

Assessment of Teachers' Perceptions on the Integration of Comprehensive Sexuality Education in Mathematics: A Case of Kitwe District (Paper ID: CFP/1211/2019)

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Abstract:

The study assessed the perceptions of teachers on the integration of Comprehensive Sexuality Education (CSE) in Mathematics in Kitwe district on the Copperbelt Province of Zambia. It aimed at achieving the following objectives; to establish the extent to which CSE is integrated in Mathematics, to determine the challenges and opportunities of integrating CSE in Mathematics and to assess the views of teachers on the integration of CSE in Mathematics. The research design employed was a descriptive case study. A sample of ten public secondary schools from a population of 36 secondary schools was randomly selected for the study. The respondents were the senior secondary school teachers of Mathematics, heads of Mathematics department, guidance teachers, education standards officers, district resource centre coordinators and district representatives of the Zambia Association of Mathematics Educators (ZAME). The study used both the quantitative and qualitative approaches to collect data by using questionnaires and an interview schedule. Qualitative data was analyzed thematically whilst quantitative data was analyzed using excel to obtain descriptive statistics. The study found out that utmost four (4), representing 66.7% of the six (6) CSE topics covered by the CSE framework were integrated into eight (8) topics representing 26.7% of the thirty (30) senior secondary school Mathematics topics. The study pointed out that, teachers of Mathematics faced some challenges when integrating CSE which included; insufficient time, inadequate training, difficulties in integrating CSE in all Mathematics topics, lack of guidance, inadequate materials within schools, cultural factors and lack of policy guidance. Despite the stated challenges, it was established that integrating CSE in Mathematics has its own opportunities these are; relating Mathematics to real life, enhanced positive attitude towards Mathematics learning, improved communication with learners and providing accurate information. The study concluded that teachers' perceptions towards the integration of CSE in Mathematics were positive. Based on the findings, the study recommended that; the government may consider clearly specifying the CSE topics to be integrated in Mathematics at senior secondary school level, as some of the topics are already incorporated in subjects such as; Biology, Civic Education, Religious Education and Home Economics, the government through the ministry of general education may consider training the in-service teachers adequately concerning the integration of CSE into their classes and school managements may consider providing teachers with support and guidance to effectively implement the policy.

Comprehensive Sexuality Education has gained a significant attention. It has become a key component of the adolescent's development and effective decision making as well as the transition to adult life. According to WHO (2017), investments in adolescent health and wellbeing bring a triple dividend of benefits now, into future adult life, and for the next generation of children. The argument that children and adolescent especially need comprehensive education about sex and sexuality has even heightened due to incidence of teenage pregnancy, abortion and sexually transmitted infections and the emergence of HIV (Esia-Donkoh, Kumi- Kyereme, Awusabo-Asare and Stillman, 2018)¹. This makes the teaching of comprehensive sexuality education especially in secondary schools not only critical but timely.

Keywords: Comprehensive Sexuality Education, Integration, Perceptions, Mathematics, Assessment

1. Introduction

1.1 Background of the study

Prior to the missionaries' introduction of Christianity as the major religion in Zambia the teaching of sex education was through traditional African society and initiation ceremonies. According to Adeyinka & Ndwapi (2002), under the Traditional African Society, sex education was done by parents or family members who passed on morals to the young people by acting as role models of good behaviour. With the coming of the missionaries, this type of education continued and the teaching was based on the Bible as the authority and foundation of good behaviour. Since then, with the declaration of Zambia as a Christian nation most of the parents teach morals to young people based on what is written in the Bible (Ibid).

The Zambian culture also taught sex education through initiation ceremonies. Initiation ceremonies were conducted when one attained puberty to prepare boys and girls for marriage. The major content of the initiation ceremonies was to teach the young people how to look after husband and wives. However, with the coming of missionaries and their aim of Christianising civilising the African people, initiation ceremonies were abolished as they were considered pagan and immoral (Rasing, 2004). Society also saw the need to postpone the teaching of looking after husbands and wives to pre marriage counselling, as the content was not suitable for young people who had just attained puberty as they were still in school and not ready for marriage yet. In the past the content came at the right time since the young people would get married immediately after attaining puberty.

The missionaries abolished the initiation ceremonies as they were considered immoral. According to Snelson (1974) as cited in Simalimbu

(2016), some missionary societies did not only aim at serving man's souls by teaching Christianity but were at pain to improve man's physical and social well being as well, hence the introduction of Domestic Science. Therefore, some aspects of sex education were taught in Domestic Science now Home Economics where mostly hygiene was taught to women and girls. Later formal schools were opened up and along with other academic subjects Domestic Science was offered and topics related to sex education such as puberty, pregnancy, reproduction, child development were taught (ibid). Traditionally after initiation ceremonies were abolished the teaching of sex education in most families became a responsibility of grandparents, aunts and uncles (Rasing, 2004).

After independence, the teaching of sex education continued to be taught in domestic science and later subjects such as environmental science and biology which had some topics such as reproduction related to sex education taught. In the early 1990s the Ministry of education in Zambia formally introduced the teaching of sex education in schools and was integrated in science subjects, civic education, social studies and religious education under the life skills and in extra-curricular activities such as clubs (MoE, 1996). The World Health Organisation (WHO) in May, 1995 made reproductive health as a main concern area worldwide at the World Health Assembly Resolution (WHO, 2014). The resolution urged its member states to further develop and strengthen their reproductive health programmes by strengthening the capacity of health workers in addressing the reproductive health needs of individuals in a culturally sensitive manner and specific to their age. According to WHO (2011), this required improving the course content and methodologies for training health workers in reproductive health and human sexuality and to provide support and guidance to individuals,

parents, teachers and other influential persons in these areas.

The Zambian government got assistance and funding from the Swedish International Development Authority (SIDA) in 1995 to develop Adolescent Reproductive Health Project (Ministry of Health, 2009). Central Board of Health (CBOH) chose Kafue District since it included both urban and rural settings which lacked sexual and reproductive health programmes (Ibid). The area was also a high risk for HIV/AIDS and other sexual transmitted infections (STIs) as it was situated along the high way to Zimbabwe and South Africa (Miyanda and Wakunguma, 2014). In Zambia, adolescents account for over a quarter (27%) of the total population (Ibid).

In 2000, the Zambian Government introduced Youth Friendly Health services which promoted Family life education widely as it was realized that, adolescents are a special group and require special attention (Ministry of Health, 2009). In April 2002, the program was integrated into the district offices of the Ministry of Education, Ministry of Community and Social development.

In 2007, there was still inadequate Sexual and Reproductive Health (SRH) information available in Zambian schools and in the community and young women were not empowered to make informed decisions about their SRH (Taylor, 2013). According to Bwalya (2012), sexuality education was partially integrated in Environmental Science, Biology, Civic Education and Religious Education both syllabi 2044 and 2046. The first subject was offered at junior secondary or upper basic school level, while the other three were offered at senior secondary or high school level. Environmental Science is a compulsory subject which is taken by every pupil at junior secondary level. But the topic that touches on sex and sexuality is not detailed, leaving young people with little information (Ibid).

Bwalya further states that, Biology, Civic Education and Religious Education were optional subjects in some schools, meaning that not all pupils were learning about sex and sexuality.

The Government of Zambia (GRZ) in 2011 enacted Education Act No. 23. In Section 108(I)(1), the Act empowers the Minister of Education to amend the curriculum to introduce Comprehensive Sexuality Education (Population Council, United Nations Population Council (UNFPA), Government of Zambia Human Rights Commission, Women and Law in Southern Africa (WLSA), and United Nations in Zambia, 2017) The Government of the republic of Zambia recognized the importance of investing in the education sector through the provision of comprehensive sexuality education (CSE) and reproductive health information. This is largely so because it increases the potential and opportunity of reaching out to young people as a large population of adolescents are in school (Government Republic of Zambia, 2012).

In 2014, GRZ completed the development of the CSE curriculum, and it was rolled out to all schools, targeting children aged 10–24 in grades 5–12. In 2015, a curriculum for out of school adolescents was developed and plans were made to roll it out by the end of 2016. To ensure the successful implementation of CSE, teacher-training colleges are including it in their curricula. To make it accessible to adolescents, CSE has been integrated into various subjects such as Home Economics, Sciences, Social Studies, and languages (Population Council, United Nations Population Council (UNFPA), Government of Zambia Human Rights Commission, Women and Law in Southern Africa (WLSA), and United Nations in Zambia, 2017). However, little is known about CSE and reproductive health as a whole and its integration in Mathematics, hence the study.

1.2 Statement of the problem

CSE is widely recognised due to its importance in the promotion of sexual health as empowers adolescents by enabling them to make informed Sexual Reproductive Health (SRH) decisions and choices that will help prevent teenage pregnancy, sexually transmitted infections, and ill health in general (Population council, et al, 2017). The national response to HIV is guided by the 2011-2015 National AIDS Strategic Framework (NASF), informed by several framework revisions since 2001. The 2011-2015 NASF states that CSE will be provided to young people in order to prevent HIV and unintended pregnancies. Zambia's Vision 2030 also gives 'priority to the teaching of knowledge, skills and values that will enable learners to contribute to achieving the national vision. The Life Skills Education Framework (2011) and the Comprehensive Sexuality Framework (2013) are currently being merged to provide guidelines on minimum content for different levels of education. Reproductive health and sexuality education have also been recognised as a cross-cutting subject within the Zambia Education Curriculum Framework 2011(ZCEF), a policy framework that guides what will be taught to learners in Zambia. The Comprehensive Sexuality Education Framework (2014) guides the SE content taught at each grade level. Life skills-based SE is not taught as a stand-alone subject, but has been integrated for example into social studies, civic education, integrated science, biology, home economics and religious education. Despite the 2014 CSE framework clearly specifying the subjects in which CSE has been integrated, there is still a directive from the Ministry of General Education that all teachers including those who teach mathematics should integrate CSE in their classrooms. According to UNESCO (2015), it is important to acknowledge that teachers have their personal, cultural and traditional beliefs and values and these affect their comfort, willingness and ability to teach

sensitive topics in the appropriate language. Hence this research was conducted to assess the perceptions of teachers of Mathematics on the integration of comprehensive sexuality education in Mathematics.

1.3 Objectives of the study

- i. To establish the extent to which CSE is integrated in Mathematics.
- ii. To determine the challenges of integrating CSE in Mathematics.
- iii. To assess the views of teachers on the integration of CSE in Mathematics.

1.4 Literature Review

1.4.1 Comprehensive Sexuality Education (CSE) and its Integration in schools

Globally, Comprehensive Sexuality Education has gained a significant attention. It has become a key component of the adolescent's development and effective decision making as well as the transition to adult life. Sexuality is a central part of being human. If we accept this premise put forth by the World Health Organization (WHO, 2010), the further rationale for the necessity of Comprehensive Sexuality Education (CSE) makes entire sense – that is, informal sexuality education is inadequate for modern society, young people are exposed to information from a variety of incorrect sources and there is a need to promote sexual health. Children and young people need to know about sexuality in terms of both risk and enrichment, in order to develop a positive and responsible attitude towards it. In this way, they will be enabled to behave responsibly not only towards themselves, but also towards others in the society they live in (WHO, 2010).

UNESCO's Global review (UNESCO, 2015) provides a rough overview of the situation regarding formal CSE in 48 countries across the world. In 80% of the surveyed countries there was

a national policy or national strategy that supported CSE. Even though the study did not provide any overall estimation of global implementation level, the authors indicated that a significant gap remained between the existing policies and signed commitments, and actual implementation of CSE on the ground: Few strategies or policies are fully operationalized.

Formal in-school sexuality education was found to be mostly embedded in more general objectives in school like healthy lifestyle, citizenship. It was quite evenly split between delivered integrated in existing subjects like biology, people and the world/people and health, basics of life safety, life skills, etc. or being delivered as a stand-alone subject. CSE may be mandatory or it may be delivered through optional courses. UNESCO's review of curricula showed that within existing sexuality education programmes, little or no attention is attributed to the development of key competencies including critical thinking, as well as on examining how gender norms, religion and culture influence learners' attitudes and behaviour.

According to WHO (2017), investments in adolescent health and wellbeing bring a triple dividend of benefits now, into future adult life, and for the next generation of children. The argument that children and adolescent especially need comprehensive education about sex and sexuality has even heightened due to incidence of teenage pregnancy, abortion and sexually transmitted infections and the emergence of HIV (Esiadonkoh, Kumi-Kyereme, Awusabo-Asare and Stillman, 2018). This makes the teaching of comprehensive sexuality education especially in secondary schools not only critical but timely.

Rutgers' sexuality education programmes, and many others around the world, choose a comprehensive approach in which sexuality is put in a wider perspective of personal growth, development and building up mutually consensual

(sexual) contacts and relationships. Comprehensive Sexuality Education (CSE) is characterised by a positive approach to sexuality that accepts sexual feelings, desire and pleasure as essential components of young people's sexuality. CSE is strongly linked with empowerment, gender equality and a rights-based approach, and with putting children and young people at the centre of the education. CSE is aimed at enhancing well-being, and therefore strives to achieve ideal experiences, rather than solely working to prevent negative experiences. CSE acknowledges and tackles the various concerns and risks associated with sexuality, but without reinforcing fear, shame or taboo of young people's sexuality and gender inequality (IPPF, 2010).

