Chapter 3: Prospects and Challenges of Supervising African Indigenous Knowledge Systems Research in Higher Education: Experiences from the DSTI - NRF Centre of Excellence in Indigenous Knowledge Systems (CIKS) UKZN

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Abstract

The paper was based on a predominantly qualitative study to discuss comparative prospects and challenges experienced by AIKS supervisors and students from the partner institutions of the Centre of Excellence in Indigenous Knowledge Systems (CIKS), with its hub at the University of KwaZulu-Natal, South Africa. The identified supervision challenges included: inadequate strategic programmes and platforms in higher education institutions to capacitate AIKS supervisors, students and IK holders to positively impact on local communities and the academy; lack of AIKS-based pedagogies and methodologies in working with marginal cultures, despite institutional vision and mission statements; and AIKS supervisors had a limited holistic understanding of student socio-cultural needs and its impact on the supervision process. However, the following opportunities were also identified: the place-based, holistic and multi-transdisciplinary nature of AIKS attracted a growing number of researchers and postgraduates from within and outside South Africa, helping to promote the significance of indigenous knowledge systems in the global knowledge economy.

Addressing these challenges and leveraging the opportunities requires

a fundamental shift in mindset, moving away from Eurocentric epistemologies and embracing a more inclusive and equitable approach to knowledge production. By fostering collaboration, promoting ethical research practices, and investing in capacity building, higher education can create an environment that supports and celebrates AIKS, ensuring that these valuable and inclusive knowledge systems are preserved, shared, and used to address the challenges facing local communities and the world at large. The opportunities include the fact that promoting AIKS research can contribute to transformative and decolonized curriculum development, environmental sustainability, and inclusive community development.

Keywords: AIKS Higher Degree by Research Students, Indigenous, Professional Development in AIKS Supervision, Quality IKS Supervision, Indigenous knowledge, IKS, Centre of Excellence in Indigenous Knowledge Systems, University of KwaZulu-Natal, South Africa

Introduction

There is an increasing realisation on the importance of African Indigenous Knowledge Systems (AIKS) in the social transformation and decolonisation process of Africa. However, the development AIKS is limited by lack of a critical mass of AIKS human capital, especially at postgraduate levels, conversant with its worldviews, ways of knowing, value systems and research methodologies, as a knowledge domain (Anderson *et al.* 2022). The historical marginalisation of indigenous cultures, knowledge systems, and languages has led to dominance of western knowledge including research methodologies and lack of this AIKS human capital. A large proportion of African people, especially women and children in marginalized communities, still depend on AIKS for sustainable livelihood.

Although it is argued that there is no standard model of postgraduate supervision to be applied in and across all disciplines and postgraduate research situations, because it is an evolving process that meets the needs of different students, programmes and administrative structures, the inclusive, multi-trans-disciplinary, cultural-ecological specific nature of AIKS requires different research approaches including research supervision (Anderson *et al.* 2021). This is emphasised by Gwagwa *et al.* (2022), who indicate that with AIKS higher degree by research, increasing each year, it is timely that higher education insti-

tutions and academics, within and outside Africa involved in AIKS develop-ment, become aware of best practice when supporting AIKS research students to succeed in the higher education environment. This is based on the view that supervision is arguably one of the most important support mechanisms provided to higher degree research students. Therefore, with increasing AIKS higher degrees by research, it is timely and crucial that higher education institutions, and research supervisors become aware of best practices when supporting AIKS research students. Thus, successful preparation of AIKS research students is contingent on quality student–supervisor relationships. However, challenges can arise when this supervision relationship is overlapped with cultural dif-ferences, whereby the supervisor has limited knowledge of the student's cultural background including the research cultural community (Anderson *et al.* 2022). The study argues that although the importance of higher degree research supervision is well studied and understood, including an increasing body of literature examining cross-cultural and intercultural super-vision, much less research, however, focuses on supervision experiences with AIKS postgraduate students and their non-Indigenous supervisors (Okolo *et al.* 2022).

The paper is based on a research study which explored the supervision prospects and challenges experienced by AIKS postgraduate students and their supervisors in the partner institutions of the DSTI-NRF Centre of Excellence in Indigenous Knowledge Systems (CIKS), with its hub at the University of KwaZulu-Natal, South Africa. The CIKS, is a partnership of five higher educa-tion institutions in South Africa, i.e., University of KwaZulu-Natal, North-West University, University of South Africa, University of Venda and University of Limpopo. It is also the hub of the African Institute in Indigenous Knowledge Systems (AIIKS). This is an international consortium of more than 20 higher education and autonomous research institutions, from within and outside Africa. It is inclusive of all linguistic regions of the continent, i.e., Anglophone, Kiswahiliphone, Lusophone, Hispanophone, Francophone and Arab Africa.

Research Questions

This was an exploratory study on the challenges and opportunities of supervising AIKS research in higher education institutions. Hence, it was imperative to develop research questions which were multifaceted for both the supervisors and students. They acted as a preliminary framework, guiding the researchers in identifying relevant data sources, selecting appropriate metho-dologies, and interpreting findings within a coherent context (Barroga *et al.*

2022). The supervisors' research questions were as follows:

(i) What are the benefits and challenges of supervising AIKS research? This question explored the overall experience of supervising research on AIKS, focusing on both the positive outcomes and the difficulties faced;

(ii) How do supervisors' prior experiences influence their approach to supervising AIKS research? This question examined how supervisors' own research backgrounds and previous experiences with AIKS might impact their supervision style and expectations;

(iii) What knowledge and skills are crucial for effectively supervising AIKS research? This was meant to identify the specific expertise needed to navigate the complexities of AIKS research, such as understanding local knowledge systems, working with community members, and engaging in culturally sensitive research practices;

(iv) How do supervisors navigate the diverse and sometimes conflicting perspectives within AIKS research? It investigated how supervisors handle potential disagreements or differing interpretations of AIKS knowledge among students and community members;

(v) What are the ethical considerations and challenges associated with research on AIKS? This investigated into the practicalities of ensuring that AIKS research was conducted responsibly and ethically, respecting cultural practices, obtaining informed consent, and avoiding exploitation.

