THE ROLE OF PARTNERSHIPS IN TEACHING INDIGENOUS KNOWLEDGE FOR SUSTAINABILITY IN RURAL PRIMARY SCHOOLS OF LIMPOPO PROVINCE

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ABSTRACT
The role of partnerships has recently grown in importance because it promotes collaboration to achieve a common goal, creating a need to teach Indigenous Knowledge (IK) in primary schools. However, schools often lack the methodology and confidence and are unprepared to teach IK from a partnership perspective. Research on the role of partnerships in teaching IK in primary schools is overlooked. This qualitative study explored the role of partnerships in teaching IK for sustainability in rural primary schools around Limpopo Province. A single-case, interpretive paradigm, social constructivism, and mixed-methods (together) approach was employed. Data was collected through semi-structured telephone interviews with teachers, document analysis, and participant observations. Inductive thematic analysis was employed to analyse the data. The findings revealed that partners played their roles and shared knowledge and skills to benefit the school. Hindrances included unpreparedness, a lack of teaching methodology, resources, and confidence. The study contributes a practical approach to teaching and sustaining IK and the environment through partnerships.

Keywords: Partnership, curriculum, indigenous plants, indigenous knowledge, mmogo

INTRODUCTION
The issue of partnerships has recently gained importance because it promotes working together, ‘Together we can’ (United Nations Educational, Scientific, and Cultural Organisation [UNESCO], 2025). This means partnerships could play a role in teaching Indigenous Knowledge (IK) for sustainability in primary schools. Partnerships are voluntary agreements between public and private actors aimed at achieving specific objectives to reach a common goal (Branellec, 2022). Da Silva, Pereira and Amorim (2024) systematic review on the integration of IK in primary schools in developing countries included a pilot project for multilingual education in a minority language community in the Philippines. The project was implemented in partnership with the Department of Education at the local, regional, and national levels. Among the project's key strengths was its involvement of the local community throughout planning and implementation (Da Silva et al., 2024). It therefore shows that partnerships can play a role in teaching IK successfully in primary schools. Da Silva et al. (2024) offer an opinion that addresses Ebele’s (2024) concern that, although the incorporation of IK into the curriculum has been considered globally as a vehicle to promote environmental awareness, cultural sustainability, and inclusive development, it has not been successful. Ebele (2024) notes that although IK has been incorporated in various countries, including Nigeria, it remains underutilised in primary education. It therefore suggests that environmental and cultural

sustainability, as well as inclusive development, could not be achieved. In South Africa, IK is incorporated into the Curriculum and Assessment Policy Statement (CAPS) for Grades R-12 through themes for certain subjects and certain principles that underpin the same curriculum (Department of Basic Education [DBE], 2011). This means there is a need to find a strategy that enables primary schools to teach IK in a way that sustains it and the environment, because Cindi (2021) opines that teachers are not competent to teach the Indigenous Knowledge Systems as incorporated into the CAPS. Even though Ebele's (2024) investigation was intended to explore strategies for integrating IK in primary education, the role of partnerships was not considered. The literature on partnerships in teaching IK for sustainability in rural primary schools in developing countries is scanty. This study explored the role of partnerships in teaching IK for sustainability in rural primary schools around Limpopo Province.

Sustainable Development Goal (SDG) 17 emphasises the importance of partnerships, and this goal focuses on developing an inquiry-based project that promotes collaboration and teamwork. For this study, partners were involved in a project to assist a rural primary school in teaching IK to sustain it and the environment. Gordon, Ross, Bauer-Armstrong, Moreno, Byington, and Bowman (2023) view indigenous academic partnerships as an opportunity to integrate Indigenous Traditional Ecological Knowledge with Western science in land management. Therefore, partnerships could contribute to environmental sustainability by teaching IK and Western science knowledge that can be applied in rural primary schools in developing countries.

