

ABSTRACT

The purpose of this study was threefold: first, to analyse relevant science curricula and policy documents in Zimbabwe for their guidance on the teaching of indigenous knowledge (IK) and the promotion of cultural values; second, to explore and document indigenous methods of food preservation; and third, to develop a teaching model for science education in Zimbabwe. Indigenous forms of knowledge are not being used in the teaching of science in schools and could be lost if they are not integrated with school science.

I focused on IK methods of food preservation for the science curriculum. The knowledge encompassed not only the IK practices and methods of food preservation but also the social and the spiritual influences that have a bearing on food preservation. This study was carried out over a period of three years in Chivi, a remote dry rural area of Zimbabwe.

The methodology was a qualitative multiple case research study conducted in the local language of Chishona. Participants were community elders, science teachers, schools and learners from two villages. I generated the data using multiple methods including document analysis, interviews, brainstorming sessions, site visits, participant observations and free-writing sessions. I used document analysis on the Zimbabwe school science curriculum and policy documents. I interviewed community elders, science teachers and school learners on IK methods of food preservation and how such methods could be used in the teaching of the topic of food preservation in school science classes in Zimbabwe. Science teachers involved in the study were also given the opportunity to brainstorm on issues related to IK methods of food preservation and to suggest ways that this knowledge could be integrated into school science teaching. I made site visits to community elders' places of residence

where I observed their food preservation artefacts. School learners were also given the chance to engage in free-writing sessions on stories, games, idioms and cultural expressions related to methods of food preservation. I used journaling throughout this investigation to reflect on my research process. I sought validation of my initial thoughts from community participants. My data analysis was both deductive and inductive. To guide the analysis, I used grounded theory as an analytical tool.

The Zimbabwe Ministry of Primary and Secondary Education recommends that schools should include learners' cultural identities in learning but there are some omissions and no guidance of how this should be done. It also calls for a science content which provides values that mould learners into useful citizens. Documents also indicate that the science topic of 'food preservation' teaching should be drawn from methods used in local communities which include the use of learners' local languages in science teaching.

This study provides numerous examples that may assist teachers to integrate local IK content into their science teaching in schools. For example, community elders use '*hwikwiyo*' (granary with plastered roof) to dry and store their grain crops; and '*chingo*' (clay pots) to ferment and thicken their milk. The study also highlights the importance of Chishona language specific terms which are not usually used in school science teaching.

The interview results suggest that teachers and learners were, at first, not aware of how IK could be used in science teaching and relied mostly on traditional methods of teaching science. However, by the end of the research project, teachers indicated that the community's IK methods of food preservation, in relation to the use of prior experiences, examples and resources from culture, could be used in their classrooms. Teachers also suggested the use of cultural heritage and an emphasis on mechanism of methods involved in food preservation as important considerations

for school science teaching.

The study concludes that IK of food preservation could be integrated into the teaching of school science through the use of specific examples.

The IK-science integration policies need to be strengthened given that some documents did not include how such integration should be done.

Research on the use of spiritual values and '*zviera*' (cultural taboos) is not resolved and may be suggested as an important area for further studies for science education.