The specific research questions for AIKS students included the following:

(i) How do students perceive the value of researching AIKS? This explored students' motivation for choosing research on AIKS, their understanding of the importance of this knowledge system, and their personal connection to these themes;

(ii) What are the challenges students face in conducting research on AIKS? This investigated the specific difficulties students encounter, such as access to information, navigating cultural contexts, and engaging with community members;

(iii) How do students experience the supervision process when researching AIKS? It delved into students' perspectives on their relationship with their supervisors, the support they received, and the impact of their supervisor's approach on their research;

(iv) What are the impacts of researching AIKS on students' learning and development? This explores how engaging with AIKS research might expand students' understanding of different knowledge systems, enhance their research skills, and cultivate a deeper appreciation for cultural diversity;

(v) How can AIKS research contribute to broader societal development? It investigated how the findings of research on AIKS can be used to address challenges, promote sustainable development, and build more inclusive and equitable societies.

Specific Objectives

The research had specific objectives for both AIKS supervisors and students. The supervisors' specific objectives were:

(i) To demonstrate cultural sensitivity and respect for AIKS, acknowledge-ing its historical significance and the diverse perspectives it encompass-ses. This included understanding the role of oral traditions, storytelling, and other cultural practices in transmitting and preserving AIKS;

(ii) To guide students in conducting ethical research that respects the rights and interests of AIKS custodians and practitioners. This involved ensuring informed consent, protecting confidential information, and avoiding any exploitation or misrepresentation of AIKS;

(iii) To engage with communities that hold AIKS. This involves collaboration with community leaders, elders, and knowledge keepers, fostering a sense of ownership and ensuring that research benefits the community;

(iv) To facilitate AIKS preservation by encouraging students to document, analyse, and disseminate findings in a way that protects the integrity and

authenticity of this knowledge system;

(v) To promote Inclusive Supervision by striving to create an inclusive environment that fosters diversity and equity in research. This involves recognizing and valuing the unique experiences and perspectives of all students, especially those from diverse backgrounds or with marginalized identities;

(vi) To empower students to take ownership of their research by allowing them to explore their interests, engage in critical thinking, and develop their own research questions.

The students' specific objectives were:

(i) To develop a comprehensive understanding of AIKS, including its history, cultural context, and practical applications. This involved engaging with primary sources, conducting fieldwork, and collaborating with community members;

(ii) To critically analyse AIKS, examining its strengths, weaknesses, and potential applications in a variety of contexts;

(iii) To demonstrate respect for the communities they work with, recognizing the value of their knowledge and traditions;

(iv) To be responsible for adhering to ethical research guidelines, ensuring informed consent, protecting confidentiality, and avoiding any exploitation or misrepresentation of AIKS;

(v) To contribute to the preservation of AIKS by documenting their findings, sharing their knowledge with others, and engaging in advocacy for the protection of this knowledge system;

(vi) To explore the interdisciplinary nature of AIKS, integrating it with other fields of study such as western science, technology, engineering, and mathematics.

Conceptual and Theoretical Framework

The supervision of AIKS represents a complex and multifaceted endeavour, requiring a robust conceptual and theoretical framework to effectively navigate its prospects and challenges. The exploration of AIKS necessitates a departure from conventional supervisory approaches, demanding instead a culturally sensitive and contextually relevant methodology (Ignace et al. 2023). This involves acknowledging the unique epistemologies, values, and practices embedded within AIKS, while also addressing the power dynamics and potential biases that may arise during the supervision process. It is imperative to create an inclusive system that recognizes the value of diverse knowledge systems and avoids repeating past mistakes of prioritizing one system over another. The development of such a framework necessitates a synthesis of various theoretical perspectives, including postcolonial theory, critical pedagogy, and indigenous research methodologies, to ensure a holistic and ethical approach to supervision.

The conceptual framework is grounded in the principles of cultural humility, emphasizing the importance of self-reflection and ongoing learning about diverse cultural perspectives. It takes into consideration that AIKS supervisors must acknowledge their own biases and assumptions, and actively seek to understand the cultural context of their students and the AIKS they are studying. Culturally sensitive supervision involves adapting supervisory practices to meet the specific needs of students from diverse cultural backgrounds. This may include providing mentorship and support to students navigating the academic system, addressing issues of cultural identity and belonging, and creating a safe and inclusive learning environment. The supervisory relationship should be built on trust, respect, and mutual understanding, fostering open communication and creating space for students to share their experiences and perspectives (Battiste, 2021).

The paper argues that drawing from postcolonial theory, the supervisory framework must actively deconstruct the historical power imbalances that have marginalized African indigenous knowledge systems (AIKS). This involves recognizing and challenging the dominance of Western epistemologies and promoting the validation and recognition of indigenous ways of knowing. Critical pedagogy emphasizes the importance of dialogue, collaboration, and reflexivity in the learning process, encouraging AIKS supervisors to engage in reciprocal knowledge exchange with students, fostering an environment where indigenous knowledge is valued and respected.

Indigenous research methodologies, such as participatory action research and storytelling, offer valuable tools for engaging with local communities and knowledge holders in a culturally appropriate and ethical manner. These approaches prioritize community involvement, respect for cultural protocols, and the co-creation of knowledge.