Branellec (2022) opines that a partnership comprising teachers, community members, non-governmental organisations (NGOs), and private institutions was established to monitor and sustain projects by evaluating their efficiency in reducing biodiversity loss through a school garden, which was successful. The role of NGOs was to restore and conserve indigenous plant species, thereby increasing the community's knowledge of agroecology through a traditional indigenous agricultural system called *huerto escolar*. The results showed that restoring the school garden brought back a biodiverse ecosystem, thereby maintaining the sustainability of the IK and biodiversity (indigenous plants and animal species). Teachers utilised the school garden as a teaching resource while the community's elderly group shared IK with the teachers and learners, thereby improving their understanding of IK. The teaching of *the Huertos*, which addressed anaemia, was another significant aspect that promoted IK and its sustainability. It suggests that the partnership played a role in teaching IK and incorporating sustainability. A community engagement (CE) project is a purposeful act of interaction with schools, either individually or through local organisations, intending to enhance the schools' capacity to engage and support families in navigating their children's pathways through the school system (Sanders, 2003). In this case, teachers were supported through partnerships under the CE project.

THE PROJECT SETTING

This investigation was conducted in a rural primary school in Limpopo Province. Limpopo Province is one of the nine provinces in South Africa. The school is in a rural village and admits learners who live there. This research was conducted

following the implementation of the CE project initiated by an official from the University of South Africa (UNISA). The project focused on the Intermediate Phase (IP) and two subjects, namely, Social Sciences (SS) and Natural Sciences and Technology (NS & TECH), as they integrated IK themes. The research questions being addressed are as follows:

- What is the role played by partnerships in teaching Indigenous Knowledge for sustainability in primary schools around Limpopo Province?
- How did the school benefit from the partnership?

THEORETICAL FRAMEWORK

The social constructivist theory served as a lens through which this study was viewed, as teaching IK and sustainability involves the construction of knowledge within a social context. For this study, partners, including teachers, learners, the community, UNISA, the Gauteng Department of Education, and the South African National Botanical Garden (SANBI), shared knowledge and skills in a social environment to construct new knowledge. The mmogo approach, best understood by the school community, was employed alongside the theory, as this study focuses on partners working together (mmogo) to assist teachers in teaching IK (construct knowledge) successfully in rural primary schools. Mendes (2022) advocates for partnerships, therefore agreeing with Roos' (2012) mmogo.

REVIEW OF RELATED LITERATURE

Incorporation of IK into the curriculum and progress in teaching

Recent developments in curriculum design have sparked global interest in integrating IK into formal learning contexts (DBE, 2011; Mbhatsani, 2024; Ebele, 2024). Cindi (2021) acknowledges that in South Africa, efforts have been made to align the curriculum with constitutional principles and the Curriculum and Assessment Policy Statements (CAPS). Despite this effort, there is a lack of guidance on how teachers should teach IKS across subjects to achieve inclusive education (Cindi, 2021). Nesterova (2020) notes that indigenous societies across various regions are currently seeking sustainable strategies, in collaboration with science specialists, to preserve the environment. Additionally, teachers face the challenge of teaching IK, including unpreparedness (Makokotlela, 2021; Ebele, 2024) and inadequate teaching materials (Cindi, 2021; Ebele, 2024). This suggests that even when IK content is integrated into the curriculum, teaching may be unsuccessful if teachers lack the competence to teach it. Partnerships could enable teachers to teach IK and sustainability effectively, as the partnership described by Branellec (2022) did. I argue that partnerships could be one strategy for empowering teachers to teach IK and environmental sustainability effectively.

The role of partnerships in teaching IK

Partnerships are considered crucial for helping primary schools teach IK successfully (Morris, Slater, Fitzgerald, Lummis, and van Etten, 2021). The study by Higgins and Goodall (2021) in New Zealand highlights the importance of exploring potential connections between deliberate and ecological wellbeing within educational policy and practice, benefiting all stakeholders. Higgins and Goodall (2021) recommended a partnership that considers the indigenous knowledge of Māori peoples and non-

Māori knowledge to inform policy for transformative practices that promote wellbeing in education. Through their study that focused on years 7 and 8 children in a rural school, Morris et al. (2021) applied a Local Rural Knowledge, which uses local knowledge as a driver tool, to explore academically gifted pupils' engagement and learning in Science, Technology, Engineering, and Mathematics using their contribution while focusing on sustainability and land rehabilitation. It was found that the LRK model showed anecdotal proof that the partnership between the university, the school, and the local community yielded fruits in terms of the school' teaching staff. On the other hand, sustaining partnerships with rural communities incurs substantial costs for metropolitan-based universities (Morris et al., 2021).