Comprehensive sexuality education imparts critical information and skills for life. These not only include knowledge on pregnancy prevention and safe sex, but also understanding bodies and boundaries, relationships and respect, diversity and consent. Countless research reports prove the effectiveness of CSE in terms of self-reported risk behaviours (such as delayed initiation of sex, decreased frequency of sex, fewer partners, and increased use of condoms and/or other forms of contraception). CSE is important because it equips young people with skills that enable them to make informed choices and contributes to eliminating myths and stereotypes about sexuality. It is also necessary both for the prevention of sexism and discrimination against women, Lesbians, Gay, Bisexuals and Transsexuals (LGBT) or HIV positive people and the prevention of attitudes that lead to gender-based violence, sexual violence, and abuse.

School-based sexuality education is crucial for young people in the world today because of the confusing information they get from the media as well as from friends. This leaves them vulnerable to risky sexual behaviour. When young people

reach adolescent stage, they begin to experience strong sexual feelings which if not well handled can lead them to indulge in risky sexual relationships. Young girls, for instance, may become pregnant and abandon school at a very tender age. They may also contract STDs, HIV and AIDS. This is often due to peer pressure and lack of proper information on sexuality and reproductive health (Bwalya, 2012).

In Asia and America, Comprehensive sexuality education has been integrated into the formal school curricula and it is oriented towards personal growth, problem-solving or problem-prevention (Eko, 2013). In India, a two-pronged approach is being used to implement CSE. For in-school/formal education systems, the curriculum is being implemented through Adolescent Education Programmes, delivered to students of grade 8, 9 and 11 (aged between 13-18) by a cadre of trained teachers. The curriculum covers a wide range of issues related to sexual and reproductive health, but components such as sexual citizenship and sexual rights are not incorporated. The content reinforces the hetero normative notions of sexuality and sexual relationships. References to “relationships” are limited to non-sexual relationships, for example, family, parents and friends, and power hierarchies, negotiation, and decision-making skills within the sexual relationships including marriages are not discussed. As a result, the curriculum fails to challenge and transform the social and cultural beliefs about gender-based violence and power dynamics in these relationships. There is no formal curriculum in place for out-of-school youth, but information and counselling are provided through the adolescent friendly health clinics put in place under the Ministry of Health and Family Welfare.

CSE has been integrated into the formal school curricula in Europe. Remarkable progress has been made in the European Region in the development and integration of Sexuality education curricula in

for school settings (Ketting and Ivanova, 2018). In 21 out of 25 countries, there is currently a law, policy or strategy either requiring or supporting it. In all but one country (the United Kingdom), most of this development took place during the years 2000-2016. In March 2017, a legal change took place in the UK when it was decided to make sexuality education a statutory subject, which means it must be taught in all schools of the country, now also including the private ones (Ibid).

Ketting and Ivanova (2018) indicated that, in almost all European countries, sexuality education is integrated into other broader teaching subjects; it is rarely a ‘stand-alone’ subject. Young people in Cyprus, Europe, and the World face several forms of gender discrimination including gender-based violence, fulfilment of traditional gender roles, limitations in family planning choices and discrimination due to sexual orientation. Sexually Transmitted Infections (STIs) continue to be a serious threat against public health among young people all over Europe and especially for the age group 15 - 24. STIs including HIV/AIDS affect young people disproportionately, causing additional long-term or permanent complications such as sterility and various forms of cancer while increasing the economic, physical, and psychological burden on both people and the health systems.

Different African countries have different policies with regard to the teaching of sexuality education. According to the UNESCO International Guidelines, the implementation of sexuality education depends on the available resources (including the availability of supportive school administration, trained teachers and materials), competing priorities in the school curriculum, the needs of learners, community support for sexuality education programmes and timetabling issues. Some countries such as Malawi opted to implement it as a stand-alone subject while Nigeria and

Tanzania among others have integrated it within various parts of the curriculum such as biology and civic education. Kenya delivers it under guidance and counselling (Bwalya, 2012).

The 2012 Botswana National Population Census estimates the population at 2,045,752, growing at 0.9 percent, with an adult literacy rate of 85.1 percent. In 2012, there was a 25 percent adult (15-49) HIV prevalence rate and according to the Botswana AIDS Impact Survey (BAIS IV) preliminary results in 2013, there were 319,750 people in Botswana living with HIV. By 2012, there were an estimated 5,700 deaths due to AIDS in Botswana, and UNAIDS reported an estimated 120,000 orphans due to AIDS. Ironically, Botswana has one of the world's highest HIV prevalence rates, yet is reputed to be one of the most progressive African countries in anti-HIV programming. Although Botswana has a high rate of secondary enrolment, it continues to have low levels of knowledge about HIV&AIDS, suggesting that education must play a larger and more comprehensive role in addressing this challenge (UNESCO, 2015).

Botswana's strategic framework requires that CSE be provided from pre-school to tertiary and teacher education level, emphasising the integration of SE and LSE into the teacher education, in particular. Botswana's Programme of Living, Skills for Life/ Botswana's Window of Hope, is recognised as one of the best initiatives in the region. Botswana's Strategic Policy Framework also requires that CSE be provided from pre-school level to tertiary and teacher education level, emphasising the integration of SE and LSE into the teacher education, in particular. Botswana also has an overall strategic goal within its revised national response (Prevention of New HIV Infections by 2016), which includes eight attainable objectives worthy of attention and possible replication,

including emphasis on teacher training (UNESCO, 2015).

In Botswana, Comprehensive Sexuality Education has been integrated in the school curriculum and according to the international standards (UNESCO, 2015). According to Noonan (2006) Botswana had no policy on sex education before 2006. However, he further reports that the issues of sexuality were highlighted in the National Population Policy and discussed under reproductive health. They pointed out the school curricula offer adolescent and sexual reproductive health through guidance and counseling and other school subjects, such as science, also subscribe to the idea of sexual and reproductive health. This point was emphasized by Francoeur and Noonan as quoted by Mimi (2009), who reported there is no formal sex education in schools in Botswana and studies show that many parents are uncomfortable talking about sexuality with their children.

In view of the aforesaid, a teenager's primary source of information regarding sexuality is thus his or her peer group, all of whom are experiencing and reinforcing the same behavior and the family, the major socializer of other behaviors, is not as powerful a force in shaping responsible sexual discussions (Asekun-Olarinmoye, 2007). Effective sexuality education is a vital part of HIV prevention and is also critical to achieving Universal Access targets for reproductive health and HIV prevention, treatment, care and support (UNAIDS 2006) as cited in Kasonde (2013). Teachers in Botswana have positive perceptions toward sexuality education (ibid).

The Ministry of Education and Skills Development (MOESD) HIV&AIDS Strategic Framework (2011-16) in Botswana provides for CSE to be introduced from pre-school through to tertiary education. Specific reference is made regarding the integration of SE and LSE into teacher education. The AIDS Policy for the

Education Sector, currently under review, makes provision for the prevention of HIV transmission and confirms that CSE will be incorporated into the teacher education curricula. Mention is also made that college lecturers will be capacitated to deliver CSE and that this will be cascaded to college students, enabling them to ‘comfortably and competently’ deliver CSE at the school level (UNESCO, 2015).

UNESCO (2015) points out that Kenya has revised its Education Sector Policy on HIV&AIDS (in 2013) to include emerging issues and has overhauled its curricula at all levels to make it more relevant, ensure that age-appropriate CSE is mainstreamed and that teacher training materials are available.

In the Education Sector, HIV&AIDS was introduced into the curriculum in 2000 and an Education Sector Policy on HIV&AIDS was developed in 2004 and mainstreamed into the Kenya Education Sector Support Program in 2005/10. This required the inclusion of HIV&AIDS in the curriculum, as well as training materials for pre- and in-service teachers. The 2013 revised Education Sector Policy on HIV&AIDS includes the provision of age-appropriate CSE and develops a series of strategies to ensure CSE is integrated into teacher education in the context of HIV&AIDS (UNESCO, 2015).

Kenya’s life skills education curriculum was originally developed by the Ministry of Education in 2002 and revised in 2008. The new syllabus promotes general skills for day-to-day living, such as self appreciation, improving interpersonal relationships, acquiring decision-making skills, respecting other people’s rights and coping with stress and emotions. Sexuality education, as defined in this study, is not explicitly included as a stand-alone, examinable subject in the Kenya national curriculum. Instead, some topics related to SRH education have been included in different

subjects, such as life skills (arguably the most comprehensive of the three), Christian religious education and biology. Box 3.2 offers a detailed description of key topics included in each of these subjects, the grades in which they are taught and whether the subjects are compulsory or examinable. The latter point is relevant to curriculum implementation because more emphasis is given to examinable subjects (i.e., those that are academically scored), and teachers prefer teaching those subjects. Religious education and biology are examinable, while life skills are not.

According to Kirby (2008), in Grades R-3 in South Africa about half of the International Technical Guidance on Sexuality Education (IGTSE) topics are potentially addressed by the Curriculum and Assessment Policy Statement (CAPS). CAPS provides subject content and topics progressively across grades, values and skills relevant to LO. However, several topics do not appear to be covered. They include basic values, peer pressure, decision making, pubertal changes, basic reproduction, body image, expressions of love and maturity, basic rights and responsibilities of parenting, disease and the rights and needs of people living with HIV. Notably, the ITGSE topics recommend that some of these topics be covered only at the most basic level. Some of these topics are covered during later grades in CAPS.

The variety of different life skills curricula currently being implemented by South African schools and institutions focus largely on HIV and AIDS awareness and information and do not sufficiently emphasise the importance of physical and mental wellness in youth (UNPFA, 2015) The curricula seem to be having a positive effect on students’ knowledge and awareness of HIV and AIDS, but they do not adequately meet the goals of the national policy – namely, to promote healthy behaviour and positive attitudes (ibid).

In South Africa, the establishment of the HIV&AIDS Education Community of Practice (COP), made up of teacher educators from all teacher education faculties and schools in the country, is an important (regulatory and development) initiative. Recruitment of specialised life orientation educators with enthusiasm and passion is being undertaken by the schools, to provide a 'primary source of emotional, social and practical support for learners in schools.' South Africa's DBE is developing a training curriculum for teachers to implement life skills/orientation as it pertains to SE, including the development of materials and support systems. Most importantly, the policy environment is informed by a sophisticated, inter-connected network of policies and strategies, many of which deal with school-based life skills programmes and enhancement of teacher training to deliver these; there is also a continuous, research-rich process of assessment and review (UNESCO, 2015).

A South African research conducted in rural Transkei revealed that school adolescents were having sexual relationships at increasingly young ages, often from as young as 12 years. The study showed that 64 percent of the 13-year old girls and 76 percent of boys of the same age were already sexually experienced relation to peer pressure among boys, the National Progressive Primary Health Care Network (NPPHCN) in South Africa writes: The culture created by this pressure can be dangerous because it gives boys a sense that sex equals manliness. This allows young men to take the view that a woman's refusal to have sex with them is an affront to their masculinity and that they have a right to demand sex at any time. It is an exhibition of their power and position in society and is foundation for a society in which rape will continue to be prevalent. From the above discussion, it is clear that most boys, not only in South Africa but in other parts of the world also, abuse their gender roles by thinking that they have

a right to demand sex from girls. They reduce girls to mere sexual objects that could be used whenever they please. Most of them grow up with this notion which later impacts negatively on their sexual relationships. Some of them end up being rapists and others become sexual defiler (Bwalya, 2012).

In South Africa, there is an inter-connected network of policies and strategies, many of which deal with school-based life skills programmes and enhancement of teacher training to deliver these. Most relevant are the Department of Basic Education's (DBE) Integrated Strategy on HIV, STIs and TB and the draft HIV, STI and TB Policy (2012–2016), which provide a detailed context, implementation plan and monitoring structure for response. They also support South Africa's National Strategic Plan for HIV, STIs and TB (NSP). The Integrated School Health Programme (ISHP) is another key multi-sectoral response to the Care and Support for Teaching and Learning (CSTL) framework and directly addresses NSP strategic objectives (UNESCO, 2015).

Currently, South Africa does not have a widely adopted, detailed, scripted curriculum. There are CAPS for four different grade levels, R-3; 4-6; 7-9 and 10-12. These specify broad topics to be covered during each grade, term and week and the number of hours allocated to different topics. However, they are not detailed, scripted curricula and they Currently, South Africa does not have a widely adopted, detailed, scripted curriculum. There are CAPS for four different grade levels, R-3; 4-6; 7-9 and 10-12. These specify broad topics to be covered during each grade, term and week and the number of hours allocated to different topics. However, they are not detailed, scripted curricula and they do not specify particular activities that should be implemented.

In December 2013, Zambia and nineteen other countries in the East and Southern Africa (ESA) region affirmed and endorsed their joint

commitment to deliver CSE and SRHR services for young people ‘the East and Southern Africa Commitment on CSE and SRH services for young people’ (UNESCO, 2015). The Ministry of Education in Zambia has been working with other stakeholders to operationalize the process of integrating comprehensive sexuality education curricula for the young people who are in and out of school (Miyanda and Wakunguma, 2014). It is a collaborative effort of the United Nations System and the Ministry of Education as a strategic step to strengthen sexuality education in Zambia’s Education Curriculum (Government Republic of Zambia, 2011).

