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Teachers' perceptions of a sexuality education and HIV prevention project in rural farm schools: a cyclical longitudinal ethnography

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ABSTRACT

This study examined the effect of a long-term, community-based HIV prevention programme on teachers' knowledge, attitudes, and practices related to sexuality education in rural farm schools in Limpopo Province, South Africa. Employing a cyclical longitudinal ethnographic design initiated in 2010, the research engaged Life Orientation educators through annual workshops, interviews, and observations. The findings reveal significant improvements in educators' foundational knowledge of HIV and AIDS, a positive shift in attitudes towards the importance of sexuality education, and enhanced pedagogical skills for delivering sensitive content. Teachers reported increased confidence, adopting learner-centred teaching methods, and a greater ability to identify and support vulnerable students. The study highlights the efficacy of sustained, contextually relevant professional development over one-off training sessions. However, it also identifies limitations, including challenges with staff turnover and the need for systemic support to ensure the long-term sustainability of such programmes and interventions. The study concludes that effective sexuality education requires knowledgeable and skilled educators, as well as a supportive ecosystem that includes school leadership and community engagement.

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Introduction

Sexuality education is recognised worldwide as key to promoting adolescent well-being, preventing unintended pregnancies, and curbing the spread of sexually transmitted infections, including HIV (UNESCO 2025; WHO 2023). However, the success of any sexuality education curriculum is dependent on the educators responsible for its delivery. Their knowledge, confidence, and ability to navigate sensitive topics are crucial in determining whether education is a transformative or a procedural exercise (Keto, Tilahun, and Mamo 2020). Implementation remains inconsistent, despite clear policy intentions, particularly in contexts such as South Africa, where the Life Orientation curriculum¹ is in place. Many educators feel unprepared to address complex issues such as contraception, sexual orientation,

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consent, and gender-based violence, often due to cultural taboos, personal beliefs, or lack of adequate training (Adekola 2024; Mukoro 2023). This gap between policy and practice can lead to incomplete or moralistic teaching, undermining the goals of comprehensive sexuality education (Haberland and Rogow 2015).

Professional development is, therefore, not just beneficial but essential. It provides a crucial platform for educators to deepen their content knowledge, build pedagogical confidence, reflect on personal biases, and develop inclusive, learner-centred teaching strategies (Eisenberg et al. 2011). This study examined a long-term HIV prevention project offered as part of a community engagement initiative in rural South African farm schools, focusing on its impact on teachers' perceptions, knowledge and classroom practices over a decade.

Background

The importance of teacher knowledge in sexuality education

Sexuality education training is widely acknowledged as a catalyst for deepening teachers' knowledge in critical areas such as puberty, contraception, HIV prevention, and gender-based violence (Myat et al. 2024). Well-structured professional development programmes have consistently strengthened educators' content mastery and boosted their confidence (Santelli et al. 2019). However, the effectiveness of such training depends on factors such as duration, delivery method, and ongoing reinforcement (Matahela et al. 2025). Despite initial training, research from both international and South African contexts shows that gaps in factual understanding and misconceptions about HIV transmission and contraception persist among educators (Adekola and Mavhandu-Mudzusi 2023). Knowledge gained during one-off workshops tends to fade without reinforcement, highlighting the need for models and approaches that include follow-up mentoring, refresher sessions, and peer learning to sustain knowledge gains (Koch and Wehmeyer 2021; Schalet et al. 2014).

The impact of training on educators' attitudes and comfort

Beyond factual knowledge, sexuality education training is vital in shaping educators' attitudes and emotional readiness. Teachers' personal, cultural, and religious beliefs inevitably influence how they approach sensitive topics (Yillah et al. 2025). Many educators report discomfort or moral hesitation due to inadequate preparation and training, which can lead to avoidance or fear-based teaching methods (Le Mat et al. 2021). Evidence suggests that supportive training can shift these attitudes. Structured education and development programmes can encourage educators to reflect critically on their values, helping them separate personal beliefs from professional responsibilities and fostering more inclusive and trusting classroom environments (Singh, Both, and Philpott 2021). When educators are open and confident, learners feel safer asking questions and engaging meaningfully (O'Brien, Hendriks, and Burns 2021).