Da Silva et al. (2024) presented a systematic review of the integration of IK in primary schools in developing countries, along with the results of the interventions. The findings highlighted the importance of engaging the community in designing, implementing, and evaluating programmes, as well as the role that linguistic ecology plays in shaping schooling in multilingual and multicultural contexts. A study conducted in South Africa found that a top-down approach to changing the education system, involving teachers, parents, learners, elders, traditional healers, and academics, is not effective (Da Silva et al., 2024). A decolonisation of teaching and learning from the bottom up can be initiated (Da Silva et al., 2024). This suggests that a partnership involving various stakeholders should be established, considering the local community, and allowing them to participate in developing a plan for how IK should be designed, taught, and assessed, rather than imposing one.

On the other hand, the South African audit for IK, conducted by the Council for Scientific and Industrial Research in partnership with higher institutions, led to the design of the Policy on Indigenous Knowledge Systems. SDG 17 addresses partnerships that should help ensure sustainable communities, which include a sustainable environment. This demonstrates that partnership is crucial when addressing IK issues, which is seen as a capable approach to addressing environmental problems and ensuring sustainability. Despite scholars such as Odora-Hoppers (2005) highlighting years ago that IK provides alternative ways for a community to manage environmental sustainability, and Magni (2017) highlighting the indigenous people's sustainable way of living, IK teachers struggle to teach it successfully while environmental degradation continues, and the struggle to search for possible strategies to teach IK successfully continues.

In some contexts, attempts to incorporate IK into the curriculum did not consider partnerships with indigenous societies. For example, Govender and Mutendera's (2020) study in Zimbabwe found that IK was excluded from the primary school curriculum. Disregarding local people's culture while prioritising Western cultures is deeply concerning, as it creates a gap in the native cultures of learners and teachers in developing countries. It is worrying that IK was ignored, while it is crucial in early childhood education to have parental involvement and the use of the child's mother tongue. Partnership with local communities is critical at this stage, as it would enable teachers to teach IK and sustainability. However, the indigenous community was ignored.

Again, “many Aboriginal students continue to receive inequitable and poor-quality schooling in Australian schools in ways that do not meet their sovereign needs” (Lowe, Weuffen, Woods, Burgess and Vass, 2025:1). Considering the above discussion, the partnership has advantages and disadvantages.

Following a review of the literature, it can be concluded that partnerships involving local communities in teaching IK, sustaining it, and promoting environmental awareness in primary schools have been successful (Branellec, 2022). On the contrary, in primary schools where partnerships with local communities were ignored, schools face challenges in teaching IK, underscoring the purpose of SDG 17.

METHODOLOGY

This research explored the role of partnership in teaching IK for sustainability in primary schools around Limpopo Province. A qualitative approach was employed, as it provided an in-depth understanding of a unique phenomenon, including the interpretive paradigm and a single bounded case bounded by time and place, following Coombs’ (2022) idea, as their relatedness was significant in yielding findings for this study.

Purposive sampling was employed to select participants involved in the project who provided significant information that addressed the research questions. It was done with careful consideration because data analysis might not yield credible outcomes if the data were gathered inappropriately (Walliman and Walliman, 2021). Two IP teachers involved in the project were sampled: one teaching SS and the other NS & TECH. These subjects were core to the project as they integrated IK.

Three data collection methods were used, including semi-structured telephonic interviews, document review, and participant observation, to have comprehensive data that would enhance the authenticity of the findings. An arrangement was first made with the school principal face-to-face during a school visit. After the principal agreed, the arrangements of dates and time frames with the teachers were made virtually through Microsoft Teams. They agreed to participate in the interviews, which would be conducted only during break time or after school, and the latter option was chosen. The teachers were informed that their responses would be recorded, and they provided their consent.