In response to the current sexual needs of the young people and the effects of the HIV/AIDS on the people of Zambia. The ministry of education introduced comprehensive sex education, which has sexuality topics integrated in different subjects. The topics are covered in environmental science, biology, religious education, civic education, home economics or home management. The development of this approach was prompted by the data from research indicating an increase in the school dropout due to pregnancy. A curriculum scan, which tried to investigate the cause of pregnancies in young people, reviewed gaps in knowledge on sexuality education among the young people (Ministry of Education, 2013). The comprehensive sex education approach was seen to have the capacity to address the problems of information gaps by helping young people to gain knowledge, skills and positive attitudes and values, which would help them in addressing challenges concerning their sexuality (Ministry of Education, 2013). Among the new topics that will be emphasised on were gender equality in relation to sexuality and the benefits of using contraceptives

The government of Zambia is spearheading a major project that aims to strengthen the delivery of CSE to young people from ages 10 to 24,

including those living with HIV and with disabilities. By increasing access to high-quality, age-appropriate sexuality education and services, the project ultimately seeks to contribute to improved SRH outcomes for Zambian adolescents and youth (UNESCO, 2015). Schools in Zambia are the main vehicle for providing life skills-based HIV education. Some NGOs work with the education sector to support life skills education in the class room as well as through AIDS action clubs. It is generally agreed that schools remain the best channel to reach the vast majority of young people with HIV and sexuality education, however teachers sometimes do not prioritize the subject, and coverage and content may depend on the involvement of NGOs.

The national response to HIV is guided by the 2011-2015 National AIDS Strategic Framework (NASF), informed by several framework revisions since 2001. The 2011-2015 NASF states that CSE will be provided to young people in order to prevent HIV and unintended pregnancies. Zambia’s Vision 2030 (2006) also gives ‘priority to the teaching of knowledge, skills and values that will enable learners to contribute to achieving the national vision. The Life Skills Education Framework (2011) and the Comprehensive Sexuality Framework (2013) are currently being merged to provide guidelines on minimum content for different levels of education. Reproductive health and sexuality education have also been recognised as a cross-cutting subject within the Zambia Education Curriculum Framework 2011(ZCEF), a policy framework that guides what will be taught to learners in Zambia. The Comprehensive Sexuality Education Framework of 2014 guides the SE content taught at each grade level. Life skills-based SE is not taught as a stand-alone subject, but has been integrated for example into social studies, civic education, integrated science, biology, home economics and religious education.

Life skills education aims to influence young people's behaviour by increasing their autonomy, decision-making, and self-esteem. The Zambia education policy of 1996 mandated schools to have a curriculum that addresses sexuality and personal relationships as well as messages about HIV. The National AIDS Strategic Framework 2011–2015 (NASF 2011-2015) states that in 2006, 60 percent (4,567 out of 7,611) of schools were providing life skills-based HIV education and by 2007, a cumulative number of 1,102,637 young people were reached with life-skills based HIV education. The NASF annual report (2009) indicated that of the 2,437,198 young people targeted for life skills education, only 277,982 (11 percent) were reached, a 17 percent reduction from 2007. The reason for this decrease was that although teachers had been trained in life skills and HIV in 60 percent of schools, some did not show interest in HIV education as they considered it extra work. Since sexuality education is not an examinable subject it is often given lower priority or left to guidance and counselling teachers, who are not given the time, skills, and resources to address sexuality education (UNESCO, 2013).

Since 2014, a revised curriculum with integrated CSE has been rolled out in Grades 5 to 12 in all schools across the country (UNESCO, 2015). By December 2014, a total of 12,852 in-service teachers had been trained in effective delivery of CSE at classroom level, and a further 25,017 were to be trained by the end of 2015 (UNESCO, 2015). Teaching and learning materials have also been produced by the Ministry of Education for all grades, and National and Provincial Standards Officers have been trained to monitor the quality and delivery of CSE at school level. Teachers are expected to use the CSE Framework in tandem with the syllabi for their subjects to identify places where CSE can be integrated, and thus develop schemes of work and lesson plans that include CSE components (UNESCO, 2016).

In 2015, the ministry of education took a step forward to try to improve the teaching of sex education by introducing the comprehensive approach (Simalimbu, 2016). Comprehensive sex education approach will not only deal with behaviour change but equip teenagers with values, skills, attitudes and self-efficacy (Ecker & Kirby, 2009). This will help to deal with practical sexual problems teenagers might face and improve on communication with their parents and other stakeholders on sexual related issues (ibid).

Zambia acknowledges that Sexuality Education (SE) is an essential part of any good curriculum and an essential part of a comprehensive response to HIV&AIDS at the national level. Effective CSE can provide young people with age-appropriate, culturally-relevant and scientifically accurate information (UNESCO, 2015). It includes structured opportunities for young people to explore their attitudes and values, and practice the decision-making and other life skills they will need to be able to make informed choices about their sexual lives (Ibid). Teachers also need skills to effectively deliver CSE at school level and must consider their own value-systems and attitudes to avoid undue bias (Ibid).

Progress has been made in meeting government obligations to respect, protect, and fulfill the Sexual reproductive Health (SRH) of all people in Zambia. In most thematic areas assessed, statistics show improvements. For example, maternal deaths and HIV prevalence have significantly reduced; knowledge and use of FP services has improved, and post abortion-care services are available (Status of sexual and reproductive health and rights in Zambia, 2017). Comprehensive Sexuality Education has been introduced in schools and progress is being made to ensure that CSE reaches out-of-school adolescents. National policies have been developed, and progressive laws have been enacted (Ibid).

MESVTEE attaches great importance to continuing teacher professional growth. As such, the foundation laid in the pre-service programmes is enhanced through CPD programmes. Some of these programs require that serving teachers be given opportunities to return to college or university to upgrade their professional capacities. One such program in Zambia is called the Fast Track Teacher Education Program, which the ministry is using to upgrade teachers' qualifications from certificate to diploma or diploma to degree. Most of these are teachers of either mathematics or science. Despite this effort, the ministry's capacity to offer in-service training programmes through programs which require that teachers leave their stations to go to college or university to upgrade their skills, competences and qualifications is still limited (UNESCO, 2015).

Since the majority of in-service programs are based on identified needs of the school, CPD interventions in Zambia are usually school-based, using the educational policy-based framework called the School Program of In-service for the Term. The program is supported through a chain of TRCs, which are manned by a cadre of highly trained CPD facilitators called resource centre coordinators.

Based on the Country's Educational policy framework as provided for on pages 115-116 of "Educating our Future," the aforementioned TRCs are mandated to be conduits of all new interventions and initiatives in the school system. Through these centres, teachers are provided with opportunities for in-career development using a cascade model with special checks and balances aimed at avoiding too much dilution at the base.

By the same token, therefore, the training on effectively delivering CSE at the school level kicked off in July 2014 using this model by first capacity building all provincial teachers' resource centre coordinators and all the district teachers'

resource centre coordinators in target districts and provinces. In turn, these coordinators have already commenced the training of classroom-based teachers in the content of CSE and how to integrate it in related learning areas of the Zambian school curriculum. This follows the integration of CSE in the Zambia Education Curriculum (UNESCO, 2015).

1.4.2 Challenges of CSE integration in schools

A research by Wakunguma and Miyanda (2014) in Norway revealed that professionals too faced some challenges in communicating with adolescents on sexual and reproductive health issues. Teachers from Norway faced the internet challenge, teachers were concerned that adolescents thought they know everything because of what they read and watch from the internet. Their study further revealed that attitude of both teachers and students was also a challenge as most of them were not willing to teach.

The integration of CSE in Thailand comes with its own challenges as indicated by the findings of UNICEF (2016). The very first hurdle schools experienced when incorporating a sex education program was the lack of budget funding for personnel, materials, equipment, teacher in-services, and so on (Peerapipat, 2006). In addition, majors in sex education were not offered as part of a teaching degree in any university. Assigning teachers to have the primary duty of teaching sex education became a new challenge for the whole process of teaching sex education through the school (ibid).

According to UNICEF (2016), the teacher survey indicated that half of CSE teachers have not had an opportunity to receive CSE-related training. Without training, teachers may be left with insufficient knowledge about sexuality and no opportunities to rework their values and attitudes, as well as insufficient skills to arrange learning

activities that facilitate active participation by students. So, many teachers simply follow the textbook and conclude each session based on their personal attitudes rather than letting students draw their own conclusions. This particularly applies to the question of students having sex (ibid).

The study by UNICEF (2016) also points out that many general secondary school teachers complained in interviews that teaching time was insufficient for arranging activities, so they had to rely on lecturing as the main method of instruction, whereas some vocational teachers felt that available teaching time was already sufficient.

SE's success depends largely on the knowledge, attitudes, values, skills and commitment of its major implementers—classroom teachers and subject heads. In an era of HIV&AIDS, teachers play an even more critical role in being a source of accurate information and a person with whom young people can raise sensitive and complicated issues about sexuality. As trusted gatekeepers of information, teachers can be instrumental in imparting knowledge and skills to young people. Teachers can function as role models, advocates for healthy school environments, guides for students in need of services, resources for accurate information, mentors and effective instructors. But to meet these expectations in the HIV&AIDS era, teachers need skills and knowledge, as well as support from the educational system and broader community. Teachers also need to know how to protect their own health and the importance of not putting any of their students at risk through their own behaviours.

Effective training first has to have an impact on the teachers themselves at a personal level, helping them examine their own attitudes toward sexuality and behaviours regarding HIV, STIs and early and unintended pregnancy prevention, understand the content they are teaching, learn participatory teaching skills, and gain confidence to discuss

sensitive and controversial topics. A UNICEF review of LSE programmes in ESA concluded that life skills programmes that addressed HIV&AIDS issues are more effective when teachers explore their own attitudes and values, establish a positive personal value system and nurture an open, positive classroom climate. Programmes appear to be more effective when teachers use a positive approach emphasizing awareness of values, assertiveness, relationship skills, decision making, real-life situations and self-esteem (UNICEF, 2016). The ITGSE indicates that the kind of preparation, training and support a teacher receives is a key component of a successful school-based programme.

Research has also shown that in Thailand CSE evaluation poses another challenge. According to UNICEF (2016), most teachers mainly evaluate students' knowledge through written and multiple-choice exams, worksheets and classroom participation. These evaluation methods are insufficient for indicating whether students have sufficient critical-thinking skills, including skills to manage the sexual risks they face in their everyday lives and to analyze various situations in a well-rounded manner.

Insufficient coverage of CSE topics related to gender, rights and power are covered to a low extent in Thai educational institutions. The prevention of teenage pregnancy is taught from a narrow angle that emphasizes only abstinence or contraception. Gender roles and unequal power relations between genders are not given importance, so students may not learn about the negotiation of power, which is important, for example, when a woman negotiates condom use with a male partner. Lack of learning about sexual negotiation may leave students without relevant skills and lead to unsafe sex.

In recent years, many Low- and Middle-Income Countries especially in Africa have developed CSE

policies and context-specific curricula. Educational policies impact directly young people's access to information necessary for making informed choices and to means that enable them to implement those choices (Cyprus Family Planning Association, 2015) However, the translation of these policies and curricula from paper into practice is not always straightforward, and a range of bottlenecks can hinder their full implementation in schools. These bottlenecks can operate at various levels, from national program planning to the classroom level. There have been relatively few studies of the implementation of national CSE programs in LMICs, and even fewer specifically examining challenges to implementation Huaynoca, Chandra-Mouli, Yaqub and Denno (2014).

In Kenya CSE is not offered as a standalone subject in school, but is integrated into other subjects. Some of the challenges to an integrated approach include among others: parental opposition (stemming from concerns that CSE encourages sexual activity), the lack of dedicated funding for CSE from governments has posed a challenge for program implementation teachers trained in their main subject areas are rarely taught how to integrate CSE, and they can more easily skip over topics they consider controversial, with the excuse that they do not have adequate knowledge to cover them Monzón, Keogh, Ramazzini, Prada , Stillman and Leong (2018). Integration can diminish the importance of CSE in the curriculum, as it gets diluted into other subjects and does not wield the weight of a standalone subject for teachers or students: For it as standalone, one of the good things you gain is the details that you go through, and being looked at as a subject and given the priority that it deserves, so you end up achieving the targets of your objectives. When it is integrated, probably as any other component...for example put it within biology, it is crowded and the message can also be clouded, so you don't go into the detail

(International agency representative, Nairobi, Kenya)

In Kenya, where CSE is mostly taught as part of the compulsory but non-examinable Life Skills curriculum (which teachers often skip to focus on core examinable subjects, according to several informants), a MoE representative suggested that moving CSE into examinable subjects could encourage teachers to pay attention to it: If you bring in health education as a subject per se, and it is non-examinable, it will die immediately so it is better you teach it infused in the examinable, because if you just say this is non-examinable, that will be the death of that subject. Nobody will teach things without a mean score (MoE official, Homabay, Kenya)

The view that examination encourages both teachers and students to dedicate more time to CSE was echoed by informants from the other countries. However, some key informants pointed out that while integrating CSE into other subjects and examining them through these subjects works well for knowledge-based topics, it is less obvious how well it works for values and skills, where the emphasis on passing examinations is not always helpful. Moreover, many of the key subjects into which CSE is integrated are elective and/or non-examinable. This means that some students miss out on the teachings because they do not elect to take those particular classes, or, if the subject is not examinable, less attention may be paid to it given the pressure on teachers and students to focus on topics that will be examined.

Kenya has a host of different government-approved curricula being implemented by NGOs around the country Agbemenu and Schlenk (2011). The centralized education system in Kenya can be an asset in terms of oversight and standardization of CSE curricula, but centralization can also cause unnecessary bureaucracy, as budget allocation decisions are sometimes delayed, guidelines do not

always filter down to the local level, and accountability for implementation is elusive. The piecemeal funding situation further complicates an already complex landscape, as financially strapped governments rely on international donors and NGOs to roll out localized CSE programs, but are not coordinating the different efforts in time, space and content, and cannot take over and ensure continuity when the donor or NGO withdraws. Disjointed and unpredictable funding is a challenge that afflicts CSE programs in many resource-limited settings Kunnuji, Robinson, Shawar and Shiffman (2017).