The impact on teaching practice

Effective sexuality education demands pedagogical sensitivity and adaptability (Leung et al. 2019). Educated and well-trained teachers are more likely to adopt participatory strategies, such as role-playing and scenario-based discussions (Venketsamy and Kinear 2020). However, translating training into practice is challenging. Fear of community backlash or lack of institutional support can cause educators to revert to didactic teaching methods (Costello et al. 2022). In South Africa, NGO-led initiatives have effectively promoted learner-centred teaching by incorporating values clarification and reflective activities (Macleod and du Plessis 2024). However, improved practice does not result from training alone; it requires a supportive professional ecosystem that includes mentoring, peer collaboration, and leadership that values sexuality education as an essential part of learning (Mwesigwa and Nakato 2025).

Sexuality education in the South African context

South Africa provides a complex landscape for implementing sexuality education. National efforts, such as the Department of Basic Education's scripted lesson plans,² aimed to standardise delivery and support for teachers. While these plans have increased confidence for some, discomfort around topics such as LGBTQ+ rights has persisted, indicating that standardised content alone cannot reduce stigma (Chikoko and Mhishi 2021). NGO-led programmes have often filled this gap by focusing on values clarification and participatory learning, leading to transformative experiences for teachers (Naidoo and Muza 2024). However, these gains are often fragile and difficult to bring to scale without systemic support. Furthermore, educators in township and rural schools face additional complexities, including poverty, gender-based violence, and conservative social norms, which even the best training cannot overcome without adequate institutional and community engagement (Smith and Harrison 2013).

Problem statement

Despite there being a national curriculum for sexuality education in South Africa, a significant gap persists between policy and effective classroom implementation, particularly in under-resourced rural and farm schools (Adekola and Mavhandu-Mudzusi 2022). Educators frequently lack the specialised knowledge, pedagogical skills, and confidence to deliver comprehensive sexuality education effectively. One-off training workshops have proven insufficient in producing lasting change, as knowledge fades and teachers struggle to apply new methods without ongoing support. This is compounded by personal and cultural discomfort with sensitive topics, lack of institutional support, and challenging socio-economic contexts. Consequently, sexuality education is often taught in a didactic, moralistic manner or avoided altogether, failing to meet the needs of learners. Research is needed on the long-term impact of sustained, context-sensitive training models that can empower educators to overcome these barriers.

Research goals

The primary purpose of this study was to explore and understand the long-term impact of a cyclical, community-based HIV prevention programme on the perceptions, knowledge, attitudes, and teaching practices of Life Orientation educators in rural farm schools in Limpopo Province, South Africa.

Research questions

The following research questions guided this study:

- How did the sustained HIV prevention programme affect educators' knowledge of HIV and key sexuality education topics?
- In what ways did the programme influence educators' attitudes towards and valuation of their role in teaching sexuality education?
- How did the programme impact educators' classroom teaching strategies and pedagogical skills?
- To what extent did participation in the programme enhance educators' ability to identify and support especially vulnerable learners?

Methodology

Research design

This study employed a qualitative, cyclical, longitudinal ethnographic design. Cyclical longitudinal ethnography is a qualitative research design in which a researcher visits the research site frequently for short durations at different seasons annually for several years. In this case, the researcher conducted multiple school visits throughout the year, including at the start of the academic year, during the first term, mid-year, and towards the end of the year, as well as during and after the examination period, subject to the researcher's university workload (Mavhandu-Mudzusi 2023).

During each visit, the researcher and community members worked together to address a specific societal challenge. The design enabled the researcher to understand the context, including social and cultural practices, as well as the impact of the interventions (Mavhandu-Mudzusi 2023). This study was initiated in 2010 as a community engagement project focusing on HIV prevention among learners in Limpopo Province. The primary purpose was to equip educators with contextually relevant strategies to teach sexuality education to learners. Since 2010, the researcher has visited the area annually, interacting with educators, learners and community members. The only period during which the area was not visited was from 2020 to 2021, due to COVID-19 restrictions. Work was resumed in 2022.