In the context of the AIKS theoretical framework (Buthelezi *et al.* 2024) emphasizes the significance of taking the following aspects into consideration:

(i) Drawing on the *Ubuntu* philosophy of 'human-ness', which emphasizes interconnectedness, empathy, and collective responsibility, can provide a framework for understanding the dynamics of supervision within an AIKS context;

(ii) Use of critical theory to analyse the power dynamics and social structures that influence research supervision, particularly in the context of AIKS;

(iii) Postcolonial theory can shed light on the legacy of colonialism and its impact on the development of AIKS and its integration into research;

(iv) Systems thinking can help to understand the interconnectedness of various factors, including the supervisor-student relationship, institutional policies, and the broader social context, in shaping the supervision of AIKS research;

(v) Understanding the epistemological foundations of AIKS can inform the development of research methodologies and approaches that are culturally appropriate and meaningful.

Methodological Framework

The methodological framework for a qualitative study examining the prospects and challenges of supervising African Indigenous Knowledge Systems research within higher education necessitated a multi-faceted approach, deeply rooted in interpretive paradigms that acknowledge the nuanced complexities of knowledge production and validation in diverse cultural contexts. This framework needs to be constructed on a foundation of cultural sensitivity,

ensuring that the research process respects and values the epistemological standpoints inherent within AIKS. The selection of appropriate qualitative methods became paramount, demanding a careful consideration of techniques that can effectively capture the richness, depth, and context-specificity of the experiences and perspectives of both supervisors and students involved in this unique research landscape (Mantula *et al.* 2024). A critical aspect of this framework lies in its ability to address the power dynamics inherent in the relationship between supervisors, who may be trained primarily in Western academic and research traditions, and students who are engaging with AIKS that often operate outside these conventional frameworks.

Data collection methods included in-depth interviews, focus group discussions, and document analysis (Ameli *et al.* 2024). In-depth interviews offered a rich source of information, providing detailed accounts of individual experiences, perspectives, and reflections on the supervisory process. Focus group discussions facilitated a collective exploration of shared challenges and opportunities, fostering a sense of community among participants and promoting a deeper understanding of the social dynamics at play. The analysis of relevant documents, such as institutional policies, research guidelines, and student theses, provided valuable contextual information and revealed institutional approaches to supporting AIKS research. The framework also incorporated strategies for ensuring the validity and reliability of the research findings, such as triangulation, member checking, and peer review.

The methodological approach involved a purposive sampling procedure. The goal was to identify individuals with deep expertise in AIKS research supervision in higher education (Iwara 2025). In depth and semi-structured interviews with a combination of open and closed questions were administered to a total number of 35 AIKS postgraduates (Masters and Doctoral) and 26 AIKS supervisors located in the CIKS partner institutions. The inclusion criteria included: (a) research participants being AIKS postgraduate students, registered at the CIKS partner institutions and AIKS supervisors at these institutions.

A thematic data analysis approach was used, employing both inductive and deductive coding techniques. Inductive coding allowed themes to emerge organically from the data, while deductive coding used pre-existing theoretical frameworks to guide the analysis. The themes were cross-examined to identify commonalities, differences, and patterns in the experiences of supervisors and students, leading to a deeper understanding of the prospects and challenges of supervising AIKS research in higher education. The goal of the research was to

provide insights and recommendations that could inform policy and practice in higher education institutions, ultimately fostering a more supportive and equitable environment for Indigenous Knowledge Systems research. Acknowledging the calls for collaborative approaches, researchers must push themselves towards deeper community engagement (Buthelezi *et al.* 2024).

The methodological framework incorporated strategies for disseminating the research findings to a wide audience, including academic publications, policy reports, and community presentations (Yeseraw *et al.* 2023). It was also critical to create culturally safe processes to ensure that the findings were accessible and relevant to the communities that participated in the research, promoting knowledge sharing and contributing to the empowerment of local communities. By prioritizing ethical considerations, promoting collaboration and partici-pation, and employing rigorous data collection and analysis methods, the framework generated meaningful and impactful research that contributes to the advancement of AIKS s in higher education. The methodological framework was rooted in participatory and decolonizing principles. This framework aimed to address historical power imbalances in research, ensuring that local community voices are centred and respected throughout the research process. This involves not only giving indigenous people a voice, but also actively listening and working with them to ensure that research is conducted in a way that is culturally sensitive and respectful.

Results and Discussion
1. *Socio-Economic Demographic Characteristics of Research Participants*

The majority of the AIKS postgraduate research students (Masters and Doctoral) in all the CIKS partner institutions were between 25 and 45 years old, whereas the supervisors were between 40 and 70 years old including the IK holders and practitioners as co-supervisors. The majority (65%) of the AIKS participant postgraduate research students were male. More than 50% of them were married with family and other responsibilities. Sixty-two (62%) of them researched on issues related to the cultural communities where the CIKS partner institutions were located, i.e. North-West, Limpopo, Gauteng and KwaZulu-Natal Provinces.

Seventy-eight (85%) of the AIIKS supervisors had doctoral degrees and were married. However, the majority (66%) of these supervisors were not local

to the cultural community where the CIKS institution was located. More than 60% indicated that they had more than 5 years' experience of postgraduate supervision and were still supervising AIKS research students.

2. *Qualities of a Good AIKS Supervisor*

Both the research participant supervisors and their students in the CIKS partner institutions had the view that in the intercultural supervision on AIKS research, good supervisors need to demonstrate the following qualities:

- provide research students with opportunities to experiment with their research and academic independence as part of their intellectual development.
- involve students in a supportive research cultural environment by providing opportunities to work with IK holders and practitioners in their field of inquiry.
- handle each student according to the students' own learning style and cultural background.
- support and encourage international IKS research students researching in a new cultural environment to develop agency.
- schedule regular formal and informal contact/consultation sessions with students.
- value cultural and other differences as a dynamism for the student's growth.
- deal with personal challenges of the student whenever they arise.

It was reported that keeping AIKS research students motivated, being on track in their work and supporting them physically, mentally and academically were important considerations for a good supervisor.