A study by Chaka (2017) in South Africa reflects that teachers are often not optimally trained to accommodate the myriad of cultures and backgrounds of learners in their classrooms. It is further needed to acknowledge that their own personal beliefs could influence the messages conveyed to learners (ibid). Effective communication must be viewed as one of the most powerful tools to address the HIV and AIDS pandemic, and in addition prepare learners for one of the major challenges: responsible sexual behaviour within a socially just society (ibid).

In South Africa the challenges of integrating CSE in secondary schools included religion, varying age ranges in one class, lack of adequate resources as well as learners' expectations Mchunu (2007). Mchunu further pointed that secondary literature on sexuality education indicates that there are numerous difficulties associated with teaching it, despite pressing reasons that it be well taught to all school learners. High rates of teenage pregnancy and HIV infection in young learners, particularly in South Africa, indicate the need for sexuality education.

Religion is a barrier in the teaching of sexuality education since educators expressed the view that it could not be openly discussed due to the restraints imposed by a religious viewpoint. Topics related to

the use of condoms are not allowed by some religions, yet educators need to discuss the use of condoms at school. The study revealed that some educators were reluctant to discuss topics that went against the specific principles of their religion (ibid)

In his study, Mchunu further revealed that educators were concerned with the non-availability of adequate resources to assist them in the teaching of sexuality education. This issue has affected the quality of lessons that they were able to provide in the classroom.

Other challenges as outlined by UNESCO (2015) include: no national plan to provide training to in-service teachers, although a number of HEIs offer ACE (in-service certification) programs, include life skills accreditation; There is no basic sexuality orientation module or course for pre-service teachers, although individual universities, such as the University of the Western Cape, have such provisions; There is *no* policy (as of 2013) on pre- or in-service teacher education on sexuality and *no* clear understanding of what takes place in HIV and TB awareness classes; There is a need to align theoretical policies and practices on HIV prevention and CSE. Beyond life orientation, which includes the integration of HIV&AIDS topics, there is no national support for the curriculum integration of topics and issues related to HIV and sexuality and Despite being “research-rich,” SE is less well developed than might be expected, in terms of a national plan for pre- and in-service teacher education, given the high rates of HIV-prevalence in South Africa.

In Botswana, a study by Kasonde (2013) pointed culture and lack of training as some of the challenges of integrating comprehensive sexuality education. Culture and lack of training are the major barriers to teaching sexuality education in secondary schools. Teachers needed in-service training to improve their overall knowledge on

sexuality education and modify their cultural beliefs. According to UNESCO as cited in Kasonde (2013) one of the common concerns about provision of sexuality education is that sexuality education is against local culture and religion. UNESCO stresses the need for cultural relevance and local adaptation, through engaging and building support among the custodians of culture in a given community. UNESCO reported key stakeholders, including religious leaders, must be involved in the development of what form sexuality education takes. However, UNESCO also stresses the need to change social norms and harmful practices that are not in line with human rights and increase vulnerability and risk, especially for girls and young women. UNESCO (2010) emphasized like other members of society, teachers live within a network of cultural and traditional beliefs that must be acknowledged and addressed if they create a barrier to effective teaching.

In Zambia one of the challenges of CSE integration according to Miyanda and Wakunguma (2014) in their study ‘a comparative study on adolescents’ sex education in Zambia and Norway’ is talking to adolescents on sexual and reproductive health issues due to increased technology. In the same vein, Boonstra (2011) indicated that, they have more access to the radio, television, Internet and mobile phones. They get a lot of information from these other sources some of which is wrong and inadequate. Furthermore, adolescents often get information about sexuality from friends and through the print and electronic media which is often wrong and unscientific. This makes them think as if they know everything and they do not pay attention to what their parents, teachers or nurses teach them (Prabhu, 2014).

UNESCO (2015) revealed that some of the challenges of CSE integration in Zambia include the following: There is a shortage of appropriate teaching materials, combined with “selective”

teaching methods, discomfort with the subject of sexuality and a lack of clearly defined policies in regard to teaching SE; There has been a lack of funding to support the integration of SE in the pre-service curriculum; While teacher training guides exist within institutions, these provide little rationale for the teaching of SE and its role in promoting healthy individuals, schools and communities; Programmes on sexuality and HIV & AIDS in teacher education colleges rely on external support and are considered co-curricular activities, confirming there is no specific focus on sexuality and HIV&AIDS issues in teacher training college courses; Trainee teachers’ exposure to SE, through partner-supported co-curricular programmes, is not sustainable; Exposure to SE (now CSE) through co-curricular programs is limited and these do not cover SE content comprehensively; Very limited time is allocated to issues of sexuality and HIV&AIDS and the delivery of these at classroom level; SE content delivered to student teachers through co-curricular activities varies from college to college as there is no standard module available; SE is not given adequate attention in TTCs as the subject has no specific time allocated to it; SE programmes are viewed as extra curricula activities and consequently given lower priority; These problems stem from a lack of understanding of what SE is, by college management, as well as a lack of capacity in the development and implementation of SE curricula by college tutors and lecturers and no planning or M&E tools exist to support the implementation of CSE programs in Zambian colleges of education.

With regards to CSE materials, only schools that piloted the teaching and learning materials had access to reference materials, and as mentioned earlier, a number of recommendations were made to improve them (UNESCO, 2016). Teachers also reported that reference books and teaching materials were not received at the same time as the

ZECF and CSE Framework curriculum, and thus not all topics were covered if information was not available. The implication of this is that schools that did not pilot the materials might only be teaching limited content *ibid*.

Wakunguma and Miyanda (2014) also revealed that culture sometimes can limit adolescent's access to the information and services they need to make informed and responsible decisions about their sexual and reproductive lives. For example, according to the Zambian tradition and culture, it is a taboo to discuss sexual matters with somebody from the opposite sex, unless between grandparents and grandchildren. Additionally, it is a taboo to discuss sexual matters with one's own child (Mburu, et al. 2014).

In Zambian culture, issues of sex are considered entirely private, very sacred and should not be talked about in the open and just with any audience. They have a place and time when they are discussed in the life of a girl or boy. For example, as a girl starts to experience physiological body changes, she is encouraged to keep a distance from people of the opposite sex irrespective of the relationship to her including her own father. This is to avoid unintentional arousing men sexually. The first thing a young girl is taught is to avoid sexual attraction to her which could lead to unintended consequences, with disastrous results and useful taboos being broken (Tembo, 2012).

Another challenge according to (UNESCO, 2016), is the merging of subjects and timetabling as one subject (e.g. Social Studies) put stress on teachers who were not trained in the other subjects and still had to teach them, while having less time for each subject. This in turn has likely affected the ability of these teachers to integrate CSE both from the point of view of time within a teaching period, but also as it is unlikely that somebody who is experiencing difficulties in teaching the prescribed syllabus will take the time to understand an

integrate additional new CSE content that is not in the syllabus.

1.4.3 Views of teachers on CSE integration

Bonjour and Van der Vlugt (2018) asserted that since decades, the focus of sex education is dominated by prevention of risks and sexual health. CSE promotes more positive approaches that go beyond a presentation of biological facts to call attention to less restrictive definitions of sexuality, sexual subjectivity and well-being. From an ethical perspective, it is necessary for CSE to deal with implicit and explicit messages that reinforce a narrow perspective on sexuality and bolsters inequalities of gender, sexual orientation and preferences. CSE must recognize and address the interplay among gender, race, class, ethnicity, etc. It should denounce ideologies that promote sexist, racist and classist notions of sexuality and stimulate compassion through critical thinking and tolerance towards differences. Greater comfort with your body and a positive self-esteem enables greater ability to share and communicate sexual desires and wishes with others. In particular the role of pleasure, informed consent, sexual rights, gender equality and cultural inclusive CSE needs more attention. Measurable outcomes or indicators for gender equality, critical thinking skills, a sense of confidence in consenting (sexual) relationships and sexual pleasure, have yet to be developed.

It is notable that in some countries CSE policy has shifted towards a more conservative approach in the last few years. In some countries there is strong opposition towards sexuality education, mostly from conservative religious groups, conservative political parties and conservative parent groups. Unfounded allegations about the risks of sexuality education are still made. In de vision of religious or conservative groups the messages and pictures are too explicit or not appropriate for young learners. Some religious groups, schools and organisations refuse to provide

CSE and prefer the abstinence only approach. They do think CSE will encourage young people being sexually active at a young age. CSE programmes should actively engage in dialogues with these types of opposition to increase correct understanding of CSE and its aimed impact. Continuous attention should be paid to involving key stakeholders in every phase of the programme, in order to stimulate local ownership and identifying socio-culturally acceptable ways to address certain sensitive issues Bonjour and Van der Vlugt (2018).

Research on professional preparation/training of teachers, shows that it is immensely important for the delivery of Comprehensive Sexuality Education. The Sexuality Information and Education Council of the United States (SIECUS), refers to these issues and supports the position that sexuality education should be taught by well prepared and trained teacher (Cyprus Family Planning Association, 2015).

Effective CSE requires highly skilled and motivated staff. Teachers must acquire participatory teaching skills and gain the confidence to discuss sensitive and controversial topics in a non-judgmental and rights-based manner in light of local realities, such as overcrowded classrooms and other limited resources. Their training requires the support of national ministries, local school management and communities, and should build on interactive training methodologies essential for both LSE and CSE. Critically, teachers must be willing and motivated to teach reproductive health and HIV issues, and accept the support of in-service training and mentoring. The teaching of SE should be conducted in a safe and appropriate learning environment that is also free from all forms of school-based gender violence and advocates for gender equality (UNESCO, 2015).

Several West European countries have already a long tradition with national comprehensive sexuality education in schools. Looking at the teenage birth rate in European countries, there tends to be a relationship between comprehensive sexuality education and a low rate of teenage pregnancies. The teenage rate tends to be very high in central Asian countries (such as Georgian, Russian Federation, Tajikistan) where sexuality education programs are still in an early stage of development (IPPF & BZgA, 2018). Beyond medical health outcomes, sexuality education can lead also to happier relationships by increasing confidence and strengthening skills. It also has an impact on positive attitudes and values and it evens out the power dynamics in intimate relationships resulting in mutually respectful and consensual partnerships (UNESCO, 2018). Also, in schools, learners and teachers feel more at their ease to talk about sexuality. There tends to be a more open atmosphere for young learners to pose questions or ask for help regarding sexuality and relationships (Schutte, 2016).

In the last decade, several guides and studies acknowledged that trained and well-educated teachers are a key factor in the delivery of good and effective sexuality education. Those studies done on the implementation process and continuation of CSE programs indicate the importance of not only focussing on developing high quality materials, but also investing in high quality delivery through competent educators (Vanwesenbeeck et al., 2016). Also addressing the contextual barriers teachers might face when implementing CSE programmes, increases their effectiveness (Vanwesenbeeck et al., 2016; UNESCO, 2018). A study in Finland on the impact of school-based sexuality education on pupils' sexual knowledge and attitudes showed that positive effects were largely due to the motivation, attitudes and skills of teachers, and the ability to

employ participatory teaching techniques (Kontula, 2010).

According to Kasonde (2013), in Botswana general knowledge of key sexuality issues was high among respondents even though some had incorrect attitude and their perception of sexuality education was in some cases not positive with regards to some key sexuality issues. All respondents agreed sex education increases awareness about HIV and AIDS among the youth in schools. Even though a majority of respondents (96%) agreed that sexuality education promotes condom condoms should be made available to students in their schools. This was reinforced that only 68% picked condoms as an effective protective method against STIs.

According to Bwalya (2012), sexuality education in Zambian schools formed what could be termed as the hidden curriculum. This means that the subject does not stand on its own like other subjects. There was no policy on paper to teach sexuality education in Zambian secondary schools. Nevertheless, sexuality education was partially integrated in other subjects which included Environmental Science, Biology, Civic Education and Religious Education both syllabuses 2044 and 2046. The first subject is offered at junior secondary or upper basic school level, while the other three are offered at senior secondary or high school level. On the other hand, Biology, Civic Education and Religious Education are optional subjects in some schools, meaning that not all pupils learn about sex and sexuality. In what follows, each of the four subjects has been analysed to see the extent to which issues of sex and sexuality are discussed or covered.

The study 'Perspectives on Sex Education in Relation to Sexual Health of Teenagers in Zambia' by Simalimbu in 2016 revealed that mothers or female guardians are more involved in sex education than fathers who are constrained with

productive work and the culture aspect, which does not allow men to discuss sexual matters with especially their daughters as it was considered taboo. Other sources of information on sexuality for teenagers were the media, friends and school where they got more information, as the one from parents was more of the negative part of sex with emphasis on the effects of premarital sex such as pregnancies and sexually transmitted diseases. Findings show that society was not comfortable with information coming from friends and the media as it might not give accurate information, thus they were more comfortable with the school to take up sex education. School was seen as a better place to capture a lot of teenagers; offer evidence based and corrects harmful sexual practises such as the use of herbs by women to tighten vaginas and having multiple sexual partners as a way of gaining experience by men. However due to the influence of Christianity schools have put more emphasis on abstinence as the only way to avoid pregnancies and sexually transmitted diseases.