Sampling and recruitment

The study was conducted in rural farm schools located in the Soutpansberg Circuit, a geographically remote area of South Africa characterised by widespread poverty,

unemployment, and limited public services. The region lies close to international borders (Zimbabwe to the North, Botswana to the West, and Mozambique to the East) and major trade routes, resulting in high levels of cross-border movement linked to migration, transactional sex, and trafficking.

Despite this mobility, local communities derive few economic benefits, a situation worsened by the closure of nearby mines, which has entrenched economic hardship. Learners attend schools in contexts marked by fragile livelihoods, inadequate healthcare infrastructure, and limited access to HIV prevention, testing, and treatment services, all of which contribute to ongoing vulnerability among learners.

Multiple stakeholders were contacted, with a primary focus on empowering Life Orientation educators. The inclusion criteria for educators were teaching Life Orientation in the Soutpansberg North Circuit, attending the HIV prevention workshop conducted by members of the University of South Africa Community Engagement Project (CA45: Prevention of HIV among Learners in Limpopo Province), and being permanently appointed to the position. A total of 15 educators served as key participants and informants. Heads of schools, circuit managers, and learners were also involved in verifying the findings during school visits.

Data generation

Ethnographic interviews and observations were used to generate data, with participants providing their responses in writing. An ethnographic interview is a series of conversations to understand the social environment, interactions, and construction of reality (Spradley 1979). Although the programme began with preset questions, these questions ultimately served as a guide, as the data generation process was iterative and self-corrective (Eder and Corsaro 1999), and the initial questions changed during interaction with participants following their responses. The participants' responses also guided the formulation of the questions. Some questions were derived from observing the environment (Schensul and LeCompte 2012).

The participants responded to the questions individually in writing without adding their names. Later, all responses were collected, combined, and distributed to participants, who read them before participating in a group discussion. Responses and discussions highlighted the need to convene all educators from the schools. This would allow them to learn from the different approaches being used in sexuality education and HIV prevention classes, while observing the environment and interacting with learners.

Data were also collected through pre- and post-tests of teachers' knowledge, attitudes, and practices regarding sexuality education and HIV prevention, which each participant completed, as well as through informal discussions, brainstorming sessions, role-plays, scenarios, presentations, and reflections at the end of each day. During all shared activities, video recordings were made, with key points written on flip charts by a research mentee who served as the co-facilitator.

Data analysis

Data analysis was conducted iteratively and collaboratively, drawing on ethnographic content analysis (Brink, Van der Walt, and Van Rensburg 2017). The researcher worked in

dialogue with the research mentee, who participated in successive rounds of coding, interpretation, and validation to enhance analytic rigour and reduce individual interpretive bias.

Analysis began with a close reading of the matched pre-test and post-test responses for each annual workshop, allowing changes in educators' foundational knowledge, attitudes, and reported practices to be identified at the cohort levels. Alongside these test data, the researcher repeatedly studied the written materials, flipchart records of group discussions, daily workshop reflections, fieldnotes from classroom and community observations, and the accompanying photographs and video clips to identify recurrent meanings and contextual nuances that the test instruments alone could not capture.

The different data sources were then brought together along two intersecting axes. Synchronically, within each annual workshop cycle, pre-test and post-test results, interview transcripts, observational fieldnotes, and audiovisual materials were triangulated to produce a layered, situated account of teachers' perceptions and practices at that particular point in time. This within-wave triangulation made it possible to corroborate, qualify, or challenge patterns suggested by any single source, for example, by reading shifts between pre-test and post-test answers against what teachers articulated in interviews and demonstrated in classroom observations.

Diachronically, the analysis tracked these synchronic accounts across successive waves of fieldwork from 2010 onwards, comparing themes, language, and pedagogical practices over time to surface trajectories of change, regression, and stagnation in educators' engagement with sexuality and HIV education. Through this iterative movement between within-wave and across-wave analysis, the clustered meanings were progressively refined into themes and sub-themes that reflected both the texture of each cycle and the longer arc of transformation in the participating rural farm schools.