The interview data was collected from teachers via Microsoft Teams, lasting 35 to 40 minutes, and was recorded. Documents, such as CAPS for IP Grade 6 SS, NS & TECH, workshop materials, and meeting minutes, were reviewed and selected. Participant observation data was collected during the workshop and the meeting at the school, and notes were taken during these activities.

Ethics approval was obtained from the researcher’s institution (#2019/06/12/90326768/28/MC), Limpopo DBE, and the Premier’s office (#LPREC/99/2021: PG). The purpose of data collection was explained to the participants, and consent was requested. They then consented and signed the forms. Trustworthiness was further ensured by presenting the findings at a conference for critical purposes.

An inductive thematic analysis of the data was conducted, ongoing throughout all data collected via three methods, beginning casually during the data collection stage. For the interview, data analysis began during the interview itself. Document review began during the selection process, which included relevant meeting minutes, workshop materials, and CAPS documents for the subjects selected for this study. For participant observation, data analysis began when the researcher participated in activities such as teachers' training, planting indigenous plants, and utilising the indigenous garden as a teaching resource.

After the informal analysis, the data was formally analysed. Recorded interview data was saved on a computer that was opened by logging in with a secret password, and on OneDrive. Only the videos saved on OneDrive were listened to multiple times to understand and make meaning of the data, and a transcript was then created. Documents were read several times to understand the connotation regarding whether IK was incorporated into the CAPS and whether it was covered in the workshop material and meeting minutes. Notes taken during participant observation were read repeatedly, separating relevant information from unnecessary data, thereby allowing answers to the research questions. The transcript, together with data from document review and participant observation, was administered. An interpretive paradigm and inductive analysis facilitated a detailed reading and interpretation of the information, leading to coding, identification of similar words, and grouping them. Similar words were grouped into clusters, which were then merged into categories and subsequently organised into concepts. The findings and discussions were conducted in accordance with the research questions.

FINDINGS AND DISCUSSIONS

The findings from the interview, document examination, and participant observation are discussed in an integrated manner. The findings from the CAPS document revealed that IK was integrated into the IP SS grade six history subject, focusing on indigenous plants and herbs, and into the NS & TECH grade six subject, exploring indigenous ways of processing food in different communities (DBE, 2011). The findings from the interviews and meeting minutes revealed that the teachers lacked awareness of IK's contribution to addressing environmental problems, effective teaching methodologies, and suitable teaching resources. This finding aligns with Cindi (2021) and Ebele (2024), who also report that teachers faced the challenge of inadequate teaching materials. The interview findings revealed that the teachers employed a narrative methodology and used textbook photocopies, which provided scant information on IK as a teaching resource. This hindered teachers from delivering IK lessons successfully. To answer the first research question, the findings from the interviews, meeting minutes, and workshop materials revealed that a workshop on IK was conducted through a partnership involving officials from UNISA, the Gauteng Department of Basic Education, and SANBI. Each partner played their role – the UNISA official organised the workshop, provided resources, and worked with the teachers on using an active participatory methodology and an indigenous garden as a teaching resource; an official from the Gauteng Department of Basic Education advised on IK to be covered, as the content was trimmed due to COVID-19; the SANBI official workshopped the teachers on the different types of indigenous plants, their uses, and the fact that they require less water to survive. An indigenous

plant garden was established in partnership with officials from UNISA and SANBI, as well as learners, teachers, and community members. The composition of the partners and the specific roles each performed align with Branellec's (2022) and Soudee's (2009) ideas that partnerships are vital for achieving a common goal and sustaining projects, and that they are significant in assisting primary rural schools to successfully teach and sustain IK and the environment. Teacher Ratel has this to say when asked about the teaching methodology.

> I taught IK the way I teach other subjects before the project implementation. But it is difficult for the learners to understand. Now I take the learners out of the classroom to the indigenous garden and make the lesson practical. This improved their understanding.