The survey revealed that despite growth in the AIKS postgraduate students' enrolments in recent years, their completion rates in some of the CIKS partner institutions remained low. For instance, in 2021 less than 20% of AIKS research students completed their degree programmes on time, due to a diversity of challenges, especially financial and other responsibilities.

However, both students and supervisors revealed that quality supervision played a vital role in supporting AIKS postgraduate students' success in completing their research degree programmes. The importance of supervisor's understanding and flexibility was emphasised in dealing with

students' range of issues including family and community responsibilities, work duties and research related issues. One research participant supervisor commented that good supervisors are those who try to understand students' personal and professional situations and help them resolve any issue arising in the supervision and research process. Moreover, to understand students holistically, it is critical for supervisors to listen to their needs and concerns.

Studies in other institutions within Africa dealing with AIKS research students also suggest that supervisors tend to experience the challenge of insufficient Indigenous research methodologies and/or cultural knowledge (Pohn *et al.* 2025). It is based on this challenge that the paper emphasises that AIKS supervisors need to understand and appreciate the significance of mastering AIKS research methodologies in AIKS postgraduate supervision. They need to acknowledge that ways of seeing the world are social constructions and that their perceptions are influential in how they guide and shape their students' research. This is based on the observation that it is common for indigenous postgraduate students to be aware of their non-indigenous supervisors' inability to contextualize or comprehend issues from an AIK perspective.

Reflecting on her own experience in AIKS supervision, one AIKS supervisor reported that AIKS postgraduate students from local cultural communities with Indigenous knowledge-focused topics would benefit greatly from having a supervisor with appropriate cultural knowledge or co-supervising with an IK holder and practitioner in his/her specific field of inquiry.

The survey revealed that more than 70% of the participating research students were being supervised by non-Indigenous supervisors and approximately 50% of them had the view that AIKS supervisors should undertake mandatory cultural awareness training. One research student indicated that problems could emerge between students and the supervisor in the supervision process due to cultural including linguistic differences.

The paper has the view that a supervisor's expertise in the discipline, in terms of knowledge and experience is an important factor in the supervision process. For instance, Thapelo, one research student participant at the University of Limpopo, emphasized the significance of expertise in the respective AIKS field on the part of the supervisor:

Good supervisors know their fields, have scholarship in the field in terms of teaching, research and publication including research methodological expertise that can support the research student, have

> good ethical understanding and demonstrate it, know about Indigenous people's socio-cultural protocols, understand the importance of working with IK holders as co-supervisors, especially to make up the expertise that non-Indigenous supervisor don't have.

Throughout the responses in the data concerning quality supervision, 'knowledge', 'expertise' and 'experience', particularly for AIKS issues and topics, were repeated multiple times. The following comment from Dr Molefe, an AIKS Supervisor at the University of Limpopo, demonstrated the importance of supervisors' experience:

> The ability to guide and facilitate the student's research is crucial. This involves setting reasonable deadlines and goals for students. Being able to discuss issues of content (theory, design, results) and processes in postgraduate research work in a meaningful and helpful way.

Another participant Supervisor, Dr. Mosweu, University of South Africa (UNISA), had the view that experienced AIKS supervisors, as a new area of inquiry, should be able to anticipate external examiners' critiques so that they can prepare their research students well for the submission of their dissertations and other research papers. These comments describe the characters of experienced supervisors and provide a clear message from participants in the CIKS supervisory team that inexperienced IKS supervisors lacking the relevant knowledge and expertise should not be placed in the team. A research Supervisor, Dr Mafunisa, at the North-West University, added:

> Some IKS supervisors have very limited understanding of critical Indigenous research methodologies. They are assigned or accept IKS without the necessary IKS supervision knowledge and skills, but simply by being an Indigenous person or just having a passion for IKS issues.

Displaying the same concern, another research participant, Mme Lerato, added:

> Although it varies greatly, many IKS supervisors do not have knowledge of IKS or training in IKS supervision, nor do they seek it out. This is serious in that, both non-Indigenous and some Indigenous supervisors, believe they can supervise IKS students without knowledge of indigenous knowledge methodologies, even when

knowing that they have no experience in this field. There are also people who have not grown up among indigenous communities or who may have only just learned about their cultural identity, but who think they know about Indigenous knowledge, research, its research methodologies and Indigenous experiences. Their knowledge is like that of non-Indigenous people.

On the issue of quality feedback and advice, Saliya (2021) states that in supervising postgraduate students, supervisors' feedback is extremely critical. This is elaborated by Dr. Luvhimbi, one of the research participant supervisors at University of Venda, who indicated that enabling IKS students to succeed in completing their research project requires them to provide critical and timely feedback. The majority (78%) of the research participant supervisors had the view that constant feedback on students' written work was one of the good practices in supervision. Dr Baboloki, an AIKS supervisor at North-West University, had the following experience:

> I provide instant feedback on written material and meet with the students to discuss the feedback to help them with practical matters as they arise, help with writing by commenting on material. Focusing on positives and how work can be improved to give students confidence in their abilities is another feedback strategy I use.

This view implies that supervisors' constant interaction with the students including feedback, enables the supervisor and the student, to assess the merit of the research and how it will be received by examiners. In support, by Yarlagadda *et al.* (2018) indicates that frequent and timely feedback to written work is essential. This is based on the consideration that students expect a much advice from their supervisors by providing good quality guidance in the research journey including publication of research results. This highlights the issue of communication and cooperation between supervisors and research students.

