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TITLE

Perceptions of college learners and lecturers on the use of Dialogical Argumentation strategy in the integration of IK into the college agricultural curriculum : A case of Agricultural College in Zimbabwe.

INTRODUCTION

- While there have been so much calls for IK integration into the formal curricula, not much research as yet has come up with a pedagogical approach to be used in this process(Msila,2016).
- Dialogical argumentation instructional strategy is one of the few approaches that have been suggested. Several studies most of them in South Africa have been done to see the feasibility and effectiveness of this method with varying results (Ogunnyi, 2017).

INTRODUCTION CONTINUED

- It is therefore the intent of this study to attempt to see the feasibility of using this approach outside South Africa.
- This study is purposed to find out the college learners' and college lecturers' perceptions of on the use of argumentation instructional strategy as a pedagogical instrument in the integration of IK and western science in the agricultural college curriculum.

LITERATURE REVIEW

- International and local literature suggests that the use indigenous knowledge contexts in agricultural education provide motivation, self-esteem (McKinley, 2005) and relevance (Manzini 2000) to communities involved.
- Indigenous knowledge also provides more peer interaction (Clark & Ramaphale, 1999, George 1996) and positive learning experience (Machingura & Mutemeri 2004).
- Relevance and participation in learning go together and relevance in agriculture encourages learners to participate in learning processes more deeply, learning in their own ways and bringing together their ideas, interests, and experiences (Naidoo, 2010).

RELEVANCE CONTINUED

Govender (2009), highlights the relevance of IK in classrooms as follows:

“ A science curriculum that includes aspects of relevant indigenous knowledge that recognises students’ preconceptions and worldviews and affords a platform of “different ways of knowing” and encourages critical thinking that is bound to attract and sustain more students in science” (p.119).

TAUGHT CURRICULA

- Worldwide, curricula, teaching methodologies, and assessment strategies associated with school science as it is currently being taught, projects a western worldview (Kawagley, Norris-Tull & Norris Tull 1998).
- This western worldview assumes that indigenous learners enter schools without any meaningful knowledge.
- On the contrary, the learners usually enter school with a range of knowledge about plant, soil, bird, animal and insect life (Odora, 2002).

MAIN RESEARCH QUESTION

What are the perceptions of college lecturers and the college learners on the use of Dialogical Argumentation Instructional Strategy in the college agricultural curriculum?

THEORETICAL FRAMEWORK

- Toulmin's Argumentation Pattern, later modified by Ogunnyi, maintains its appropriateness as pedagogy of choice for the transmission of the scientific aspects of the integrated IK-SCIE curriculum.
- An argument consists of claims, counterclaims, evidence, warrants, backings, qualifiers and rebuttals.
- It should be noted that TAP is inappropriate when IK is considered because of the metaphysical aspects of IK.

THEORETICAL FRAMEWORK continued

- The metaphysical manifests itself through beliefs, religion, myth for which there are no plausible explanations.
- In order to transmit the IK aspect of the integrated IKS-SCIE curriculum, the pedagogic tool of choice proposed here is the Contiguity Argumentation Theory (CAT).
- CAT has the capacity to deal with both the scientifically logical arguments and the non-logical metaphysical arguments that form IKS (Ogunniyi, 2007).

Methodology

- This study adopted the interpretive paradigm which is located in the constructivist tradition .
- Following the study on the integration of IK on the college agricultural college curriculum, the researcher made lesson observations on how the lecturers were integrating IK in their lessons.
- Realizing that not much was done on this aspect due to lack of appropriate pedagogical approaches, the researcher held a mini workshop on the use of the argumentation instructional strategy.

SAMPLE AND SAMPLING TECHNIQUES

- Four college lectures were purposively sampled to be part of the study due to their knowledge of IK.
- Four college learners were randomly selected from a final year class.
- Pre and post argumentation interview protocols were prepared for both college lecturers and college learners.
- Only one lecturer who had applied the argumentation instructional strategy in her lessons was considered for the post-argumentation interview.
- In this study a total of 13 interviews , both learners and lecturers were conducted in order to ensure credibility and trustworthiness.

FINDINGS

Table 1. How and why lecturers use IK in their lectures.

CATEGORY	EVIDENCE FROM INTERVIEWS
- Explain some new concepts	Nxumalo: At times I use IK in my lessons to explain new concepts.
- Give alternative methods	Nxumalo and Masuku: To give alternative methods to science that are used by communal farmers.
- Broaden the knowledge scope	Zhou: At times I use IK as to broaden the information base of the learners
- Enhance understanding	Zhou: To help learners understand faster, starting with the known practices from their homes Siziba: This assists learners to understand the scientific methods better.

FINDINGS

- The lecturers' responses did not provide a preferred teaching pedagogy.
- What came out strongly was that IK was used to as a tool for enhancing the understanding of the western scientific knowledge better.
- Analysing their responses, one emerges with the view that IK in agricultural colleges is used as a mere translation tool and is a superficial appendage to the western science based knowledge.

Table 2: Perceptions of IK and Science from learners before the intervention of Argumentation instructional strategy.