The teacher's response indicates that the workshop helped them learn about an active, participatory methodology. An indigenous garden provided a practical resource for teaching IK successfully, as learners' understanding improved, leading to better performance.

This response shows that the garden became a useful teaching resource. This finding aligns with Cindy (2021) and Ebele (2024), who suggest that the teaching material used in IK instruction is crucial.

Teacher Mollo was asked if the garden was a good teaching resource and said:

> The garden is a sustainable teaching resource as the plants need less water. We will not worry about textbooks with scanty information. I also know some plants and their uses, which my grandmother taught me. These plants make our school look beautiful, and they are a great addition to the greenery.

The above response suggests that teachers require awareness and training on the relevant methodology to be used, as well as access to resources to teach IK successfully. So, the partnership was helpful.

The finding on sustainable teaching resources, as alluded to by teacher Mollo, confirmed Odora-Hoppers' (2005) view that IK provides other ways in which a community manages environmental sustainability. This literature demonstrates that native communities had effective ways of managing long-standing environmental problems to safeguard sustainability in the past. It is essential that IK is taught effectively, as it is seen as a vehicle for addressing environmental sustainability and mitigating the consequences of climate change. Again, the finding aligns with UNESCO (2025), which states that contributions made through IK could lead to environmental sustainability. It is also supported by Magni (2017) and Branellec (2022) that IK is significant in addressing environmental problems that cause ecological challenges, while preventing biodiversity loss. Findings revealed that the teachers employed an active participatory method and utilised the garden as a teaching resource. The school purchased some indigenous plants and propagated others, recognising their importance. To answer the second research question, the learners demonstrated an improved understanding of IK, their performance

improved, the indigenous garden provided a valuable teaching resource, and the teaching methodology was effective.

CONCLUSION AND RECOMMENDATIONS

This study explored the role of partnerships in teaching IK for sustainability in rural primary schools around Limpopo Province. The research questions, as stated in the introduction, have been addressed in this article. Therefore, this investigation concludes that partnerships play a significant role in teaching IK in primary schools to sustain it and the environment. Partners from the UNISA CE project, the Gauteng Department of Education, and the NGO joined forces to implement a project aimed at capacitating teachers in teaching IK. Each partner played their specific role based on their expertise, with one purpose in mind: to equip the teachers to teach IK successfully. The joint effort yielded positive results and benefited the school because the teachers learned and used an appropriate methodology while using the indigenous garden as a teaching resource. The project, through the partnership, motivated teachers to teach IK and, consequently, improved learners' performance. Additionally, the school had already propagated some plants before the project members advised them to do so. The school bought indigenous plants and planted them along the school fence. This was an indication of the positive impact of the awareness raised by the partners through the project. It is recommended that the community, circuit, and district support the school beyond the project implementation. The school should seek other partners to help sustain the benefits and explore further opportunities.

LIMITATION AND FUTURE RESEARCH

Although the investigation achieved its goal, this study did not examine whether the school partnered with other stakeholders due to the implementation of the UNISA CE project. Future research should examine whether the UNISA CE attracted other partners and the roles they played.

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REFERENCES

Branellec, K. (2022). *Surveying Local Community Members on the Viability of Mitigating Anaemia in Ica, Peru, through School Gardening.* Master's Dissertation. University of Waterloo.

Cindi, L. (2021). *Incorporating African Indigenous Knowledge Systems into the Basic Education Curriculum: Experiences from Two Schools in the Gauteng and KwaZulu-Natal Provinces, South Africa*. Master's Dissertation. University of the Free State.

Coombs, H. (2022). *Case Study Research: Single or Multiple?* Southern Utah University. https://haydencoombs.files.wordpress.com/2022/09/case-study-research-coombs-2022-3.pdf

Da Silva, C., Pereira, F. and Amorim, J.P. (2024). The Integration of Indigenous Knowledge in School: A Systematic Review. *Compare: A Journal of Comparative and International Education,* 54(7): 1210-1228.

