little progress, because the current system is designed on purpose to keep the country under (neo) colonial control and its people timid, uncritical, and only capable of following laid down procedures to maintain the status quo. For example, it is evident that external donor funded reforms of education are piecemeal in nature and seek to reinforce their colonial power over Ghana in a form of conditionalities that come with support. A case in point was a financial support from United State Agency for International Development to

Ghana under the terms of a cooperative agreement number 641-A-00-04-00249 to include HIV/AIDS as course for study in COEs. The revised training manual titled *Window of Hope*, was jointly developed by the Ghana's Ministry of Education and World Education, Ghana office in 2006 (Ministry of Education, Science & Sports/GES; USAID and World Education/Ghana, 2006).

The authority and power cascades down the ladder in the teacher education space. Principals of COEs are expected to follow instructions and directives from the ministry of education without critique for fear of being victimized. The principals in turn threaten educators in their colleges with appointment terminations if they raise questions regarding administrative directives. Finally, educators put fear in their teacher trainees by using examination as a weapon. The consequence is that the system has reduced the Ghanaian teachers to uncreative, timid robots that can only implement policies from higher authorities. Another consequence of this hierarchy is the belief that standards set by people in authority (elite class) must be religiously followed. An example in this research is Kordzo's argument in reference to the nurse Kwame invited to talk about her experiences (story) dealing with HIV/AIDS patients; Kordzo argued that as a resource person she should have talked the standard care procedures and not her personal experiences. As Kordzo puts it, "even though I appreciate the nurse's [emotional] story, I was actually expecting the nurse to talk about what the standard practice [the laydown procedure] are [and] not her relationships with the patients'.

Finally, it is important to restate that my co-participants and I created a manual of the SCT-inspired strategies tested in this research, to serve as a guide for educators in the COEs. Again, I will be making efforts to get the key ideas and recommendations from this AR to Ministry of Education for consideration and integration into education system.

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Appendices

Appendix A: Ethics Approval Letter

11/06/2020

<p>Université d'Ottawa Bureau d'éthique et d'intégrité de la recherche</p>	<p>University of Ottawa Office of Research Ethics and Integrity</p>						
CERTIFICAT D'APPROBATION ÉTHIQUE CERTIFICATE OF ETHICS APPROVAL							
<p>Numéro du dossier / Ethics File Number Titre du projet / Project Title</p>	<p>S-10-19-4954 Community of Practice to Nurture Sociocultural Teaching Innovations in HIV/AIDS education among Teacher Educators in Ghana: A Collaborative Action Research Project</p>						
<p>Type de projet / Project Type</p>	<p>Thèse de doctorat / Doctoral thesis</p>						
<p>Statut du projet / Project Status Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy) Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)</p>	<p>Approuvé / Approved 11/06/2020 10/06/2021</p>						
Équipe de recherche / Research Team							
<p>Chercheur / Researcher Kunche NYAVOR Angus MCMURTRY</p>	<table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">Affiliation</th> <th style="text-align: left;">Role</th> </tr> </thead> <tbody> <tr> <td>Faculté d'éducation / Faculty of Education</td> <td>Chercheur Principal / Principal Investigator</td> </tr> <tr> <td>Faculté d'éducation / Faculty of Education</td> <td>Superviseur / Supervisor</td> </tr> </tbody> </table>	Affiliation	Role	Faculté d'éducation / Faculty of Education	Chercheur Principal / Principal Investigator	Faculté d'éducation / Faculty of Education	Superviseur / Supervisor
Affiliation	Role						
Faculté d'éducation / Faculty of Education	Chercheur Principal / Principal Investigator						
Faculté d'éducation / Faculty of Education	Superviseur / Supervisor						
Conditions spéciales ou commentaires / Special conditions or comments							
<p>This certificate is issued with the understanding that it is the Principal Investigator's responsibility to ensure that their research protocols comply with the most up to date public health advice (e.g., regional, provincial, federal), as well as Institutional/Organizational advisories, when their project involves in-person recruitment and/or data collection. The safety and health of participants and research team members are paramount, which is why safe research practices must be developed, and updated as needed. This may include, but is not limited to potential measures regarding: training of research team members, use of personal protective equipment, standards of sanitization, handwashing, physical distancing, etc.</p>							

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11/06/2020

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

Le Comité d'éthique de la recherche (CÉR) de l'Université d'Ottawa, opérant conformément à l'*Énoncé de politique des Trois conseils* (2014) et toutes autres lois et tous règlements applicables, a examiné et approuvé la demande d'éthique du projet de recherche ci-nommé.