Ethical considerations

Di Felicianantonio (2024) has emphasised that ethical practice in longitudinal studies necessitates the establishment of strong relationships between researchers and participants, grounded in an ethics of care focused on social justice.

Ethical approval for the study was received from the University of South Africa Research Ethics Committee (Reference: 90187598_CRECHS_2024) and throughout the study care was taken to observe and respect local cultural practices. These included provision for a gate opener prior to meeting the local chief to seek permission to interact with local community members, and to ensure they were not surprised to learn that members of a university were conducting a study in the community. This practice is considered a sign of respect when engaging with rural traditional communities.

Out of care and respect, work not only focused on the educators and learners, but also on children's and young people's guardians. For example, when I visited the schools and observed that learners' clothes were in poor shape due to poverty, I collected school uniforms and other clothes from colleagues, church members, my relatives, and others, and distributed them to the schools, rather than just observing the situation and documenting it without finding a solution to the problem. I applied the same principle in the case of teachers and educators; each time, I sought to develop a strategy to address the identified problem.

When reporting the findings, I used pseudonyms to protect the participants' identities. For learners, the photos were taken so that the faces were not visible. After handling emotional topics, educators were given a debriefing. Some of the educators were directly affected by HIV, and needed counselling and support, which I initially offered, and referred them to relevant services when appropriate.

Ultimately, ethnographic researchers are not journalists who should only observe and report what they are witnessing; rather, they should provide assistance where possible and/or link informants and interlocutors to sources of support. Di Felicianantonio (2024) emphasises the significance of support in longitudinal ethnographic studies, where the researcher-participant relationship develops from initial interviews to more in-depth personal discussions.

Trustworthiness

To ensure rigour and quality in this qualitative study, the four foundational elements of trustworthiness, credibility, transferability, dependability, and confirmability (Lincoln and Guba's 1985) were systematically addressed. Credibility was established through prolonged engagement, as the cyclical longitudinal design enabled the researcher to spend over a decade in the field, fostering trust and a nuanced understanding of the rural school context. Multiple data sources and methods, including ethnographic interviews, observations, pre- and post-tests, and group discussions with diverse stakeholders, facilitated triangulation. Member checking further enhanced credibility, with participants reviewing and verifying synthesised responses to ensure accurate representation of their experiences. Transferability was supported by providing a rich and detailed description of the research setting, participants, intervention, and processes, allowing readers to assess the relevance of the findings to similar contexts. Dependability was ensured by creating a comprehensive audit trail, which documented each stage of the research process, from data generation to content analysis, thereby enabling independent scrutiny and replication. Finally, confirmability was achieved by grounding the findings in the data, maintaining a transparent audit trail, and practising reflexivity; the researcher acknowledged their dual role as both observer and participant and actively reflected on their influence throughout the study. Together, these actions sought to minimise bias and strengthen the scientific integrity of the study.

Findings

Biographical details of the participants

Fifteen educators participated in the studies. Biographical details are presented in [Table 1](#).

Themes and sub-themes

The analysis of data revealed four major themes, namely: (1) Enhanced Knowledge of HIV and Sexuality Education; (2) Positive Shift in Attitudes and Values; (3) Improved Pedagogical Practice; and (4) Strengthened Capacity to Support Vulnerable Learners.

Table 1. Participants details.

Participant	Pseudonym	Age	Sex	Number of years teaching	Number of years teaching Life Orientation	Current position at school
P1	Aluwani	43	F	8	4	Educator
P2	Fhatu	53	F	20	12	Educator
P3	Humbe	55	F	20	8	Principal
P4	Livhuwani	35	F	5	3	Educator
P5	Maanda	40	F	16	10	Educator
P6	Masana	58	M	34	2	Principal
P7	Mashudu	55	F	25	4	Educator
P8	Mbavhi	31	F	4	4	Educator
P9	Mpho	46	F	12	4	Educator
P10	Muelelwa	40	F	12	2	Educator
P11	Mufunwa	58	M	35	5	Educator
P12	Ndivha	39	M	7	7	Educator
P13	Rembu	57	F	30	3	Principal
P14	Rendani	40	F	15	10	Educator
P15	Vhudi	54	M	30	6	Educator

Table 2. Themes identified.