DoBE (Department of Basic Education). (2011). *Curriculum and Assessment Policy Statement: Grades 4-6 Social Sciences*. Government Printers.

Ebele, O.T. (2024). Strategies for Integrating Indigenous Knowledge in Primary Education and Its Impacts on Sustainable Development and Inclusive Growth. *Journal of Gender and Millennium Development Studies,* 1(2): 93-105.

Gauteng Department of Education. (2011). *CAPS (Curriculum and Assessment Policy Statement)*. Government Printers.

Gordon, H.S.J., Ross, J.A., Bauer-Armstrong, C., Moreno, M., Byington, R. and Bowman, N. (2023). Integrating Indigenous Traditional Ecological Knowledge of Land into Land Management Through Indigenous-Academic Partnerships. *Land Use Policy*, 125: 106469.

Govender, N. and Mutendera, G. (2020). Teachers' and Custodians' Views and Dilemmas Arising Thereof Regarding the Integration of Indigenous Knowledge in the Primary School. *AlterNative: An International Journal of Indigenous Peoples,* 16(4): 356-368. https://doi.org/10.1177/1177180120970935).

Higgins, J. and Goodall, S. (2021). Transforming the Wellbeing Focus in Education: A Document Analysis of Policy in Aotearoa New Zealand. *International Journal of Qualitative Studies on Health and Well-being*, 16(1): 1879370.

Lowe, K., Weuffen, S., Woods, A., Burgess, C. and Vass, G. (2025). Conceptualising Culturally Nourishing Pedagogies for Professional Learning in Australian Schooling. *The Australian Educational Researcher,* 52(1): 627-646.

Magni, G. (2017). Indigenous Knowledge and Implications for Sustainable Development Agenda. *European Journal of Education,* 52(4): 437-447. https://doi.org/10.111/ejed.12238

Makokotlela, M.V. (2021). Exploring Teachers' Views Regarding Environmental Education. *The International Journal of Pedagogy and Curriculum*, 28(1): 57-70.

Mbhatsani, H.V., Tambe B.A., Zuma M.K. and Mbhenyane, X.G. (2024). A Model for the Promotion of Consumption of Locally Available Indigenous Vegetables Among Primary School Children. *Frontiers in Nutrition,* 11: 1394905. https://doi.org/10.3389/fnut.2024.1394905

Mendes, V. (2022). Climate-smart Cities? Technologies of Climate Governance in Brazil. *Urban Governance,* 2(2): 270-281. https://doi.org/10.1016/j.ugj.2022.08.002

Morris, J., Slater, E., Fitzgerald, M. T., Lummis, G. W. and Van Etten, E. (2021). Using Local Rural Knowledge to Enhance STEM Learning for Gifted and Talented Students in Australia. *Research in Science Education,* 51(Suppl 1): 61-79.

Nesterova, Y. (2020). Rethinking Environmental Education with the Help of Indigenous Ways of Knowing and Traditional Ecological Knowledge. *Journal of Philosophy of Education,* 54(4): 1047-1052.

Odora-Hoppers, C. (2005). *Culture, Indigenous knowledge and the Role of the University*. Centre for Education and Policy Development Occasional Paper No. 5. CEPD.

Roos, V. (2012). The Mmogo-Method™: An Exploration of Experiences Through Visual Projections. *Qualitative Research in Psychology,* 9(3): 249-261.

Sanders, M. (2003). Community Involvement in Schools: From Concept to Practice. *Education and Urban Society,* 35(2): 161-180.

Soudée, A.R. (2009). Incorporating Indigenous Knowledge and Practice into ECCE: A Comparison of Programs in the Gambia, Senegal and Mali. *Current Issues in Comparative Education,* 11: 15-23

The United Nations Educational, Scientific and Cultural Organization. (2025). *United Nations Educational, Scientific and Cultural Organization*. https://www.un.org/sustainabledevelopment/es/education/

Walliman, N. and Walliman, N. (2021). *Research Methods: The Basics.* 3rd ed. Routledge. https://doi.org/10.4324/9781003141693