2. RESEARCH METHODOLOGY

2.1 Research design

Research methodology is a technique used to structure a study and to gather and analyse information in a systematic fashion (Polit and Beck, 2010). It outlines the research design, study population, sample selection, data collection tool and techniques to be used in the study, pilot study and ethical considerations. In this study a descriptive case study design was used in order to gain a rich understanding of the phenomenon as it exists in the natural setting. A descriptive design is selected because of its high degree of representativeness and the ease with which a researcher could obtain the participants' opinion (Schervish, 1996). According to Zainal (2007), case study method enables a researcher to closely examine the data within a specific context. In this study, the researcher obtained views of the

respondents with regard to the integration of comprehensive sexuality education in mathematics, the extent of its integration and the challenges and opportunities faced when integrating.

2.2 Sampling procedure

Random and purposive sampling methods were used to help target a group which was suitable to bring out rich data related to the integration of comprehensive sexuality education for in-depth analysis. In purposeful sampling also known as judgmental sampling the aim is to choose cases that are likely to be information rich with respect to the purpose of the study (Creswell, 2007). Simple random sampling technique was used to select ten secondary schools and come up with the sample of thirty five teachers of Mathematics in the selected schools whilst purposive sampling technique was used to come up with the sample of ten guidance teachers, ten heads of Mathematics departments, one education standards officer, two district resource centre coordinators and two ZAME representatives in Kitwe.

2.3 Target populations and Sample size

Creswell (2007) defines population as a group of individuals with some common defining characteristic that a researcher can identify and study. The target population included all secondary school teachers, guidance teachers, head of departments for Mathematics, education standards officers, resource centre coordinators and the Zambian Association of Mathematics Educators (ZAME) district representatives.

Sample size determination aims at selecting part of the population from which information will be drawn to form conclusions about the entire population. The sample size was sixty (60) in total and the breakdown of the respondents were as follows; the number of secondary school teachers of Mathematics were thirty five (35), and the

number of school guidance teachers were ten (10), the number of heads of Mathematics departments were ten (10), one education standards officer (1), two (2) district resource centre coordinators and two (2) ZAME representatives in Kitwe.

2.4 Sampling techniques

Random and purposive sampling methods were used to help target a group which was suitable to bring out rich data related to the integration of comprehensive sexuality education for in-depth analysis. In purposeful sampling also known as judgmental sampling the aim is to choose cases that are likely to be information rich with respect to the purpose of the study (Creswell, 2007). Simple random sampling technique was used to select ten secondary schools and come up with the sample of thirty five teachers of Mathematics in the selected schools whilst purposive sampling technique was used to come up with the sample of ten guidance teachers, ten heads of Mathematics departments, one education standards officer, two district resource centre coordinators and two ZAME representatives in Kitwe.

2.5 Instruments for data collection

Data collection instruments may take the form of a questionnaire or interview schedule, check list, projected device or some other type of tool for eliciting information (Polit and Beck, 2010). The questionnaires and interview guides were used to collect data that was needed for the study.

2.5.1 Questionnaires

The questionnaire was the main data collection instrument for this research and it was chosen because it helps the researcher to collect large amount of data in large areas within a short time thus saving time for the study (Orodho, 2003). The questionnaires were used because of their ability to collect data from a large sample and their rigidity against biasness. The other justification is that, a

questionnaire ensured that the respondent's confidentiality was upheld and it was of less time consuming where data collection and analysis was concerned (Kombo and Tromp, 2006). The questionnaires were prepared using both open ended and closed questions which were based on the research questions and objectives of the study.

2.5.2 Interview schedules

An Interview guide was used to collect qualitative data for this study. Interviews are among the most familiar strategies for collecting data in which participants respond to questions asked by the researcher (Seidman, 2013). Interviews are said to be conversations with a purpose as they are used by the researcher to understand the lived experiences of the participants and the meaning they make of that experience (Ennew, 2009). To achieve this, it is important to understand that the research interview is not a conversation between equal partners. This is due to the fact that the researcher is in control by introducing the topic of the interview and making critical follows up on the subject's answers to the questions (DiCicco-Bloom & Crabtree, 2006). During interviews, I decided to use semi structured interviews as they consist of several key questions that help to define the areas to be explored but also allows the interviewer to phrase the questions, and ask in any order as long as the themes are covered. In this way it provides participants on what to talk about giving them greater control over the direction of the conversation and allows them to tell their story in their own way (Ennew, 2009). This helps in minimising the power imbalance between the researcher and the participants.

2.6 Procedure for data collection

The researcher obtained letter of introduction from the Information and Communications University and a research permit from then Kitwe District Education. With these documents, the researcher

booked appointments with the respondents at each selected secondary school, District resource centre and the DEBS office, which was followed by a pre-visit to the selected schools on the respective appointment dates. The questionnaires were then administered to the relevant respondents. The researcher ensured punctuality on the appointment dates, this helped to reduce inconveniences to the respondents, hence increasing the response rate. An appointment was made for interviews to get opinions from the stated respondents.

2.7 Data analysis techniques

Data analysis is the process of systematically searching and arranging the raw data, with the aim of increasing one's own understanding of the data. The study used two data gathering techniques, for there is no single technique that is adequate in itself in collecting valid and reliable data on a particular problem (Patton, 2001). Data which was collected was analyzed using both quantitative and qualitative methods. Qualitative data was analyzed thematically using content analysis, as themes and sub themes emerged from the data that was collected. Quantitative data was analyzed using excel to obtain descriptive statistics such as frequencies and percentages.

2.8 Triangulation

The study employed triangulation in that the questionnaires and interviews were used. This was to enable the researcher have reliable and valid results as pointed out by Silverman in 2000 who said that triangulation in data collection is the involving of two or more methods in the study, and it could help explain more fully the richness and complexity of data. Triangulation is a powerful technique that facilitates validation of data through cross verification from two or more sources Honorene (2016). In particular, it refers to the application and combination of several research methods in the study of the same phenomenon

(ibid). To check the consistency of findings that is got by different methods of data collection. It is common to have qualitative and quantitative data in a study. These elucidate complementary aspects of the same phenomenon. Often the points where these data diverge are of great interest to the qualitative researcher and provide the most insights Patton, (2001). The questionnaires and interviews were used to collect data on the same themes to ensure that the weakness of one method was compensated by the other. Hence, providing a critical and objective interpretation of the data collected.

2.9 Ethical consideration

Ethics is a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit and Beck, 2010). The respondents have the right to know the purpose of the research, the nature of the study situation and the results of the study. Ethical issues are present in any kind of research. Ethics provide the basics for conducting research Kothari, (2004). In other ways ethics in research are guidelines and principles that are set with a view to respect, protect participants, researchers and their institutions by minimising harm, assure trust and ensure research integrity (Aluwihare-Samaranayake, 2012). Some of the ethical procedures put in place for this research are informed consent, confidentiality, privacy, power differentials and reciprocity. Hence, to facilitate smooth collection of data as per requirement in research, permission to conduct this research was sought from the Information and Communications University Research Committee, the Kitwe District Education Board Secretary's Office and the Head teachers of respective Schools in Kitwe. The respondents were asked to give their consent to participate in the study. The participants were assured of high confidentiality to the data they will provide and that will be done by instructing them

not to indicate their names on the questionnaires. Further the participants were informed of their right to withdraw from the research at any time without giving any reason even after giving their consent. Those who refused to take part in the study were not be forced or persuaded to change their minds. Research often involves a great deal of co-operation and coordination among different people in different disciplines and institutions, ethical standards provide the values that are essential to collaborative work such as trust, accountability mutual respect and fairness. In this regard honesty, not fabricating or falsifying data and not to misinterpret data that was collected is assured.

3. FINDINGS AND DISCUSSION

3.1 The extent of CSE integration in Mathematics

The first objective of the study sought to establish the extent to which CSE is integrated in Mathematics. This was achieved by asking the respondents if or not they integrated all CSE topics in Mathematics, to state the CSE topics which they integrated in Mathematics and also state the Mathematics topics where they integrate CSE.

A. Table 3.1.1 Integration of CSE topics in Mathematics

Responses	Frequenc y	Percenta ge
All CSE topics	0	0
Not all CSE topics	60	100

Source: Field Data, 2018

Table 3.1.1 indicates that all the sixty (60) sampled respondents representing 100% of the respondents mentioned that not all CSE topics are integrated in Mathematics. This illustrates that

teachers of Mathematics are also integrating CSE in their respective classes.

Table 3.2 Teachers' and HODs' Responses on CSE topics mostly integrated in Mathematics lessons

CSE Topics	Freq	Percent
Relationships	45	100
Values, Attitudes and Skills	45	100
Culture, Society and Human Rights	30	66.7
Sexual and Reproductive Health	35	77.8

Source: Field Data, 2018

From table 4.3.2 above, it is clear that (45) 100% of the stated respondents integrated relationships, values, attitudes and skills in their Mathematics lessons. While (30) 66.7% of the total number of the stated respondents integrated culture, society and human rights and (35) 77.8% integrated sexual and reproductive health. This clearly shows that teachers of Mathematics mostly integrate four (4) representing 66.7% of the six (6) CSE topics covered by the CSE framework in Zambia.

Table 4.3.3 Mathematics topics where CSE is mostly integrated

Grade 10	Grade 11	Grade 12
<ul style="list-style-type: none"> • Sets • Similarity and Congruency 	<ul style="list-style-type: none"> • Approximations • Sequences and Series • Relations and Functions • Probability • Statistics 	Linear Programming

Source: Field Data, 2018

Table 4.3.3 indicates some senior secondary school Mathematics topics and grades where CSE is regularly integrated. Most of the sampled teachers and HODs indicated that they were integrating CSE in the stated topics. This illustrates that CSE is mainly integrated into eight (8) topics representing 26.7% of the thirty (30) senior secondary school Mathematics topics.

Since Comprehensive Sexuality Education is one of the cross-cutting issues that can be approached in diverse ways, in many compulsory and optional subjects of the school curriculum. The study found out that all the sampled senior secondary school teachers and heads of Mathematics departments were integrating Comprehensive Sexuality Education into their classes. It was further established that 100% of the aforementioned did not integrate all the CSE topics in Mathematics. The CSE topics integrated in Mathematics varied from one respondent to another depending on the Mathematics topics and grades they were handling. In addition, the study found out that teachers of Mathematics mostly integrated four (4) representing 66.7% of the six (6) CSE topics covered by the CSE framework in Zambia. These topics included; relationships; values, attitudes and skills; sexual and reproductive health and culture; society and human rights. The study further revealed that CSE was mostly integrated into eight (8) topics representing 26.7% of the thirty (30) senior secondary school Mathematics topics. However, some respondents mentioned that, despite integrating sexuality and reproductive health in some Mathematics lessons, issues concerning pregnancy prevention were not integrated.

Van der Vlugt and Bonjour (2018) point out that Sexuality education programs are often not implemented in schools in the way they were originally designed. Lack of fidelity in the way the developed CSE programme is actually translated

into a learning process, are often stated as a main reason for less evidence of impact (Vanwesenbeeck et al., 2016).

Evidence indicates that modifications to programmes (for example, during an adaptation process) can reduce effectiveness. Such risky adaptations include reducing the number or length of sessions; reducing participant engagement; eliminating key messages or skills to be learned; removing topics completely; changing the theoretical approach; using staff or volunteers who are not adequately trained or qualified; and/or using fewer staff members than recommended. However, some adaptations, such as changing some language, images or cultural references does not impact on effectiveness. Effective educational interventions transported from one setting to another have a positive impact on knowledge, attitudes or behaviours, even when they are implemented in a different setting (Kirby et al., 2006).

A review of sexuality education programmes in various countries (Haberland, 2015) found that when gender and power related topics are taught, it improves the effectiveness of the programme, especially in terms of preventing unwanted pregnancies. Specifically, 80% of programmes that incorporated teaching about gender and power were effective in reducing unwanted pregnancies or STI transmission, while only 17% of programmes that did not include them were effective in bringing about these outcomes. Teaching about gender and power helps to cultivate students' critical thinking skills, which in turn improves their ability to analyze their own life situation, recognize their value and empower them. These elements help students to apply what they learn in class to their own lives and to have greater negotiation power in their sexual lives (Haberland, 2015). Thus, insufficient coverage of topics related to gender, rights and power is an important gap in Thai CSE provision and might help to explain why Thai

students still face significant challenges in applying what they learn to their own lives as well as why the rates of teenage pregnancy and STI/HIV incidence have remained high among Thai youth (UNICEF, 2016).

The sampled teachers who were handling grade ten (10) classes indicated that CSE was mainly integrated into only two (2) topics which included sets and similarity and congruency. One teacher mentioned that it was easy to integrate families and relationships when introducing sets to the learners. The teacher further gave an illustration on how the integration of attributes of a health family relationship was done when introducing the lesson on the intersection of sets.

The study findings pointed out that at grade eleven (11) CSE was mostly integrated into five (5) topics which included; approximations, sequences and series, relations and functions, probability and statistics. Some HODs gave examples on how CSE was integrated in some of the above-mentioned topics. One of the examples given was on how decision making which falls under values, attitudes and skills was integrated when teaching sequences and series. According to the findings, this was mainly done by reasoning with pupils on how in decision making a person would expect either positive possible outcomes or negative possible outcomes. It was further revealed that friendship and relationship was integrated in relations and functions, tolerance in approximations and HIV/AIDS related issues in probability and statistics.