#	Theme	#	Sub-theme
1	Enhanced Knowledge of HIV and AIDS and Sexuality Education	1.1	Conceptual clarity
		1.2	Specific HIV prevention topic mastery
2	Positive Shifts in Attitudes and Values	2.1	Subject importance (teacher)
		2.2	Institutional prioritisation
3	Improved Pedagogical Practice	3.1	Increased confidence in teaching sensitive topics
		3.2	Adoption of learner-centred approaches
		3.3	Engagement techniques
4	Support for Vulnerable Learners	4.1	Improved ability to identify at-risk learners
		4.2	Enhanced support and counselling skills

These themes and corresponding sub-themes are presented in [Table 2](#). Direct quotes from participants substantiate the findings

Enhanced knowledge of HIV and sexuality education

A primary outcome of the sustained intervention was a significant enhancement of educators' knowledge of HIV and sexuality education. This theme encompasses two key areas: gaining conceptual clarity by correcting long-held misconceptions and mastering specific HIV prevention-related topics. Initially, many educators believed they had a firm grasp of the subject, but training and support revealed critical knowledge gaps.

Conceptual clarity

Hlengiwe, for instance, admitted her misunderstandings of HIV and the impact it had on her teaching:

I thought I knew a lot about HIV. However, this programme has made me realise that I know very little. I even corrected a few learners not knowing I was wrong. (Mashudu)

This sentiment was echoed by Muelelwa, who had a flawed understanding of mother-to-child transmission, a critical area for providing support to learners. The education and training provided corrected this and empowered her to give accurate advice:

I did not understand how a child born to an HIV-positive woman could become negative. After the lesson on mother-to-child transmission, and how it can be prevented, I can confidently support learners who are HIV positive and pregnant to go to the hospital early.

Specific HIV prevention topic mastery

Beyond correcting basic errors, the programme led to specific mastery of HIV prevention. Educators gained a more nuanced understanding of complex issues. For example, Mufunwa learned about serodiscordant couples, a concept that challenged simplistic assumptions about HIV status within relationships:

I have learnt that people can be in a relationship together, while one is negative and the other is positive. Therefore, we should not conclude that they are both negative. I have learned about a serodiscordant couple.

Similarly, Mpho's understanding evolved from viewing specific individuals as immune 'carriers' of HIV to grasping the concept of slow and fast progressors. This shift from myth to scientific understanding was a direct consequence of the training.

I have learned that some people are slow progressors, while others are fast progressors. I used to think that they were carriers of HIV.

The programme also provided practical, hands-on knowledge of prevention methods. Livhuwani's experience with the female condom highlights the empowering effect of this knowledge:

I had never seen a female condom before. Coming to this workshop has helped me to know the female condom and how to use it. I think this will empower us females, including learners, to have control of our bodies.

Finally, Ndivha's comment about male circumcision demonstrates the ability to convey nuanced prevention messages, moving beyond absolute statements to explain relative risk reduction.

I have learned that being circumcised reduces the risk of HIV infection, but it does not eliminate or fully protect a person from being infected. This will help me to tell those men who said that because they are circumcised, they cannot get infected with HIV.

Positive shift in attitudes and values

Enhanced knowledge contributed to a profound shift in educators' attitudes towards sexuality education and the Life Orientation subject. This transformation manifested itself at both the personal and institutional levels. The first sub-theme, subject importance, reflected a newfound appreciation for the subject.

Subject importance (Teacher perspective)

Rembu's reflection below offers a powerful example of this change, moving from dismissing the subject to recognising its critical value:

I did not value Life Orientation subjects at all. Since I attended your workshop, I have realised the value of life orientation, especially in the context of sexuality education.

A move towards institutional prioritisation complemented this personal shift in value.

Institutional prioritisation

The account from Masana, a school principal, is particularly telling. It illustrates a systemic change in how Life Orientation subject was perceived and resourced within the school, moving from it a peripheral activity to a core responsibility deserving of the best educators:

As a school principal, I always allocated the worst-performing educator to teach Life Orientation. Sometimes, as I am currently doing, I take the subject [myself] because I know that whether I attend the class or not, it does not matter. However, I will now take this seriously and allocate the best teachers.