L'approbation est valide pour la durée indiquée plus haut et est sujette aux conditions énumérées dans la section intitulée "Conditions Spéciales ou Commentaires". Le formulaire « Renouvellement ou Fermeture de Projet » doit être complété quatre semaines avant la date d'échéance indiquée ci-haut afin de demander un renouvellement de cette approbation éthique ou afin de fermer le dossier.

Toutes modifications apportées au projet doivent être approuvées par le CÉR avant leur mise en place, sauf si le participant doit être retiré en raison d'un danger immédiat ou s'il s'agit d'un changement ayant trait à des éléments administratifs ou logistiques du projet. Les chercheurs doivent aviser le CÉR dans les plus brefs délais de tout changement pouvant augmenter le niveau de risque aux participants ou pouvant affecter considérablement le déroulement du projet, rapporter tout événement imprévu ou indésirable et soumettre toute nouvelle information pouvant nuire à la conduite du projet ou à la sécurité des participants.

Riana MARCOTTE

Responsable d'éthique en recherche / Protocol Officer

Pour/For Barbara GRAVES Président(e) du/ Chair of the Comité d'éthique de la recherche en sciences sociales et humanités / Social Sciences and Humanities Research Ethics Board

University of Ottawa

Office of Research Ethics and Integrity

The University of Ottawa Research Ethics Board, which operates in accordance with the *Tri-Council Policy Statement* (2014) and other applicable laws and regulations, has examined and approved the ethics application for the above-named research project.

Ethics approval is valid for the period indicated above and is subject to the conditions listed in the section entitled "Special Conditions or Comments". The "Renewal/Project Closure" form must be completed four weeks before the above-referenced expiry date to request a renewal of this ethics approval or closure of the file.

Any changes made to the project must be approved by the REB before being implemented, except when necessary to remove participants from immediate endangerment or when the modification(s) only pertain to administrative or logistical components of the project. Investigators must also promptly alert the REB of any changes that increase the risk to participant(s), any changes that considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project or the safety of the participant(s).

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Appendix B: Letter of Information

Study Information Sheet

Collaborative action research in teacher education in Ghana

Primary Investigator

Kunche Nyavor, BEd., MSc,

PhD Candidate

Faculty of Education

University of Ottawa

Thesis Supervisor

Angus McMurtry PhD., LLB

Associate Professor

University of Ottawa, Faculty of Education

Funding: Personal

Purpose: Your participation is being requested for a research study conducted by Kunche Nyavor, a PhD Candidate at the University of Ottawa. The study is being completed in partial fulfillment of a Doctoral Education program, Health Professions Education concentration. The purpose of this collaborative action research is to nurture creative and innovative teaching strategies for HIV/AIDS education and prevention.

Procedure: You are invited to participate in a tape recorded group discussion and teaching sessions. The sessions will be conducted in English. The group sessions will be conducted in the ICT lab of St Teresa's college of Education, Hohoe with a pre-arranged time convenient for you. During the interview, you will be asked to reflect and describe your experiences as a teacher educator. The recorded tapes will be transcribed word-for-word which will assist the interviewer to recall the details of the interview and support accuracy in the information you provide.

Duration of Participation: The meetings and focus group sessions will take approximately 30 to 60 minutes of your time.

Confidentiality: The information collected during this study will be kept confidential. A fake name and code number will be used to recognize your information. Only the researcher and research committee will see the information, which will be kept in a locked filing cabinet in the thesis supervisor's office. The data will be stored for a minimum of five years after the study completion. The study results will be published and quotes may be used. No personal identifying information will appear in any presentations or the published reports.

Risks: It is anticipated that your participation in this study will involve minimal risks.

Benefits: A potential benefit is the opportunity to discuss your experiences of being a teacher educator. Your views will be gathered to develop innovative teaching strategies to improve teacher education delivery in Ghana.

Rights of a Participant: You are under no obligation to participate in this study and you may withdraw from this study at any time. If you find that you would like to stop the interview at any time, please let the researcher know.

Compensation: Your travel expenses for the interview, which will be held at St Teresa's college of Education, will be reimbursed.

Other Information: If you are interested in participating in this study or have any questions, please contact the researcher at through the email address provided.

Thank you very much for taking the time to consider this study.

Appendix C: Consent Letters

Collaborative action research in teacher education in Ghana Consent Form

Primary Investigator

Kunche Nyavor BEd., MSc.