Regarding the integration of CSE in Mathematics at grade twelve (12), the study revealed that the integration was mainly done in linear programming. However, examples on how this was done were not given by most respondents who mentioned that they integrate CSE in linear programming. This finding brings the question to whether or not the sampled grade twelve (12)

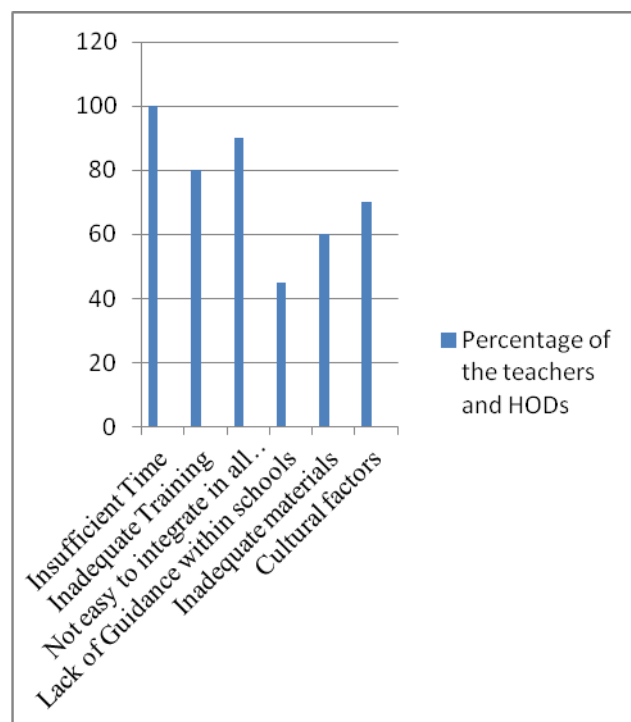
teachers integrated CSE in their lessons as all of them could not give an example of how this was done. This finding clearly indicates that not much was done in the face of CSE integration in Mathematics to the grade twelve (12) learners and may be against the theoretical framework of this study which holds that, individuals are accountable for fulfilling their civic duty; the actions of an individual must benefit the whole of society. In the same vein, despite some respondents indicating that they integrated culture, society and human rights in Mathematics, no respondent gave an example of how the integration was done.

The above findings are similar to the findings of Van der Vlugt and Bonjour (2018) who found out that not all the CSE programs are truly comprehensive – in content or approach. Content-wise, developers often tend to put too much emphasis on biomedical information, such as changes during puberty and hygiene, anatomy and physiology of reproduction, and sexual behaviour in relation to STI/HIV and other health risks. While, sensitive topics, such as modern contraception, sexual pleasure, mutual consent, gender related power differences, safe abortion and sexual diversity are minimized or left out completely. However, for CSE to be effective, it is important that CSE includes ongoing discussions about personal, social and cultural factors relating to healthy and equitable relationships. This includes topics such as identity and self-esteem, gender and power inequalities, harmful norms and practices and navigation between personal agency and autonomy and sociocultural vulnerability in restricting environments (UNESCO, 2018; Vanwesenbeeck et al, 2018).

3.2 Challenges of integrating CSE in Mathematics

The second objective of the study sought to explore the challenges and opportunities of integrating CSE in Mathematics.

Figure 3.2.1 Challenges teachers and HODs faced when integrating CSE in Mathematics



Source: Field Data, 2018.

According to the findings, all the stated participants representing 100% mentioned insufficient time as one of the challenges of integrating CSE in Mathematics while 80% of the stated respondents mentioned inadequate training as another challenge. In addition, the findings revealed that 90% of the aforementioned indicated that it was not easy to integrate CSE in all topics in Mathematics and 45% mentioned the lack of guidance within schools. The findings further revealed that 60% and 70% of the stated respondents mentioned inadequate materials and cultural factors respectively. The majority (8) of guidance teachers and all ZAME representatives also pointed out lack of policy guidance as one of the challenges of CSE integration.

3.2.1 Insufficient time

The study revealed that all the sampled teachers and HODs mentioned insufficient time as one of the challenges of integrating CSE in Mathematics. The amount of time, learners are actively and successfully engaged in essential academic skills contributes significantly to achievement. The amount of time spent in formal instruction or teaching is an important measure of educational input. A large body of literature exists which demonstrates strong, positive correlations between instructional time and student achievement. A consistent finding is that the amount of time, students are actively and successfully engaged in essential academic skills contributes significantly to achievement.

However, some stated respondents indicated that integrating CSE into an eighty (80) minute lesson was a challenge. Despite the Ministry of General Education policy for all teachers to integrate CSE into their classes because sexuality is a cross-cutting topic that can be approached by different ways in many compulsory subjects of the school curriculum, there is no change in instructional time allocated to Mathematics to accommodate effective integration of CSE. One of the stated respondents mentioned that, the instructional time for Mathematics has been reduced to two hundred forty (240) minutes per week in the new curriculum from two hundred eighty (280) minutes because of the increase in the number of subjects and that it was difficult to incorporate more CSE issues in the lessons considering the fact that it was not examined. Another respondent indicated that the eighty (80) minutes was not adequate to teach the learners more about CSE, it was further established that the integration was mainly done when introducing the lessons to avoid wasting more time on CSE than the examinable Mathematics.

These findings are similar to Mchunu (2007) in South Africa who found out that there was no time

allocated on the timetable for sexuality education. He further found out that sexuality remained closeted and educators claimed that they wanted to finish the syllabus for the entire examination-oriented subjects. He further revealed that on the school timetable, sexuality education was provided during the guidance period. However, guidance was a non-examinable subject and many teachers used this period for covering the syllabus for the examinable subjects. This meant that sexuality education was often neglected.

UNESCO (2015) also point out that in a number of countries, life skills-based se is allocated limited time, for example, in Malawi, there are three teaching periods (a period is 40-45 minutes) allocated to the delivery of life skills in a week ,while in Botswana, there are only two teaching periods a week for the delivery of LSE. The limited curriculum time made available raises questions around the strengthening of the curriculum implementation of life skills-based SE. Teachers don't have enough time to deliver effective life skills-based CSE, which impacts greatly on the quality of the content and the enactment of behavioural change skills that are depicted in the curriculum. Likewise, in teacher training, life skills-based SE is not given adequate attention in TTCs as a subject. In many TTCs, no specific time is allocated to the subject because it is viewed as part of extracurricular activities and consequently, given lower priority.

3.2.2 Inadequate training

According to the findings of the study, 80% of the teachers and HODs pointed out that were not adequately trained to integrate CSE in Mathematics. It was established that most of the sampled respondents agreed to the fact that they received some CSE training during a one-day ZAME district workshop but were quick to mention that the training was not adequate to prepare them in delivering and integrating CSE.

These findings are in line with the findings of UNESCO (2015) that teachers in some countries were not adequately prepared to deal with every aspect of Sexuality Education in the classroom. Training of educators for any curriculum reform is essential if it is to have an affirmative result.

To be effective CSE educators, teachers need to be equipped with certain knowledge, attitudes and skills (WHO & BZgA, 2017). For lots of educators, sexuality remains a sensitive topic. They don't feel comfortable with sexuality or do not know how to discuss topics openly (Van de Bongardt et al, 2013). There is evidence that the beliefs, attitudes, values and sense of self-efficacy educators hold, influence how they deliver CSE messages (Vanwesenbeeck et al., 2016).

Despite this evidence, there is still too little attention for teachers in the adoption of CSE programs, while there is a great need for continuous technical and didactic support throughout all implementation phases to ensure fidelity (program integrity) and completeness in use of the program.

UNESCO (2009) points out that despite the clear and pressing need for effective school-based sexuality education in most countries throughout the world, it is still not available. There are numerous reasons which include perceived or anticipated resistance resulting from misunderstandings about the nature, purpose and effects of sexuality education. Some evidence has shown that many people, including education ministry staff, school principals and teachers, may not be convinced of the need to provide sexuality education and so they are reluctant to provide it due to lack of confidence and skills to do so. Sometimes, the teachers' personal or professional values are in conflict with the issues they are being asked to address. Moreover, there is no clear guidance about what to teach and how to teach it.

In a review of the application of the Population Council's It's All One CSE training tool, the authors find that teacher preparedness is the major challenge facing most countries (Rogow et al., 2013). Teachers may not be specifically trained in delivering CSE and may lack knowledge and attitudes to deliver this effectively. The authors recommend that a significant investment is made in teacher training. In the vein, UNESCO (2010) found that teachers' in China demand for training in sexuality education far exceeds the available supply. In Mexico, only half the teachers reported having received CSE training in the past three years (UNESCO, 2010).

A European survey demonstrated that only in three out of 25 countries the majority of teachers have been sufficiently trained on CSE (IPPF & BZgA, 2018). Sometimes teachers got incidental training courses in CSE. Only very few were trained in CSE during their initial education in teacher colleges.

This may be because of lack of consensus or real standards regarding needed competences. Therefore, the WHO Europe recently published a framework with core competencies for CSE educators on the level of knowledge, attitudes and skills, see figure 2 (WHO & BZgA, 2017). Also, the IPPF 2017 toolkit on CSE provides a combination of competences (attitudes, skills and knowledge) to foster effective CSE delivery. The role of teachers in CSE is changing from a director role to a more facilitating and pedagogic role. This means facilitating discussions with students, let them more dealing with conflicts, improve reflections and setting rules together. However, many professionals and teachers feel mostly embarrassed or they lack specific competences to do so. Delivering CSE within a more pedagogic approach asks adequate training and capacity. Better training and support for teachers can encourage teachers to discuss sensitive topics and

use participatory methods. However, including enough attention for the training and support of teachers in CSE programming, also budget, planning and organisational structure is still challenging.

Successful CSE integration requires highly skilled and motivated teachers. Hence adequate training of teachers is vital in the delivery of school-based CSE. However, there were concerns that some teachers shunned CPD meetings where CSE issues were mostly discussed and this could be one of the reasons why they claimed not to be adequately trained.

All the sampled guidance teachers also mentioned that some teachers were trained on how to integrate CSE in their classes but could not tell whether the training was adequate or not. One guidance teacher pointed that there were still teachers of Mathematics who failed to integrate CSE into their classes.

In the similar vein a study by Mchunu (2007) also found out that in some parts of South Africa, even though teachers were given training in the implementation of sexuality and life skills in those schools, the training periods were too short and they lasted only about one to three days. It was revealed that teachers always felt that their training was insufficient as well as too short. Secondly, teachers always felt that they were not comfortable in dealing with sexuality-related issues. The short training that was provided did not help them to develop confidence in dealing with these sexuality-related issues.

3.2.3 Difficulties in integrating CSE in all Mathematics topics

The study established that 90% of the respondents stated that it was not easy to integrate CSE in all Mathematics topics at senior secondary school level. Mathematics aims at developing clear

mathematical thinking and expression in a learner and also develop ability to recognize problem and to solve them with related mathematical knowledge and skills. In this vein, some of the teachers mentioned that it was not easy integrating CSE in topics such as earth geometry, trigonometry and cubic functions among others because of the nature of these topics.

Mathematics is a compulsory subject that often brings difficulties to most learners as it can be seen from their low performance. Geometry plays an important role in the primary, secondary and higher mathematics curricula in Zambia and other countries of the world. It provides a rich source of Visualization for understanding arithmetical, algebraic, and statistical concepts Kambilombilo (2015). Geometry provides a more complete appreciation of the world we live in. learning geometry is not just learning definitions or the attributes of geometrical concepts but also to have the ability of analyzing the properties of two dimensional and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships. It also entails that; teachers and pupils must develop strong spatial and visual power to be able to visualize objects in two and three dimensions without problems.

Geometry is a rich source of opportunities for developing notions of proof. Tembo (2013) established the worthiness of emphasizing visual images in teaching geometry, particularly those images which can be manipulated on the computer screen such that learners could be invited to observe and conjecture generalizations. New developments in computing technology mean that the 21st century is an era in which spatial thinking and visualization can exist. The teachings of geometry demand that teachers make it a point to display visual aids to enable learners make interpretations and draw conclusions. In the same vein, one HOD mentioned that earth geometry can

easily be linked to the environment but integrating CSE in earth geometry could perhaps just confuse the learners.

3.2.4 Lack of guidance within schools

The study found out that 45% of the respondents mentioned lack of guidance within schools as another challenge of integrating CSE in Mathematics. However, there were some concerns that some supervisors did not give guidance on how to go about the CSE integration. One teacher indicated that despite being trained on how to integrate CSE through conferences and CPD meetings, there was no emphasis on its importance and adequate monitoring from their supervisors.

These findings are similar to the findings of Christman (2014) who found out that, educators were being asked to integrate CSE in their classes but did this without support or guidance from their school boards and sometimes even their administration. Their idea of lack of guidance may be questionable as all the sampled Guidance and Counseling teachers agreed to the fact that enough guidance was given to teachers on how to integrate CSE and the importance of doing so. One of the roles of guidance and counseling teachers is to educate teachers, non-academic staff and parents to be sensitive to the developmental needs of the students at school and home environment.

In the same vein, it was established that some schools even held workshops locally to discuss on how best teachers from different departments can integrate CSE. At one named secondary school, the teachers indicated that, CSE topics were shared among departments depending on the compulsory subjects offered to enhance effective implementation and integration.

This is in line with the study by Bwalya (2012) who found out that despite having the Guidance and Counselling sections in schools to mentor

pupils in various aspects which include sexual issues, there were still problems faced by the school authorities as well as the pupils themselves pertaining to issues of sexuality. The study cited the problem of homosexuality among teenagers in single sex boarding schools and further explained that at some girls' boarding school, there were cases of lesbianism which would at times result in fights amongst girls. In such relationships, girls became emotionally attached and developed jealousy which in turn negatively affected their concentration on academic work. In boys' boarding schools on the other hand, cases of homosexuality were not as common as those found in girls' boarding schools. He attributed these practices to lack of sexuality education both at home and school.