Improved pedagogical practice

The programme had a profound impact on educators' knowledge and contributed to changes in their teaching methods. This theme was characterised by three interrelated sub-themes: increased confidence, adopting new teaching methods, and using specific engagement techniques.

Increased confidence in teaching sensitive topics

A significant barrier to effective sexuality education is teacher discomfort. The training directly addressed this, increasing confidence in teaching sensitive topics. Humbe articulated this personal growth as follows:

I used to have a challenge on how to teach Life Orientation, especially when it comes to the issue of sex and sexuality. However, since attending the training, I have become more confident and can express myself easily.

This newfound confidence enabled the adoption of learner-centred approaches.

Adoption of learner-centred approaches

Instead of relying on didactic, one-way instruction, educators began to facilitate learning. Rendani described how this new approach empowered learners to take an active role in generating knowledge:

Because you taught us to employ teaching approaches such as brainstorming, core groups, and role-plays, learners are the ones who generate most of the information. For me, it's just to wrap up and clarify what isn't so clear.

Engagement techniques

Finally, educators incorporated specific engagement techniques into their practice, such as icebreaker exercises, which Vhudi noted positively affected learner interaction and participation across all subjects, fostering a more dynamic and open classroom environment.

I now incorporate icebreakers into my teaching. It keeps all learners engaged and encourages them to interact freely.

Strengthened capacity to support vulnerable learners

Perhaps the most profound impact of the programme was the development of educators' ability to identify and support vulnerable learners, extending their role beyond academic instruction to pastoral care. This theme had two sub-themes as detailed below.

Improved ability to identify At-risk learners

Mbavhi described how participation in the programme improved the ability to identify learners who might be at heightened risk, such as those who with experience of sexual abuse, abandonment, or other challenges which need urgent intervention or referral to relevant services.

The course has helped me to understand vulnerable learners. I can identify them and assist them. (Mbavhi)

Fhatu provided an example of how play-based methods with younger children could become a powerful tool for uncovering hidden struggles linked to abuse and poverty:

Your suggestion of playing house, Masekitlane, and giving them [learners] different roles has assisted me in identifying abused learners and those living in severe poverty. I later pick up from what they are saying or portraying during the play of house or Masekitlane and explore further.

Enhanced support and counselling skills

The improved ability to identify vulnerability was coupled with the development of support and counselling skills. Aluwani's story of identifying a child exhibiting behavioural changes and then creating a safe space for disclosure of sexual abuse offers powerful testament to this.

I could see a child behaving slightly differently. Last month, I observed a child who suddenly became very quiet and reserved. I called her to my office for support. The child ended up disclosing that her father was sexually abusing her

The training therefore provided the skills not just to notice a problem, but to intervene appropriately. This proactive support was further institutionalised, as described by Maanda, who successfully negotiated with the school principal to establish a formal counselling office and referral system:

Following the previous training, I negotiated with the principal to establish a counselling office. We also refer those children to a social worker for further counselling and assistance with food parcels.

This demonstrates a sustainable, systemic outcome of the training, embedding a culture of care and support within the school structure.

Discussion

Findings from this study affirm the impact of sustained, context-sensitive professional development on educators delivering sexuality education in rural South African schools. The observed improvements in knowledge, attitudes, and pedagogical skills align with literature that emphasises the need for training beyond one-off workshops. These positive outcomes stand in contrast to the often-limited impact of more conventional training approaches. As Chavula et al. (2022) note, not all training is created equal; while short-term workshops can spark awareness, their impact tends to fade without structured, ongoing engagement. Many training programmes follow a one-size-fits-all model, failing to account for the diversity of educator experiences and classroom realities. In a multicultural and socio-economically diverse country like South Africa, this lack of contextual responsiveness weakens the relevance and effectiveness of training (Le Mat et al. 2021). The success of the current study's model lies in its longitudinal and ethnographic nature, which allowed for the building of trust, iterative learning, and adaptation to the local context.