3. *Communication and Cooperation Between Supervisors and AIKS Research Students in AIKS Supervision*

One important aspect investigated in the AIKS supervision in the CIKS partner institutions was that of communication and cooperation between supervisors and research students. Battiste, *et al.* (2021) note that communication is key in

building a good rapport in the supervisor–student relationship and in effective cooperation with students who are working on an AIKS research projects as a team. The study reported that communication and cooperation with research students, especially on frequency of consultations, were good supervision practices. In most instances, supervisors who participated in the survey reported that they were very responsive to their research students' concerns, either via emails or phone calls and that their students could contact them any time to share up to-date information with them. In discussing cooperation with students, a participant supervisor, Dr. Ndlovu, University of KwaZulu-Natal, said:

> I work with the student to 'draw' the various part of the research project on a diagram and make connections. I find that visualising a research project, or at least the research methodology section, helps to clarify the students' mind and makes the writing flow.

Dr Ngidi, an AIKS supervisor from The University of KwaZulu-Natal, expressed the importance of giving students time to work on their project and being flexible when more time was required. She reported:

> I work with my students in setting out the timelines to monthly and weekly goals and what an average day might look like. This is important in the beginning when they are getting started and might be unsure. We work together in this process, and include things like time for fitness, picking up kids, and birthday parties etc. This helps minimise stress at peak times in the supervision and research process.

Generally, the survey found that communication and cooperation between AIKS supervisors and their research students as a team, is a good supervision practice to be followed by all supervisors, across disciplines. Buthelezi *et al.* (2024) states that communication between supervisor and his/her research student is key in successful quality supervision, i.e., creating a communication process which allows an open and respectful exchange of views on both sides. Ms Kau, an AIKS research student participant, at North-West University, said:

> In my view it is important to have an open rapport between supervisor and the student. The supervisor should be interested and concerned about students' well-being, studies and future through constant communication.

The significance of clear communication in the supervision process, was emphasized by both supervisors and students. Clear communication and cooperation allow supervisors to have genuine rapport with their students in the supervision and research process. This provides the pleasure and motivation among research students in learning new knowledge in AIKS as a field of inquiry and become experts in their specific disciplines of competence. It also encourages the students to complete their research projects on time. Furthermore, it was expressed that supervisors' support should not cease at students' completion; rather, the supervisors should focus on supporting students during the entire process and mentoring for a future career, beyond the degree programme. One research student participant, Mr. Molefe, at the University of Limpopo, said:

> A supportive supervisor would assist his/her students by creating and maintaining good quality work, by ensuring that the student has every opportunity to succeed, including the removal of any institutional barriers.

All the participant supervisors emphasised the significance of building strong supervisory teams to guide AIKS research students to completion as a crucial factor contributing to quality supervision. This involved guidance that empowers the research students to engage with the body of knowledge to generate new understanding and perspectives in the AIKS field of enquiry. Dr Tambulani, an AIKS supervisor at the University of Venda, indicated that once the supervision does not meet students' needs and problems arise, it is his/her responsibility to make the students aware of their right to request a reconfiguration of their supervisory team, by including IK holders and practitioners in the discipline of competence as co-supervisors.

Being flexible and empathetic to the students' personal, financial, work-related and study-related situations were also reported as good supervision practices. Dr Sifiwe, an AIKS supervisor at the University of Limpopo, said:

> I always check with my students, especially those with families, about care responsibilities, partner commitments etc. This helps me get a picture on helping in their lives, setting up goals that are realistic, planning and making it feel more possible.

The study reported that including IK holders and practitioners from the local communities into the AIKS supervisory team is a great support culturally and linguistically, for research students. Other support strategies reported by both research students and supervisors included supervisors' guidance, research training programmes, feedback, and cohort support. This could also be done by regular checking in with the students to keep them on track and engage in their research projects to identify any blockages. However, participant supervisors did not approve the practice of micro-managing their students' project progress but encouraged students' independence and skill development. Supervisors were also able to direct students to appropriate support services or courses. For instance, Dr. Moloi, a research participant supervisor at UNISA, stated:

> I try to check in with my students regularly, to let them know that I am there to support them. I know that some students retreat and hide when they are feeling overwhelmed or not doing well. I try to take that stigma away for them, so they know that they can talk to me if they are struggling.

Dr Rambuda, an AIKS supervisor at the University of Venda, reported that regular communication involving showing compassion and care when needed including looking out for opportunities for student development are important qualities of a good supervisor.

According to the research participant supervisors with more than 10 years of experience in AIKS postgraduate supervision and who were currently supervising AIKS research students, creating cohort support for AIKS students is a good supervision practice. It enables them to go through the supervision process together, supporting each other and provide opportunities to learn and share experiences. The survey found that discussing supervisors' expectations with AIKS students at the beginning of their research journey, is an effective strategy of promoting the values of cooperation. Stating clear expectations were also cited to be a good practice in supporting the students.

4. Engaging with Intercultural Differences in AIKS Supervision

Battiste (2021) states that supervisors need to be aware of the diversity of factors which influence a research student's personal and cultural identity, influencing his/her lifestyle and behaviour. This implies that one of the core responsibilities

of the AIKS supervisor is communicating and interacting across and between layers of cultural differences among their students, depending on the number and diversity of students being supervised. For instance, at North-West University and University of KwaZulu-Natal as CIKS partner institutions, supervisors had to deal with postgraduate students, at both master's and doctoral levels from South Africa, Cameroon, Kenya, Zimbabwe, Uganda, Nigeria, Ghana, Tanzania, Lesotho, DRC.

The survey reported that due to the growing cultural diversity of the AIKS postgraduate students in the CIKS and AIIKS partner institutions, the differences were complicated by nationality, ethnicity, religion, disciplinary, and institutional differences of both supervisors and students. Both experienced moments of transculturation, i.e., creating new knowledge by blending one's own cultural ways of thinking with those of other cultures including uncertainty or uneasiness in working in a different environment or culture. Dr Nchimbi, an AIKS supervisor, at UNISA, expressed the view that in developing an intercultural competence in AIKS supervision, one needs opportunities to reflect in an intentional way on the real shifts to one's multiple identities and learn how to cope in a multicultural environment as a student and supervisor of specific cultural-based studies.