PhD Candidate

Faculty of Education

University of Ottawa

Thesis Supervisor

Angus McMurtry PhD, LLB

Associate Professor

University of Ottawa, Faculty of Education

Invitation to participate: I am invited to participate in the above mentioned research study conducted by Kunche Nyavor. This research study has not obtained funding from any agency.

Purpose of the study: I understand that the purpose of this collaborative action research is to nurture creative and innovative teaching strategies for HIV/AIDS education and prevention in Ghana.

Participation: My participation in this study will consist of taking part in focus group discussion sessions as well as teaching sessions. These sessions will take 30 to 60 minutes and has been scheduled at my convenience in St Teresa's College of Education, Hohoe. The group sessions will be audio recorded and preferably conducted in English.

Risks: I understand that since my participation in this study will entail that I discuss my experiences as a teacher educator. And that my participation in this study will involve minimal risks.

Benefits: My participation in this study will provide the opportunity to discuss my experiences towards developing innovative teaching strategies to improve teacher education delivery in Ghana.

Confidentiality: I have received assurance from the principal researcher that the information I will share will remain strictly confidential. I understand that the contents will be used only for completion of the researcher's thesis, including the presentation in professional journals and conferences. The confidentiality will be protected by a fake name or code number will be used to recognize my information. Only the researcher and research committee will see the original study information.

Anonymity: Anonymity will be protected through no personal identifying information appearing in the researchers' presentations or published reports about the participants involved in this study.

Conservation of data: The tape recording of interviews and transcripts will be kept in a secure, locked filing cabinet in the thesis supervisor's office. Only the researcher and the research committee will have access to the data. The data will be stored for a minimum of five years after the study completion.

Compensation: My travel expenses for the group sessions, which will be held at St Teresa's College of Education, Hohoe, will be reimbursed.

Voluntary participation: I am under no obligation to participate and if I choose to participate, I may withdraw from the study at any time. I may also refuse to answer any questions, without suffering any negative consequences. If I choose to withdraw, none of my interview data will be utilized.

Acceptance: I, _____, agree to participate in the above research study conducted by Kunche Nyavor of the Faculty of Education, University of Ottawa, which research is under

the supervision of Dr. Angus McMurtry. I understand that by agreeing to participate I am in no way waiving my right to withdraw from the study.

If I have any questions about the study, I may contact the researcher or the thesis supervisor at the contact information mentioned above. Also, if I have any ethical concerns regarding my participation in this study, I may contact the Protocol officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 159, Ottawa, ON (613) 562-5841 or ethics@uottawa.ca.

There are two copies of the consent form, one of which is mine to keep.

Participant's name:

Participant's signature:

Date:

I confirm that I have explained the nature and purpose of the study to the named participant and that I have answered all questions.

Researcher's signature:

Date:

Appendix D: Ghana map



Appendix E: Typical Journal Entry

17th July, 2020

Today was the first day of our research, so my co-participants and I met in the office of the Vice Principal of St. Teresa's College of Education. The Vice Principal's is spacious and already fitted with a projector and screen and has a dual function of serving as conference room for top management of the college. The office is well suited for our meetings since it can contain about ten people for a meeting. The office space helped us maintain the COVID-19 protocols. My co-participants, who were my former colleagues, were very excited that I have thought of initiating a research process to nurture a community of practice of Health and Physical Education practitioners in the colleges.

We discussed the ethical issues regarding the research. And I had them sign the consent forms. I kept a copy and gave them their copies.

We had a brief informal discussion to reminiscent about some memorable events such as Inter-collegiate sports festivals.

The brainstorming went very well as we discussed their way of teaching HIV/AIDS concepts in their lessons currently and the need to create a community of practice to keep learning to improve upon practice. I guided the discussion and audio recorded responses. I think the atmosphere was cordial and they felt comfortable giving responses to the discussion questions.

It was a successful meeting and my co-participants seemed very interested and motivated in trying something new coming from a colleague and not the usual [one-time] training programs from government.

We tried to schedule a more formal meeting time every other week but made room for emergencies.

Appendix F: Lesson note on ball juggling activity from (CoP) perspective

Learning space: volleyball court on St. Teresa's College campus.

Learning resources: soccer balls, whistle and cones to demarcate center from the periphery

Introduction: the lesson is about learning how to juggle a ball. Lesson will be carried out using CoP and its social perspective on learning as a guiding framework.