One of the most striking insights from the broader literature, which this study's findings reinforce, is the fragility of training outcomes without systemic support (O'Brien, Hendriks, and Burns 2021). The shift in attitude of the school principal in this study, who committed to allocating the best teachers to future Life Orientation classes, is a critical step towards creating this kind of supportive ecosystem. This addresses a key barrier where structural constraints, such as teacher workload and inconsistent implementation, erode the impact of training over time (Millanzi, Osaki, and Kibusi 2022). Without sustained mentorship and school-level leadership, even the most transformative workshops risk fading into the past. This study demonstrates that training embedded within a community engagement framework that values and supports educators can lead to institutional change, such as changes in staffing and teaching allocations, and the establishment of a counselling office.

The study's qualitative approach captured the subtler, more human dimensions of change often overlooked by narrow quantitative evaluations that focus primarily on pre- and post-tests (Maasoumi et al. 2024). The findings illustrate how educators shifted their language, reframed classroom dialogue, and navigated their professional responsibilities with newfound confidence and empathy. These transitions in educators' behaviour highlight the need to address educator identity and positionality, and the emotional and ethical tensions involved in reconciling professional duties with personal values (Shibuya et al. 2023). The practical aspects of the training were not limited to content delivery; it extended to an increased ability to identify and support vulnerable learners, empowering teachers to fulfil a pastoral care role. This is critical in under-resourced communities where social services are limited.

What emerges, then, is a call for more than just better training. The published literature urges us to think in layers: to view educator preparation as a process embedded within school culture, shaped by social norms, and sustained through policy and community partnership (UNESCO 2018; Leung et al. 2019; O'Brien, Hendriks, and Burns 2021). As this study shows, in order to be effective. Sexuality education training must be ongoing, context-aware, and reflective, rather than a one-off, content-heavy intervention. To move the field forward, training must be institutionalised as part of ongoing professional development, supported by mentoring and peer networks (Keogh et al. 2021).

Additionally, communities, parents, and traditional authorities must be meaningfully involved as partners in the dialogue (Mbizvo et al. 2023). Finally, this study addresses the need for more qualitative, context-sensitive research that captures the lived realities of educators navigating sexuality education in diverse and sometimes hostile environments (Macleod and du Plessis 2024), offering a model for successfully implementing and evaluating such work in the future.

Possible next steps

Findings from this study open up a number of conceptual and practical conversations rather than dictate one particular course of action. Taken together, they suggest that sexuality education in rural farm school settings is unlikely to be advanced by isolated training events or by interventions that treat teachers as the passive recipients of new content. What appears to matter, instead, is the slower and more relational work of cultivating reflective practitioners within school cultures and communities who can engage with and hold the complexity of sexuality, HIV, and adolescent vulnerability with care.

One implication concerns how teacher learning is conceptualised. The data suggest there is value in approaches that foreground values clarification, critical self-reflection, and participatory pedagogies alongside, rather than in place of, accurate content knowledge. Future programme design and research might usefully ask what kinds of professional learning environments are most successful in inviting educators into this more reflective stance, and how such learning can be sustained when teachers return to under-resourced classrooms. Related to this is the question of school-level conditions: study findings point to school leadership, time allocation, and a culture of open dialogue as enabling or constraining factors, warranting closer empirical attention in their own right.

A second implication concerns the temporal architecture of professional development. The cyclical, longitudinal design of this project gave glimpses into how teachers' confidence and pedagogical repertoires shifted over years rather than days, raising questions about whether one-off workshop models can ever do justice to the relational and ethical demands of sexuality education. Mentoring, peer learning networks, and recurring opportunities for reflection emerged from the findings as warranting further investigation, particularly regarding how they interacted with staff turnover and continuity of practice in rural schools.

A third set of implications concerns the broader ecology in which sexuality education sits. In this study, teachers' accounts repeatedly described parents, community leaders, and traditional authorities as significant interlocutors whose participation shaped what was sayable, teachable, and acceptable in the classroom. Further work, both scholarly and programmatic, could explore how genuinely dialogic partnerships with these actors can be built and sustained, and how cultural resistance can be engaged with rather than circumvented.