Another participant supervisor, Dr Mogotsi, at North-West University, reported that in engaging with cultural differences one engages with diversity of forms of communication in the supervision process. According to him, this involved the following communication imperatives: awareness that one's assumptions may be wrong; asking before explaining oneself, asking open questions to elicit explanations, creating a safe, open space for exploration, and being curious.

However, the study has the view that cultural responsibility and fear of cultural alienation are an important factor that can potentially impact on the success of AIKS students. Therefore, supervisors of these students need to be aware of the role of cultural imperatives, be prepared to respond and provide appropriate direction when required. This implies that cultural knowledge and awareness training should be introduced to AIKS supervisors as it can be critical for students to achieve their best results.

Regarding the roles and responsibilities of IKS supervisors, existing literature highlights various responsibilities. They only play the role of a research guide for the IKS research student in their research journey, but also have ethical responsibilities, including awareness of Indigenous world views, ways of knowing, value systems and research methodologies including

Indigenous communities. Furthermore, they have a responsibility to strengthen their supervisory skills by participating in supervision development and cultural awareness training workshops to best support IKS research students. Anderson *et al.* (2021) emphasises that cultural awareness training should be mandatory to higher education staff and supervisors of IKS students in order 'to create a better environment where students feel culturally safe and understood'.

The study argues that guidance is one of the responsibilities of AIKS supervisors to ensure that AIKS students succeed. This is based on the view that AIKS is a new and marginalised area of inquiry, hence supervisors in this field have a strong responsibility to give AIKS research guidance and feedback on critical thinking, written communication, and relevant discipline knowledge. However, AIKS students in the CIKS partner institutions also expected their supervisors to provide more guidance on developing academic independence, collaboration skills and to maintain motivation. This was based on the view that postgraduate students in any discipline of inquiry who are actively supported and guided to increase their academic independence and collaboration skills tend to develop positive effects on their motivation and productivity as well as assist them to develop independent ideas and teamwork skills.

The study also took into consideration that supervising AIKS students further requires supervisors to maintain an ethical responsibility to ensure that the research students undertake is beneficial to the local community and the knowledge they produce reflects accurately local Indigenous worldview. Furthermore, supervising IKS students who use Indigenous research methodlogies in the local community context demands that supervisors have cultural knowledge and cultural awareness of these complex issues.

5. Role of Supervisor in Building Awareness on African Indigenous Knowledge Systems-based Ethics and Intellectual Property Rights

One of the participants AIKS supervisors at the University of Venda, had the view that the AIKS supervisor is to create critical knowledge and awareness on international ethics instruments such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). These aspects are still lacking in many institutions of higher education involved in AIKS research with local communities. There is tendency to focus more on institutional ethics approval processes and practices than to the inherent rights of local communities as IK

holders and practitioners. This view is supported by Ignace *et al.* (2023) who emphasizes the importance of ensuring that free, prior, and informed consent is obtained in all stages of the research process. This promotes a research and supervision process that is both excellent and relevant to the study community. For instance, the survey revealed that not many participant AIKS research students (< 40%) and participant research supervisors (<50%) were aware of recent international developments in the long-standing issue on Intellectual Property (IP), Traditional Knowledge and Genetic Resources. They were not aware that in May 2024, the World Intellectual Property Organisation (WIPO) member states adopted the first WIPO Treaty to address the interface between intellectual property, genetic resources, and traditional knowledge. It was also the first WIPO Treaty to include provisions specifically for Indigenous Peoples as well as local communities. This took into consideration of the fact that the recognition and application of these emerging IPR policy imperatives in AIKS research outputs are significance for advancing social, epistemic, and environmental justice through the systematisation of AIKS in the global knowledge economy (WIPO, 2024).

6. *Building Supervisor - Student Relationship in AIKS Supervision*

Both the participant AIKS supervisors and their students, reported on the importance of building a good supervisor-student relationship based on the following considerations:

(i) the need for the supervisor to treat students as role models for undergraduate students, rather than patronising them. These research students in new field of IKS often bring significant work and life experience, and some are multilingual. This enhances a culture of excellence in IKS research, built on relevance in communication. Thus, the need as a supervisor to articulate your expectations clearly and encourage transparency and accountability in the supervision process. For instance, providing them with opportunities to articulate and share action points from meetings, etc.).

(ii) create social and cultural interactions with students including sharing meals, occasionally one-on-one, and communally.

(iii) encourage students to participate in departmental social, cultural, academic events, and forums etc.

(iv) building cohort support groups for IKS research students, being aware of intra- and interdepartmental opportunities for this.

(v) taking time in each consultation with the students to catch up with what is happening in their lives and how it impacts on their progress. This involves listening, so that they are aware that, even when assisting them outside of the scope of your supervisory mandate, you see them as whole people with lives that are important.

Both supervisors and students reported that the relationship between the two in the supervision and research process is particularly crucial and one that needed to be based on mutual trust and respect. The participant research students indicated that at times the power difference in the relationship between students and supervisors negatively impacted their progress and expressed that often they were reluctant to challenge these differences due to the acknowledgement that supervisors were frequently placed under institutional pressure to perform. The study reported that quality supervision from a student perspective was a balance between academic and emotional support. One research student participant highlighted the importance of disciplinary expertise on the part of the supervisor in addition to these qualities. Other students put emphasis on the importance of continuity of supervision, because changes in supervision lead to problems and delays.

7. *Managing Conflict Situations in AIKS Supervision*
The paper extends the view that humans send and receive complex messages in everyday conversations, most of which happens without much conscious attention. Hence developing communication strategies in the AIKS supervision process between supervisor and student is key to avoiding conflict situations, though it is a complex skill which not everyone is equally good at but can be developed. Participant AIKS supervisors cited the importance of building a common understanding of scientific content, methods, and procedures between supervisor and research student at the onset including establishing an agreement on purpose, goals and action plan in the supervision process to avoid divergent expectations. This includes monitoring progress, to assist with necessary

interventions. One supervisor indicated the significance of activating student's own critical thinking, to deepen learning and problem solving which motivates students in the supervision and research process.