It further explained that in most Zambian ethnic cultures, parents were not free to discuss issues of homosexuality with their children as it was considered a taboo. However, since they would want their children to refrain from such activities, schools can be used to educate them on the negative effects of indulging in such sexual activities. He pointed out that such sexual practices usually had very bad effects on the lives of young people even after they had left school. Some women failed to keep stable relationships with members of the opposite sex, while some men became molesters of young boys.

3.2.5 Inadequate Materials

It was established from the findings of the study that 60% of the participant pointed out inadequate materials as one of the challenges of integrating CSE in Mathematics. It was further established that most of the sampled schools had the CSE materials but were insufficient to cater for all the teachers and learners.

When asked if there were specific text books to guide teachers of mathematics on how to integrate

CSE in Mathematics, most guidance teachers disputed that fact. Some teachers also pointed out that the CSE Framework does not stipulate which CSE topics should be integrated into which topics and sub-topics of the subjects that are stand-alone and examinable. Teachers are expected to use the CSE Framework in tandem with the syllabi for their subjects to identify places where CSE can be integrated, and thus develop schemes of work and lesson plans that include CSE components.

Teachers require support materials in-order to be able to effectively deliver CSE. A variety of materials are needed in line with the different age groups of students and these include syllabus, background reading material, advice on methodological approaches; materials on classroom management; information on support structures for referral; and lesson plans and audio-visual materials. The study results reveal that different teaching materials, which range from posters, books, magazines, leaflets and brochures to videos, are offered and it was reported that the quality of the material varies for the different in-service providers (UNESCO 2015).

In the similar vein, a study in Kenya by (UNESCO, 2010), revealed that there were suitable teaching and learning materials, but they were not available in sufficient quantities. Another study by Christman (2014) also revealed that there were no adequate materials to help guide the teachers on what, when, where and how to integrate CSE in their respective classes.

3.2.6 Cultural Factors

The findings of the study indicated that 70% of the sampled teachers mentioned cultural factors as one of the challenges of integrating CSE in Mathematics. According to Noonan (2006), in many societies attitudes and laws stifle public discussion of sexuality and sexual behaviour – for example in relation to contraception, abortion, and

sexual diversity. Educators or service providers may believe that sex education leads to early sex, deprives children of innocence, is against their culture or religion, is a role for parents or that parents will object, that they do not possess the skills to teach it effectively, or that it is already covered in biology lessons (UNESCO, 2009). This is a strong theme across the literature, and is identified as the major challenge to implementation.

CSE should denounce ideologies that promote sexist, racist and classist notions of sexuality and stimulate compassion through critical thinking and tolerance towards differences through critical reflection on (cultural, religious, societal) values regarding sexuality (UNESCO, 2018) as cited in Van der Vlugt and Bonjour (2018). In essence, this calls for the ‘Socratic method’: a dialectical method involving discussion to discover beliefs, assumptions and arguments and eliminating contradictions so as to come to more general and shared solutions to value conflicts. Increasing the students’ capacity for critical self-examination and critical thinking about one’s own culture and traditions, contributes to social justice and compassionate societies.

This raises questions whether CSE conflicts with local culture. However, CSE aims to be culturally inclusive. This means that it supports young people in navigating the multiplicity of (conflicting) ideologies, values, needs and practices that are, invariably, already present within a multicultural society, not least in relation to gender and sexuality (Vanwesenbeeck, 2018). Students are better prepared for the existing cultural and societal realities if they are introduced to conflict and given the competence to live, navigate and thrive within it. Sexuality education should help to cultivate and develop what we might call sex cultural intelligence. Sex cultural intelligent people realise, among others that one always operates within a

culture or some subsets of culture. They are able to keep an open mind about other sex cultures, and are able to critically engage in their own and others' sexual cultures without being too easily influenced. CSE can also provide an important forum for building solidarity between young people with varying degrees of access to privilege and sexual rights. It can also strengthen active citizenship skills for working towards a sexual culture that is more just and equal.

Social and cultural norms often deny girls and women—and often boys and men—access to comprehensive information about sexual and reproductive health. Such norms can perpetuate harmful traditions that cause physical and emotional damage. Cultural expectations and dictates can deny girls and women the right to make choices about their own bodies and futures and prevent their ability to access health care.

A study by Bwalya (2012) points out that, in certain Zambian cultures, parents were not comfortable to talk about all issues of sexuality with their children. Traditionally, it was unthinkable to discuss sexual matters with one's own child as for instance, issues of oral sex, masturbation, anal sex as well as homosexuality. One of the key informants in that study suggested that these issues could be included in the syllabus because most parents were not free to talk about them with their children. The other problem with this option is that since sexuality education did not take place in every home, there were few chances of many young people accessing accurate information.

In China, community resistance to new CSE programmes was strong because parents feared it would teach their children to start having sex at an early age, and that CSE was a Western concept unsuitable for China (UNESCO, 2010). Programmes instead focus on abstinence-only education. Some teachers in China (Rogow et al.,

2013) and Thailand (Thaweessit & Boonmongkon, 2009) were found to reinforce gender stereotypes and discrimination in their CSE classes. In Thailand, teachers do not teach CSE despite there being a national policy and curriculum, which the authors attribute to teacher discomfort or resistance (Thaweessit & Boonmongkon, 2009).

Issues of sex in Zambian culture are considered exclusively private, very sacred and are not talked about in the open and just with any audience (Simalimbu, 2016). They have a place and time when they are discussed in the life of a girl or boy. The first thing young girls who start to experience physiological body changes are taught is to keep a distance to people of the opposite sex irrespective of the relationship including their own father. They are also taught to avoid sexual attraction to her which could lead to unintended consequences, with disastrous results and useful taboos being broken (Tembo, 2012).

A study by Wakunguma and Miyanda (2014) also revealed that culture sometimes can limit adolescent's access to the information and services they need to make informed and responsible decisions about their sexual and reproductive lives. For example, according to the Zambian tradition and culture, it is a taboo to discuss sexual matters with somebody from the opposite sex, unless between grandparents and grandchildren. Additionally, it is a taboo to discuss sexual matters with one's own child (Mburu, et al. 2014)¹.

According to UNESCO one of the common concerns about provision of sexuality education is that sexuality education is against local culture and religion. UNESCO stresses the need for cultural relevance and local adaptation, through engaging and building support among the custodians of culture in a given community. UNESCO reported key stakeholders, including religious leaders, must be involved in the development of what form sexuality education takes. However, UNESCO also

stresses the need to change social norms and harmful practices that are not in line with human rights and increase vulnerability and risk, especially for girls and young women. UNESCO (2010) emphasized like other members of society, teachers live within a network of cultural and traditional beliefs that must be acknowledged and addressed if they create a barrier to effective teaching. Cultural and religious resistance Evidence suggests that many people who could deliver CSE are not convinced of the need to provide it, or are reluctant to (UNESCO, 2009).

In Nigeria, in order to scale up the national CSE programme, the government was forced to modify the curriculum in order to reach consensus (Haberland & Rogow, 2015). Religious and conservative groups achieved a number of changes in the curriculum, including the proviso to adapt the curriculum to suit local cultures (UNESCO, 2010). Cultural resistance and the belief that CSE encourages sexual activity are identified as the most significant challenges in Nigeria (UNESCO, 2010). There is strong evidence against this claim. Clear and replicable research has shown that CSE does not lead to earlier sexual initiation or an increase in sexual activity (Braeken & Cardinal, 2008). The study revealed that as much as aspects of HIV&AIDS are included in the education sector policies, not all education sector policies in the 21 countries give clear guidance on the delivery of CSE or teacher training for CSE. The lack of policy direction on life skills-based SE in teacher training remains a key barrier to the development of effective teacher training programmes.

3.2.7 Lack of policy guidance

The study findings indicated that lack of policy guidance was one of the challenges of CSE integration. This lack of policy direction has also affected the mainstreaming of CSE in government plans and programmes. The result is that CSE has remained a donor-funded initiative, which has not

found a home and funding through the government structures—this poses a threat to its sustainability (UNESCO, 2015)

The Life Skills Education Framework (2011) and the Comprehensive Sexuality Framework (2013) in Zambia are currently being merged to provide guidelines on minimum content for different levels of education. Reproductive health and sexuality education have also been recognised as a cross-cutting subject within the Zambia Education Curriculum Framework 2011(ZCEF), a policy framework that guides what will be taught to learners in Zambia. The Comprehensive Sexuality Education Framework (2014) guides the SE content taught at each grade level. Life skills-based SE is not taught as a stand-alone subject, but has been integrated for example into social studies, civic education, integrated science, biology, home economics and religious education. Some of the guidance teachers indicated that there is no mention on the integration of CSE in Mathematics in the policy document yet the Ministry of general education has made pronouncement that all teachers must integrate CSE in their classes. This could be one of the reasons for unwillingness by some teachers to integrate CSE in Mathematics.

Most countries in the region have clear policies that guide the delivery of LSE at the country level, usually through National AIDS policies or Education Sector policies. Some countries, such as Tanzania and Zambia, have developed SE frameworks or guidelines. However, most TTIs and FOEs do not have guidelines to develop and implement CSE in their subjects. As a result, there is some level of confusion as to what should be covered and whose responsibility it should be to ensure adequate coverage of the issues. Governments in the ESA region and, in turn, TTIs need deliberate efforts to harmonise policies and guidelines, and to offer specific guidelines for

teacher educators to implement the CSE curriculum (UNESCO, 2015).

Most curricula in the region are overcrowded and examination-oriented. The inclusion of CSE into an already over-crowded curriculum has immediate implications for what gets taught at the classroom level. Governments and institutions need to make a decision on which model (or a combination) to use and develop strategies to overcome the challenges that are related to each model. There seems to be many different examples in the region and while there may not be one ‘best’ model, there are needs for evidence and informed

Items	Frequency	Percent
Agree	39	86.7
Disagree	6	13.3
Total	45	100

guidance to support.

According to UNICEF (2016), one effect of having few policies in place in the region related to the provisioning of teacher education and CSE is the paucity of M&E mechanisms in place. This emphasises the importance of comprehensive EMISs and their use in planning, management and monitoring. An EMIS will be important in tracking supply and demand of teachers at the institution level, as well as coverage of CSE at school level. Without clear and documented policy directive on the teaching of CSE educators have a limited sense of ownership of CSE and HIV&AIDS programmes, regarding these as “extra tasks,” which are additional to the formal teaching activities.

Most TTIs and FOEs do not have guidelines to develop and implement CSE in their subjects. As a result, there is some level of confusion as to what should be covered and whose responsibility it should be to ensure adequate coverage of the issues. Governments in the ESA region and, in

turn, TTIs need deliberate efforts to harmonise policies and guidelines, and to offer specific guidelines for teacher educators to implement the CSE curriculum (UNESCO, 2015).

3.3 Views of teachers on the integration of CSE in Mathematics

The third objective of the study sought to assess the views of teachers on the integration of CSE in Mathematics. The views of teachers towards integrating Comprehensive Sexuality Education in Mathematics were assessed by asking respondents what they thought about the integration of CSE and its necessity in Mathematics, the attitude of the participants towards the CSE policy and teachers’ willingness to integrate all comprehensive sexuality education topics in mathematics.

Table 3.3.1; Teachers and HODs’ responses on the necessity of integrating CSE in Mathematics.

Source: Field Data, 2018

Table 4.5.1 indicates that 39 (86.7%) of the stated respondents agreed that it was necessary to integrate CSE in Mathematics while 6 (13.3%) were against the integration of CSE in mathematics.

Table 3.3.2 Guidance teachers’ responses on the necessity of integrating CSE in Mathematics.

Items	Frequency	Percentage
Agree	9	90
Disagree	1	10
Total	10	100

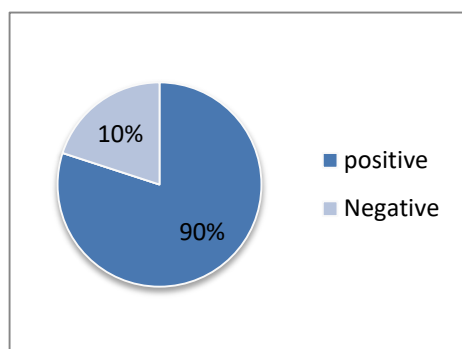
Source: Field Data; 2018

Table 4.5.1 illustrates that 9 (90%) of the stated respondents agreed that it was necessary to integrate CSE in Mathematics while only 1(10%) was against the integration of CSE in mathematics.

It was established from the findings of the study that the majority of respondents representing 90% were in support of the CSE policy. The study further revealed that 86.7% of the sampled teachers of Mathematics and HODs agreed that it was necessary to integrate CSE in Mathematics. These findings clearly show that the majority of respondents had a positive perception towards the integration of CSE in Mathematics. Despite the positive perception from a good number of respondents, it was established that some key issues such as pregnancy prevention were not integrated in Mathematics which may imply that teachers' perceptions were not positive on the integration of certain CSE topics.

These findings are similar to the findings of Kasonde (2013) that general knowledge of key sexuality issues was high among respondents even though some had incorrect attitude and their perception of sexuality education was in some cases not positive with regards to some key sexuality issues. The integration of CSE in Mathematics is viewed as significant because secondary schools are where most learners have reached in the adolescent stage, and it is important for teachers to understand that they have a responsibility to make a difference in the lives of students and thus contribute to society.