Finally, the longitudinal nature of the study's engagement invites further qualitative and ethnographic research that can hold space for educators' lived experiences over time, and for the intersections of personal values, institutional culture, teacher education and training, and classroom practice. Sustained inquiry of this kind seems better suited than

short-cycle evaluation to illuminate how change unfolds or stalls in settings shaped by structural inequality and shifting epidemic landscapes.

Limitations

As a cyclical longitudinal ethnography spanning more than a decade, the study relied heavily on the lead researcher's sustained presence and interpretive judgement, which carries well-recognised risks of subjectivity in coding and theme development; collaborative analysis, external coding verification, and triangulation across pre-test and post-test responses. Interviews, fieldnotes, flipchart records, and audio-visual material were used to mitigate, though not entirely eliminate, these risks. Educator turnover, retirements, and transfers between teaching circuits meant that not all participants who completed early instruments were available in later cycles, constraining inferences about change over time. Self-reported shifts in attitudes and practice remained susceptible to social desirability bias in workshop settings, only partially offset by observational corroboration. Although the circuit manager remained constant throughout the study, the frequent turnover of school principals meant that access conditions and the rapport on which ethnographic data quality depends varied across sites. The contextual specificity that gives the study its richness, the agricultural-labour economy of farm schooling, the local language ecology, the particular configuration of community and traditional authorities, and the long-standing relationships built through the project, also bound the transferability of its claims. Therefore, the findings are best read analytically and may only be extended to contexts that are strictly similar across rural South Africa. These limitations do not undermine the study's contribution but locate it as a contextually grounded, analytically generalisable account of teacher change within a specific rural ecology.

Conclusions

Overall, this study demonstrates that the long-term impact of a cyclical, community-based HIV prevention programme on Life Orientation educators in rural farm schools is best understood as a gradual process of professional transformation shaped by time, relationships, and contextual responsiveness rather than by individual, isolated training events. Sustained engagement enabled educators to deepen their knowledge of HIV and sexuality education incrementally, reposition sexuality education as a legitimate and meaningful professional responsibility, and adopt more learner-centred, participatory pedagogies. The programme also strengthened educators' responsiveness to learner vulnerability and their willingness to provide support and referral, while simultaneously revealing the emotional and ethical burdens carried by teachers who often operate without adequate psychosocial support themselves.

At the same time, the findings point to the limits of teacher-focused interventions in contexts where broader school and community conditions are unstable. Under-resourced classrooms, curricular pressure, school principal turnover, staff attrition, and community ambivalence ongoingly shaped what educators could realistically sustain across programme cycles. The study therefore suggests that durable change in sexuality education practice

depends not only on curriculum content or training intensity, but also on the presence of supportive institutional cultures, stable leadership, and community engagement.

A cyclical longitudinal ethnographic design was central to illuminating these temporal and ecological dynamics, highlighting the importance of sustained inquiry in understanding how professional change unfolds over time. Ultimately, the findings support the need for teacher development models that prioritise mentoring, peer learning, reflective dialogue, and contextual adaptation over episodic workshop-based approaches. They further point to the value of continued longitudinal and comparative qualitative research across rural sub-Saharan African contexts to better understand how educators navigate the intersections of institutional culture, personal values, and shifting educational and public health realities.

Notes

1. Life Orientation is a compulsory South African school subject that focuses on learners' personal, social, physical, career, and health development, including sexuality education and well-being.
2. Scripted lesson plans are detailed, standardised teaching guides in the Life Orientation subject area that provide teachers with structured content, activities, and step-by-step instructional guidance for classroom delivery.

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Data availability statement

The data underpinning this study are not available for sharing, as the conditions of ethical approval and the consent agreements with participants do not permit the release of identifiable or potentially identifiable material beyond the research team. However, verbatim excerpts from the participants are included in the manuscript.

AI Declaration

The author declares that no generative AI or AI-assisted technologies were used in the preparation of this manuscript. However, Grammarly was used for language editing and refinement.

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