Dr Mavhungu, an AIKS supervisor at the University of Venda, had the view that managing AIKS student and supervisor diversity, should be taken as a process whereby supervisors of a marginalised knowledge domain such as AIKS promote democratic and epistemic justice, by taking care of AIKS students' rights and exposing them to critical learning.

8. *Significance of Professional Development in AIKS Supervision*

The previous sections discussed the importance of quality supervision in enabling AIKS research students to succeed. This section looks at the significance of AIKS supervisors' disciplinary expertise, experience and knowledge as a vital factor in quality supervision. It demonstrates the critical position of involving IK holders and practitioners in the AIKS supervision and research process, as part of the IK supervisory team.

Both the research participant supervisors and students had the view that the inclusion of IK holders and practitioners increases the relevance of the research outcome. Moreover, besides supporting the AIKS research students culturally, a supervisor's disciplinary expertise in the specific AIKS field helped research students in a specific discipline of competence such as traditional medicine, indigenous agricultural systems and practices, etc. to become effective researchers in the academy.

Participant AIKS students emphasised that good, professional and encouraging AIKS supervisors required cultural knowledge, awareness, including AIKS research methodologies to best support them. There is also a need for supervisors to have a close working relationship with IK holders and practitioners in the cultural community and understand students' social, cultural, spiritual including financial background for a holistic supervision.

The research participant supervisors' and students' views agreed with those of Saliya (2021) who indicates that supervisors of cultural-based research studies have an ethical responsibility to ensure that the research undertaken is relevant and beneficial to the studied cultural community and that the knowledge produced reflects accurately local worldviews. This view was based on the observation that non-Indigenous and Indigenous supervisors with limited cultural knowledge of the researched cultural communities, tend to experience

challenges in their research and supervision processes. Hence, professional development in cultural knowledge, awareness, safety, and AIKS research methodologies, through training and close cooperation with IK holders and practitioners, is a great support for AIKS professional development in their supervisory role and responsibilities.

Challenges and Prospects of AIKS Supervision

The survey was interested in establishing the challenges facing AIKS, in the context of supervisory expertise and alignment with students' expectations. The research revealed that the participant supervisors were concerned whether given the holistic, cultural-based, and multi-transdisciplinary nature of IKS, that the advice they gave to their research students was the best advice; and whether students feel that the supervisors were approachable to discuss concerns with them. Three main challenges raised by IKS supervisors in the CIKS partner institutions can be categorised as institutional, postgraduate students themselves and their supervisors:

(i) Institutional challenges refer to the marginalisation of IKS as a discipline of inquiry due to the history of colonisation and apartheid which led to the dominance of western science. Some supervisors articulated that the academy is not prepared and accommodative to IKS research with limited financial support. Currently most of the financial support is from the National Research Foundation.

(ii) Challenges related to IKS students, their mental health and well-being is also a concern. Gumbo (2021) indicates that pursuing a research degree is a long journey with many ups and downs and unexpected events that might occur. One research participant said:

It's a long journey and many unintended challenges happen in students' lives causing them to struggle to continue even though they are genuinely interested in their studies.

(iii) Some participant supervisors expressed their concerns about the mental health of students and the stress of failure they face, especially those with the burden of family and community responsibilities. Supervisors felt the challenge of keeping students on track, motivated and interested in their

work. Research study is a long learning journey and from time-to-time students have difficulties related to competing demands on their time which affects progress and can adversely influence work quality.

Positive supervisor practices, which include providing guidance throughout candidature milestones, being a mentor, and a champion for the students with open communication and constructive feedback are key.

Further, supervisory teams were most effective when they operated as a unified voice for students rather than one that was fractured and diverse. Such diversity was found to have negative impacts for students. On the issue of female and male IKS research students it was reported that female postgraduate students were more dissatisfied than their male counterparts in terms of both course experience and supervision. Important factors related to this included lack of access to supervisory support due to the high workloads of supervisors.

Articulating the concern when students get behind, Ms Lerato, an AIKS Masters student at North-West University, said:

> Sometime some non-local supervisors tend to be afraid to ask what is going on when a student gets behind. They need to keep students on track as part of their supervision responsibility and find out what support is required to keep students on track.

This implies that not being part of a student's local community means that there are many things that supervisors are unaware of and must work hard to earn trust. However, in contrast to the concerns of supervisors who try to keep students on track, it was found that some students did not put their whole effort into their research project. They treated their work as something they could do when they have more time and then rush through it at the end.

Both AIKS supervisors and students who participated in the study, identified the following challenges in AIKS supervision:

(i) African higher education institutions are mandated to develop the AIKS critical mass of human capital for social transformation and decolonisation processes, they lack strategic programmes and platforms to adequately capacitate AIKS supervisors, students and IK holders, to positively impact on local communities and the academy.

(ii) Academia including AIKS research supervision, lack indigenous pedagogies

and methodologies in working with marginal cultures, despite institutional vision and mission statements.

(iii) AIKS supervisors lack holistic understanding of student socio-cultural needs and its impact on supervision process.

However, the study reported that professional competence in AIKS supervision had the following prospects:

(i) To Like other knowledge systems, AIKS has its own worldviews (ontologies), ways of knowing (epistemologies), value systems (axiology) and research methodologies, which need to be promoted through research, teaching and community engagements.

(ii) The place-based, holistic and multi-transdisciplinary nature of AIKS attracts an increasing number of national and international researchers and postgraduates, helping to advance democracy and epistemic justice in the global knowledge economy.