Figure 3.3.1 The attitude of the participants towards the CSE policy



Source: Field Data, 2018

Figure 4.5.1 shows that 90% representing 54 of the total number participants had a positive attitude towards the Ministry of General Educations' policy on the integration of CSE in all subjects while 10% representing 6 had a negative attitude towards the policy. This clearly shows that the majority of the respondents were in support of the policy which is one of the indicators of the positive perception of most participants towards CSE integration in Mathematics.

The study findings indicated that 90% representing 54 of the total number participants had a positive attitude towards the Ministry of General Educations' policy on the integration of CSE in all subjects while 10% representing 6 had a negative attitude towards the policy. This clearly shows that the majority of the respondents were in support of the policy which is one of the indicators of the positive perception of most participants towards CSE integration in Mathematics. This is encouraging because with such a positive attitude towards comprehensive sexuality education can easily be integrated into various lessons.

According to Noonan (2006), in many societies attitudes and laws stifle public discussion of sexuality and sexual behaviour – for example in relation to contraception, abortion, and sexual diversity. Noonan reported that, more often than not, men's access to power is left unquestioned while girls, women and sexual minorities miss out. The international encyclopaedia of sexuality reported that, in Botswana, patriarchal sex/gender systems relegate males to positions of power and women to subordinate positions within the context of cultural beliefs and practices. This could contribute why women were not as willing as men to teach sexuality education. Additionally, according to international encyclopaedia of sexuality, most people in Botswana do not feel very comfortable talking about their own sexuality, including autoeroticism.

These findings are similar to that of a study on students with disabilities in KwaZulu-Natal, South Africa, which found out that teachers had positive attitudes towards sexuality education and confidence in their abilities, but lacked relevant materials and training (Chirawu et al., 2014). They were more likely to discuss soft topics such as relationships and hygiene than sexual behaviour and practice. Teachers also had an approach to CSE that emphasized risk reduction, and expressed fears about encouraging students to engage in sexual activity.

Many teachers indicated they should be at the forefront in teaching sexuality education. This is encouraging because with such a positive attitude towards sexuality education, it is easy to implement in secondary schools in Gaborone. In most countries, children between the ages of five and thirteen spend time in schools influencing their attitudes and future behaviours (UNESCO). Thus, schools provide a practical means of reaching large numbers of young people from diverse backgrounds in ways that are replicable and sustainable.

A similar study by Bwalya (2012) indicated that sexuality education was viewed as every teacher's responsibility. It was therefore, important for teachers to uphold the highest standard of morality so that even as they talk about issues of sex to pupils, they would be taken seriously. The study further added that there was no need to let female teachers teach the girls and male teachers teach the boys as what mattered were the skills, the knowledge and interest in the delivery of information just like in the other subjects. Similar remarks were made by officials at the Ministry of Education headquarters in Lusaka, who said that the subject could be taught by every teacher regardless of the sex of the class one was handling. Gender was not supposed to be a barrier in teaching young people on issues of sexuality.

Table 3.3.2 Teachers' willingness to integrate all comprehensive sexuality education topics in mathematics

Items	Freq	Percent
Very Willing	25	50
Just Willing	5	10
Not Willing	20	40

Source: Field Data, 2018

Table 4.5.2 indicates that 25 (50%) of the sampled teachers of Mathematics were in support and very willing to integrate all CSE topics in Mathematics, 5 (10%) of the stated respondents were just willing to integrate all CSE topics and 20 (40%) were not willing to integrate all CSE topics in their lessons. This simply shows that the majority of teachers of Mathematics were willing to integrate all CSE topics in their lessons.

The findings of the study indicated that 25 (50%) of the sampled teachers of Mathematics were in support and very willing to integrate all CSE topics in Mathematics, 5 (10%) of the stated participants were just willing to integrate all CSE topics and 20 (40%) were not willing to integrate all CSE topics in their lessons. This simply shows that the majority of teachers of Mathematics were willing to integrate all CSE topics in their lessons. However, there were concerns by some respondents that they needed adequate training to be able to integrate comprehensive sexuality education effectively into their classes.

The study further found out that despite the willingness of the majority of teachers to integrate CSE in their classrooms, more males than females were not willing to integrate all comprehensive sexuality education in Mathematics lessons. Traditional and Christianity views were among the reasons given by some of the respondents who

mentioned that they were not willing to integrate comprehensive sexuality education in their classes. These findings are similar to the findings of Kasonde (2013) who found out that the relationship between religion and the teaching of sexuality education was strongly expressed by educators as many observed a tension that appears to exist between these two. He further found out that educators were uncomfortable because there are issues in comprehensive sexuality education that cannot be discussed openly. Religion also becomes a barrier because there are things that some churches do not allow us to talk about. Then the teaching of CSE at school may mean going against the principles of religion.

A study by UNESCO (2015) revealed that also religion and culture were cited as key factors which influence teacher willingness (or unwillingness) to talk about sensitive topics. This is a common theme throughout the region and may have as much to do with personal attitudes and values as with professional competence and attitudes. Studies confirm that teachers had limited knowledge, skills and confidence to deal with HIV& AIDS issues, especially because of the difficult question's students ask and perhaps because of traditional, personal or religious sensitivities (UNESCO, 2015)

Chaka (2017) also found out that religion is considered the causal view of sexuality education as a taboo which denied parents and teachers the opportunity to teach learners optimally about sexuality, contrary to white teachers who are often more open about sexuality matters with their children. This perception was common among many participants interviewed, yet through different views as some blamed tradition for making it hard for them to share sexual messages with the learners who they are teaching.

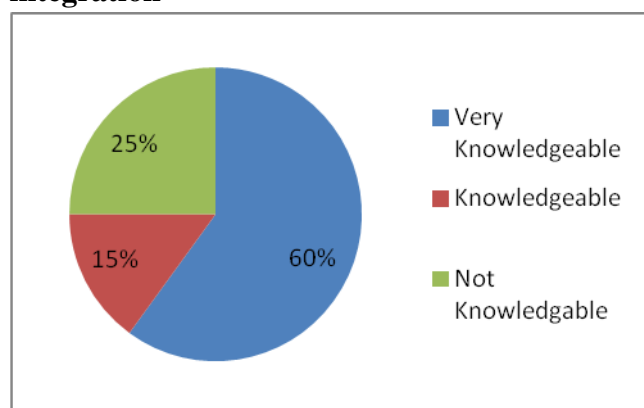
Christians have divergent views concerning school-based sexuality education. Some are in support of it being offered in schools while others

believe it is the responsibility of parents to teach their children at home. Some conservative Christians argue that school-based sexuality education ignores the reality of human sinfulness. It does not include the teaching of moral principles, which are very important in the lives of young people. Similarly, in 2010, Anderson argued that the problem why young people today indulge in sexual activities is not due to a lack of education, but to a lack of instructions on morality. They may have the intellectual education, but if they are not taught morals, they will still indulge in risky sexual behaviour. In his view, young people should be taught to refrain from premarital sex because it is immoral. They should know that chastity is the most effective means of preventing pregnancy and a multitude of sexual diseases. In addition, he believes that there is need for Christians to understand the basic assumptions behind having sexuality education in public schools. He claims that those who advocate for it make naturalistic assumptions about human sexuality. They regard young people as though they were animals on heat that could not adhere to the teachings given to them at home, church or even at school concerning sex and sexuality. The bible shows that human beings were created in the image of God. Hence, they have the capacity to exercise self-control. He indicated that the advocates of sexuality education are not realistic in their arguments when they view young people like animals that cannot exercise self-control.

According to Anderson (ibid.), most sexuality education programmes present data in a value neutral way. But in trying to be morally neutral, these programmes encourage immortality. It is true that young people need information on sex and sexuality, but it should be presented in a moral context. Christian parents should therefore, exercise authority and instruct their children about God's view of sex. The teaching should be based on abstinence, to flee fornication just like Joseph

did in the Old Testament (Genesis). It is wrong to make provisions for the flesh like the use of contraceptive measures that the advocates for sexuality education suggest. Instead young people should be taught to exercise self-control and also be concerned about the dangers of premarital sex. This could only be achieved by providing them with biblical principles and moral leadership in the area of sexuality.

Figure 3.3.2 Respondents' Knowledge of CSE integration



Source: Field Data, 2018

Figure 4.5.2 indicates that 60% of the sampled respondents were very knowledgeable of the integration of CSE in Mathematics, 15% were knowledgeable and 25% were not Knowledgeable of the CSE integration in Mathematics.

Table 3.3.3 Type of CSE training received by the respondents

Type of training	Freq	Percent
Tertiary Training	0	0
Workshops	20	33
CPD	19	32
None	21	35
TOTAL	60	100

Source: Field Data, 2018

Table 4.5.3 indicates that none of the respondents received tertiary, training 20 respondents representing 33% received their training through workshops, 19 representing 32% through CPD and 21 representing 35% claimed they had not received any training concerning CSE integration.

The findings of the study indicate that 60% of the sampled respondents were very knowledgeable of the integration of CSE in Mathematics, 15% were knowledgeable and 25% were not Knowledgeable of the CSE integration in Mathematics. The findings further revealed that 20 respondents received their training through workshops, 19 through CPD and 21 claimed they had not received any training concerning CSE integration. Furthermore, no respondent received tertiary training. Some respondents indicated that despite being trained on how to integrate CSE, the training was not adequate to fully prepare them deliver it to learners with minimal challenges. The sensitivity of the topics dealt with in sexual as education demand that educators be given adequate training in the subject in order to enable them to feel competent to teach all the topics. This view is supported by the fact that all of the educators who indicated that they received no training on sexuality, indicated that they are not competent to teach sexuality and are not comfortable to use some of the terminology.

To be effective CSE educators, teachers need to be equipped with certain knowledge, attitudes and skills (WHO & BZgA, 2017). For lots of educators, sexuality remains a sensitive topic. They don't feel comfortable with sexuality or do not know how to discuss topics openly (Van de Bongardt et al, 2013). There is evidence that the beliefs, attitudes, values and sense of self-efficacy educators hold, influence how they deliver CSE messages (Vanwesenbeeck et al., 2016). Improving curricula in line with international standards is clearly key, but the quality of CSE delivered to young people

depends ultimately upon teachers' knowledge, confidence and skill to deliver the subject. Teachers must be adequately trained in the subject matter and in participatory approaches.

Training of teachers on CSE began in 2015 in majority of countries and, in order for it to be successful; the region will need to learn lessons from the years of training teachers on LSE. A number of teachers interviewed indicated that for CSE training to be successful, it will need to address the sexuality of teachers themselves and help them clarify their own value before they can begin to deal with teaching learners on CSE (UNESCO, 2015).

According to UNESCO (2015), socio-economic inequalities have had a negative impact on educators' ability to implement the life skills programme in South African schools. Schools and institutions in poorer communities often lack the resources to provide adequate training for their teachers. In addition, these communities often have a more conservative method of educating, which is not compatible with the content and goals of the programme. According to the Department of Early Childhood Development in Victoria rather than a lone teacher taking sole responsibility, sexuality education is more likely to be successful if it is taken on by all staff at the school. Teachers play a central role in planning and delivering this programme.

4. CONCLUSION AND RECOMMENDATIONS

Based on the findings, the study concludes that, CSE is mostly integrated into eight (8) topics representing 26.7% of the thirty (30) senior secondary school Mathematics topics. The study revealed that about four representing 66.7% of the six (6) CSE topics covered by the CSE framework are integrated in Mathematics lessons. These topics include relationships; values, attitudes and skills;

sexual and reproductive health and culture, society and human rights.

On the other hand, the study revealed that teachers face some challenges when integrating CSE in Mathematics. These include; insufficient time, inadequate training, difficulties in integrating CSE in all Mathematics topics, lack of guidance within schools, inadequate materials, cultural factors and lack of policy guidance. The study established that the instructional time for Mathematics was insufficient to allow teachers integrate adequate CSE issues in the lessons. In the same vein, most teachers claimed that they were not adequately trained to integrate on how to integrate CSE in Mathematics.

Despite the challenges, the study also concludes that the integration of CSE in Mathematics provide teachers with some opportunities. Some of the opportunities mentioned included; relating Mathematics to real life, enhanced Mathematics learning, Improved communication with learners and provides learners with accurate information to help them make wise decisions concerning their sexual life.

The study further concludes that that the majority of teachers have a positive perception towards the integration of CSE in Mathematics. The study revealed that all the sampled senior secondary school teachers and heads of Mathematics departments were integrating Comprehensive Sexuality Education. However, key issues such as pregnancy prevention among others were not integrated in the subject for various reasons. The CSE topics integrated in Mathematics varied from one teacher to another depending on the Mathematics topics and grades. In the same vein, a good number of teachers were willing to integrate all CSE topics in mathematics if adequate training could be provided. This clearly shows that the majority of the respondents were in support of the policy and willing to integrate all CSE topics in

Mathematics which is one of the indicators of the positive perception of most participants towards CSE integration in Mathematics. The study also revealed that a good number of the sampled respondents were trained and knowledgeable of the integration of CSE in Mathematics.

For the integration of CSE in Mathematics to be a success, the study recommends the following:

- 4.1 The government may consider clearly specifying what CSE topics to be integrated in Mathematics at senior secondary school level, as some of the topics are already incorporated in subjects such as; Biology, Civic Education, Religious Education and Home Economics.
- 4.2 The government through the Ministry of general education may consider training the in-service teachers adequately concerning the integration of CSE into their classes. Training for CSE teachers is an important safeguard for the quality of teaching
- 4.3 School managements may consider providing teachers with support and guidance to effectively implement the policy.

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