PERCEPTIONS	EVIDENCE FROM LEARNERS' INTERVIEW EXTRACTS
Independent concepts from science	I see the IK and science as two independent concepts that are not related as our lecturers just mention IK in passing (Musa)
Cultural recognition	When IK is introduced in our lessons, I feel excited and ready to learn as this touches on what I know and has some cultural value to me (Bongani)
Irrelevant in today's context	At times I think IK is just mentioned for the sake of it as I don't know where to apply it during my studies or even after school as everyone is concerned with scientific explanations and applications. (Zenzo)
Enhance understanding of science concepts	At time lecturers use IK to help us understand the scientific concepts, thereafter not much is said about IK in our lessons (Zanele)

LEARNERS' PERCEPTIONS CONTINUED

- The learners viewed IK and Science as two independent systems that are not related.
- The lectures just use IK for helping learners understanding science.
- Learners indicated that they do not see the relevance of IK in today's context.

Table 3: Learners’ perceptions of IK in the curriculum after the Argumentation instructional strategy.

PERCEPTION	EVIDENCE FROM THE INTERVIEW EXTRACTS
Complementary concepts	Musa – I see the two systems as complementing each other. This gives me a broader and deeper understanding of the taught content.
Cultural Capital	Bongani – The inclusion of IK in lessons brings recognition to my cultural practices and shows that all what I have learnt and practiced at home is not put to waste, as it helps me to understand and appreciate agriculture in a diversified way. Learning becomes meaningful and beneficiary.
Applicable to our present context	Zenzo – Areas of IK application both in the classroom environment and after college life are demonstrated, showing that on daily basis IK is readily applicable.
Enhances complete learning	Zanele – IK simplifies and concertizes the learning of scientific concepts, it helps me to move from the known every day practices and enables me to fully informed meanings and explanations to the content under study – Beneficial learning

LEARNERS' PERCEPTIONS AFTER THE USE OF D.I.A.

- The learners now saw IK and Science as complementary systems, learning from each other, affording them a broader and deeper understanding of the concepts.
- This makes the learners to be critical thinkers as observed by Govender (2012).
- Learners now readily recognize the applicability of IK both to their studies and outside the college.
- Learners highlighted the creation of peer to peer learning opportunities which greatly foster the learning experiences of all the learners.

Table 4: LECTURERS' PERCEPTIONS AFTER USING THE D.I.A.

PERCEPTION	EVIDENCE FROM INTERVIEW EXTRACT
Activates the learner	The learner shifts from being a passive and to be in control of his/her learning activities. All the learners were actively involved in pairs and groups as well as individuals.
Ability and confidence to professionally articulate and defend positions	This strategy enables the learner to be able to defend and articulate their position to other learners through offering substantiated arguments and evidences to their constructed concepts.
Change of classroom roles	The other interesting aspect of this strategy is that it allows for a smooth change of classroom roles, where the learners become teachers and teacher's learners and this leads to deeper and productive classroom interactions.
Knowledge creation	Besides leading to effective teaching learning this strategy enables creation and validation of new knowledge in the classroom.

LECTURERS' PERCEPTIONS AFTER USING THE D.I.A.

- The dull and monotonous teaching and learning became exciting and interactive with all learners actively sharing home practices.
- The lecturer expressed great satisfaction at the way the learners gained confidence in articulating their views. Jegede, (1999).
- Besides the improved learning outputs, the use of DIA led to the creation and validation of knowledge in the class.
- The approach easily facilitates the role changes in the class.

Composite perceptions of lectures and learners

Broad perceptions

Sub-perceptions

Empowering

→ Activates the learner

→ Enables classroom role changes

→ Builds confidence and ability

Cultural Recognition

→ Complementary to science

→ Embraces cultural practices

Knowledge creation

→ Enhances complete learning

→ Applicable to our present context

COMPOSITE PERCEPTIONS OF LETURERS AND LEARNERS AFTER D.I.A.

DIA is a worthwhile approach that leads to the recognition of the learners' culture in his/her learning making the learner empowered to participate in the knowledge creation process in the class.

The approach lends itself to cultural acceptance as it recognizes the learner's culture.

COMPOSITE PERCEPTIONS OF LECTURERS AND LEARNERS AFTER D.I.A.

- Enables the learners to easily apply the taught content in their daily activities for the betterment of their communities.
- Both the learners and lecturers are of the opinion that this approach facilitates the creation of new knowledge that can further enhance community development and the scholarly upgrading of both the learner and the lecturer.

CONCLUSIONS AND RECOMMENDATIONS

The study established that this method is very effective and should be encouraged as a pedagogy of choice in the integration of IK into the agricultural curriculum.

Promoting dialogical argumentation instructional mode among learners and between lecturers and learners could be one way in which meaningful relationships could be developed. Ogunnyi (2017) noted how learner-learner questioning established rapport among peer learners that promoted the understanding of the curriculum content.

CONCLUSIONS AND RECOMMENDATIONS

- Such a practice is in line with Odora (2002) who posits that, culture is not transmitted genetically but its learnt.
- Similar strategies could be adopted in the college especially if lecturers deliberately provide appropriate guidance to promote conducive interactions in the lecture rooms.
- The lecture rooms offer an excellent setup for such learning, particularly where the college learners are willing to share their lived and knowledgeable experiences.



Thank you.

Siyabonga.