(iii) Co-knowledge production between supervisors, students, IK holders and practitioners in the AIKS field, promotes the development of culturally appropriate pedagogies and research protocols.

(iv) Provides CIKS supervisors with a multi-transdisciplinary support network, to collectively navigate AIKS supervision challenges.

(v) As part of AIKS professional development, shared experiences help supervisors, students and IK holders in building trusting and respectful relationships in the research and supervision process. The research partici-pant supervisors reported that working together as a collective, assisted in orientation, resource access and mitigating cross-cultural differences. Dr Luvhimbi, an AIKS research supervisor, at University of Venda, had the following to say:

> Having a clear understanding of the socio-cultural protocols of the diversity of cultures, where the research process is conducted by AIKS students is very important. The supervisor needs to be flexible and should be able to work with the research students appropriately

in their situation. Cross-cultural understanding, understanding about 'cultural safety' is critical for students' progress. Supervisors need professionally, to understand how their behaviour and cultural limitations can impact on students' progress.

The participants strongly believed that 'cultural awareness' training is always important in the IKS academy. It would be a great resource for non-local supervisors and/or supervisors without Indigenous or local cultural background to learn more 'knowledge on culture and perceptions to mentor IKS students effectively'. Besides, it is critical for AIKS students to be culturally safe, hence working together with IK holders as co-supervisors was seen as important to support students. Students should also attend these AIKS empowerment platforms to understand the socio-cultural protocols for conducting IKS research.

Discussion

Supervising research on AIKS within higher education presents a unique set of prospects and challenges, demanding a nuanced understanding of the socio-epistemological landscape (Yeseraw *et al.* 2023). The integration of AIKS into higher education curricula and research endeavours holds immense potential for decolonizing knowledge production and fostering contextually relevant solutions to local challenges. This paradigm shift necessitates a critical examination of existing supervisory practices, pedagogical approaches, and institutional frameworks to ensure that they are aligned with the principles of inclusivity, reciprocity, and respect for Indigenous knowledge holders. Embracing this approach is essential for enabling the adoption emerging digital technologies including AI that support decentralized systems and align with indigenous economic practices. AIKS supervisors play a pivotal role in guiding students to navigate the complexities of AIKS, ensuring that research is conducted ethically and respectfully, and that the findings are disseminated in a manner that benefits the local communities involved. The integration of indigenous epistemologies into these technologies is significant for creating technologies that are culturally diverse and respectful, correcting an epistemic imbalance and rectifying historical exclusion (Ofosu-Asare, 2024).

        The prospects of supervising AIKS research, therefore, lie in its capacity to empower Indigenous and local communities, promote cultural revitalization, and contribute to sustainable development. By engaging with

Indigenous knowledge holders as active participants in the research process, AIKS supervisors and students can facilitate the co-creation of knowledge that is both theoretically sound and practically relevant. Such collaborative endeavours can lead to the development of culturally appropriate technologies, healthcare interventions, and educational programs that address the specific needs and aspirations of African communities. Moreover, the integration of African languages into emerging digital technologies development is crucial for ensuring inclusivity and promoting ethical digital practices

However, the supervision of AIKS also entails a number of challenges that must be addressed proactively (Gwagwa *et al.* 2022): These include:

(i) Lack of policy support, inadequate funding, and bureaucratic processes can hinder the implementation of AIKS research in higher education.

(ii) Insufficient resources for research, lack of readily available documentation, and the absence of standardized AIKS curricula impeding

(iii) Higher education institutions in Africa often operate within Western-centric frameworks, which tend to marginalize AIKS and perpetuate a bias towards Western research methodologies and epistemologies.

(iv) The loss of knowledge-holders due to factors like aging, migration, and cultural assimilation poses a significant threat to the presservation and transmission of AIKS.

(v) Integrating AIKS requires developing appropriate research methodologies that respect AIKS and avoid imposing external frame-works; (vi) Supervising AIKS research necessitates strong engage-ment with local communities, ensuring ethical research practices and respecting their intellectual property rights.

The opportunities include the following aspects:

(i) To AIKS provides a framework for connecting learning to the lived experiences and cultural contexts of African students, making education more meaningful and relatable.

(ii) Integrating AIKS enriches the curriculum by showcasing diverse knowledge systems and promoting inclusivity within higher.

(iii) AIKS offers a holistic approach to knowledge, often emphasizing interconnectedness between humans and nature, which can foster a more comprehensive understanding of the AIKS world.

(iv) AIKS holds potential for innovative solutions to local challenges, drawing on traditional practices and ecological knowledge for sustainable development.

(v) Integrating AIKS is a crucial step in decolonizing higher education, challenging the dominance of Western knowledge systems and recognizing the validity of African intellectual traditions.

Conclusion

The study concludes that supervising AIKS research in higher education presents unique challenges and prospects, particularly in light of the rise of emerging digital technologies including AI. Digital technologies can enhance circularity and sustainability, ensuring that technological advancements also support a just transition and dignified life for all. However, realizing this vision requires a critical examination of existing supervisory practices, institutional structures, and epistemological orientations. For instance, supervising AIKS research requires addressing issues of knowledge ownership, cultural appropriation, and the potential for misinterpretation or misuse of AIKS.

There is also the challenge of integrating AIKS into existing research paradigms and ensuring ethical engagement with knowledge holders. Addressing these challenges requires a fundamental shift in mindset, moving away from Eurocentric epistemologies and embracing a more inclusive and equitable approach to knowledge production.

By fostering collaboration, promoting ethical research practices, and investing in capacity building, higher education institutions can create an environment that supports and celebrates AIKS, ensuring that these valuable knowledge systems are preserved, shared, and used to address the challenges facing African communities and the world at large. The prospects include the fact that research on AIKS can contribute to curriculum development, environmental sustainability, and community development. It can also help decolonize education by valuing local knowledge and value systems.

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