Activities:

Standing in the center of the room, ask participants if they know how to juggle a ball (expertly)

Demonstrate ball juggling, first with one foot, then with both feet and finally with other parts of the body (apart from my hands)

Levels of ball juggling:

- a. One foot: take a ball with one foot from the floor and keep it in the air as much as you can. Any part of the leg and foot can be used – the inside of the foot, the in-step, the heel (if possible), the thigh etc.*
- b. Two feet: the ball can be alternated from one foot (leg) to the other*
- c. Body parts: you can keep the ball in the air as long as you can with many body parts as possible (including the head, chest, legs etc.) apart from the hands.*

Participants grab a ball, find a space on the periphery of the room and practice ball juggling. Try juggling in the air with as many parts of body as possible.

Experts: those who master the use of many parts of the body in the ball juggling activity move to the center. 'Experts' to help beginners and have them practice the basic moves. Once a person has mastered that basic move, s/he moves to next level until s/he gets to the center.

Provisional end: no matter the level one starts, the expectation is that we will all move toward the center of this particular social practice of juggling. The focus is not so much on individual cognitive processes as social performance, movement and increasing responsibility.

Education Principles

Engaging learners in a meaningful task. In this case, at least a fun one is meaningful to them.

Ensure that learners have access to practice and to practitioners that are more expert.

Generally make use of social interactions and people's interest and desire to belong and advance within a group (in the context of this research, participants are HPE practitioners).

Appendix G: Participants' SCT sample lesson notes

AR LESSON PLAN
STORYTELLING AND NARRATIVES

Focus on professional education	Understanding experiences of health professionals dealing with people living with HIV/AIDS
Learner Outcome	By the end of the lesson, the learner will be able to develop his own story concerning the toughest situation he has dealt with in professional practice
Resources/ Materials	A nurse

ACTIVITIES

Activity 1	Facilitator: Talk about the focus of the lesson Facilitator: Introduce resource person
Activity 2	Nurse: Talk about her experiences of caring for people living with HIV/AIDS
Activity 3	Facilitator: facilitate Q and A session Learners: Ask questions for clarification Nurse: Answer questions
Activity 4	Facilitator: Ask learners to develop 3 themes from nurse's story to guide them in developing their own stories concerning the toughest situation they have dealt with in professional practice

AR LESSON PLAN
COOPERATIVE GROUP LEARNING

Focus on key concepts in HIV/AIDS education	Understanding socio-cultural conditions that make women more vulnerable to HIV/AIDS
Learner outcome	By the end of lesson, the learner will be able to enumerate three (3) socio-cultural factors that make women more vulnerable to HIV/AIDS in Ghana
Resources / Materials	Note cards
ACTIVITIES	
Activity 1	<p>Facilitator: Put learners into a group</p> <p>Facilitator: Distribute note cards with each learner's role to group members</p>
Activity 2	<p>Facilitator: Assign text selection on the topic to learners</p> <p>Learners: 1. All read text selection 2. Summarizer - highlight key 3. Questioner - Pose ^{issues} questions for clarification 4. Clarifier - Answer questions raised</p>
Activity 3	<p>Facilitator: Debrief learners on their roles</p> <p>Facilitator: Ask learners to enumerate 3 socio-cultural factors that make women more vulnerable to HIV/AIDS.</p>

AR LESSON PLAN ROLE - PLAY	
Focus on role-play	Assertive communication in romantic relationship
Learner outcome	By the end of the lesson, the learners will be able to demonstrate assertiveness in romantic relationship
Resources/ Materials	Learner characters

ACTIVITIES

Activity 1 (Introduction)	Facilitator: Talk about the focus of the lesson Facilitator: Give out scripts Learners: Select roles
Activity 2	Learners: As characters act out their roles in the play.
Activity 3	Facilitator: Debrief learner characters on their experiences in the play.

DR LESSON PLAN SIMULATION

Topic on Simulation	Cardiopulmonary Resuscitation (CPR) Procedure
Learner Objective	By the end of the lesson, the learner will be able to follow the procedure to follow in giving CPR.
Resources / Materials	Labelled air resuscitation masks, pairs of disposable gloves, dummy doll.

ACTIVITIES

Activity 1 (Introduction)	Facilitator : Guide learner to identify the use of CPR materials / equipment
Activity 2	Facilitator : Simulate CPR procedure as follows: <ol style="list-style-type: none"> i) Checking the scene for safety ii) Calling first responders for assistance. iii) Opening the airway iv) Checking for breathing v) Giving chest compression and rescue breath (CPR) vi) Repeat step iv
Activity 3	Facilitator : Guide learners to simulate CPR procedure.