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EXPLORING TEACHERS UNDERSTANDING OF THE CONCEPTION OF INDIGENOUS GAMES IN TEACHING MARKET STRUCTURES IN THABO-MOFUTSANYANE EDUCATION DISTRICT, FREE STATE, SOUTH AFRICA

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ABSTRACT

This article examines how teachers conceptualise indigenous games (IG) when using them to teach market structures in secondary school Economics classrooms. Drawing on Social Constructivist Theory, the article argues that indigenous games are not merely recreational activities but culturally grounded pedagogical tools that can support learners' understanding of abstract economic concepts such as competition, firm behaviour, interdependence, and strategic decision-making. Six Grade 11 Economics teachers were purposively selected from three secondary schools, three males and females respectively. Using an interpretive qualitative case study design, data were generated through semi-structured interviews in three rural secondary schools in the Thabo-Mofutsanyane Education District, Free State, South Africa. Thematic analysis revealed that teachers' conceptions of indigenous games clustered around three interrelated ideas: indigenous games as African cultural heritage, as informal yet structured learning tools, and as locally sourced educational resources suitable for under-resourced contexts. The findings suggest that teachers' understanding of indigenous games shapes how effectively these games are translated into meaningful curriculum mediation, particularly within the CAPS Economics framework.

KEYWORDS

Indigenous Games, Market Structures, Economics Education, Social Constructivist Theory, Rural Schooling, Culturally Responsive Pedagogy

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Introduction

Learners in secondary school Economics frequently experience difficulty understanding market structures because the topic requires abstract reasoning about competition, firm decisions, and market behaviour. In many classrooms, teaching still relies heavily on lecture-based explanations and textbook descriptions, which often promote memorisation rather than deep understanding. These limitations are intensified in rural and under-resourced schools, where learning resources are scarce and pedagogy is less likely to draw on learners' lived experiences. In response to these challenges, culturally responsive teaching approaches have gained increased attention, particularly those that utilise indigenous knowledge practices as learning resources.

Indigenous games represent one such practice. While they are often misunderstood as informal recreation, recent scholarship increasingly recognises them as situated learning tools that embody cultural knowledge, cooperation, logic, and social interaction (Mosimege, 2020; Lukong & Mbuwir, 2024). In African contexts, indigenous games are deeply rooted in community life and are transmitted across generations, which means learners often enter the classroom already familiar with their rules, strategies, and social meanings. This familiarity can be pedagogically powerful because it allows teachers to begin from what learners know and use culturally meaningful experiences to scaffold new economic concepts.

Studies across African educational contexts show that integrating indigenous games into learning increases learner engagement and conceptual retention when compared to purely traditional teaching approaches (Tachie & Galawe, 2021; Moloi et al., 2021). However, the majority of existing research has focused on subjects such as Mathematics, Language, and Environmental Studies, leaving a noticeable gap in Economics education (Moyo & Chinamasa, 2022). This gap is significant because economic learning often requires learners to visualise interactions and consequences, processes that can be simulated naturally through game dynamics such as turn-taking, rule-based competition, negotiation, and strategic choice (Van Wyk, 2013; Nkonyane & Van Wyk, 2015). Understanding how teachers conceptualise indigenous games is therefore an important step in clarifying how such games can be legitimately positioned within Economics teaching and curriculum outcomes.

Research problem

Despite the central position of market structures in the secondary school Economics curriculum, many learners continue to struggle to understand core concepts such as competition, firm behaviour, interdependence, and strategic decision-making. These concepts are inherently abstract and are often taught through lecture-based instruction, textbook explanations, and graph-centred demonstrations that emphasise memorisation rather than deep conceptual understanding (Van Wyk, 2013; Nkonyane & Van Wyk, 2015). The challenge is further intensified in rural and under-resourced schooling contexts, where limited teaching resources, large classes, and reduced exposure to contextualised pedagogies constrain meaningful engagement with economic content (Moyo & Chinamasa, 2022; Matsekoleng et al., 2022). As a result, learners frequently fail to connect theoretical market processes with real-life experiences, leading to superficial learning and persistent misconceptions.

In response to these pedagogical limitations, indigenous games have emerged in educational scholarship as culturally grounded tools capable of mediating abstract knowledge through experiential and participatory learning (Mosimege, 2020; Lukong & Mbuwir, 2024). Indigenous games embody elements of competition, cooperation, negotiation, and strategic thinking, dynamics that conceptually mirror market interactions. Studies across African contexts show that integrating indigenous games into classroom practice enhances learner engagement, motivation, and conceptual retention compared to purely traditional teaching approaches (Tachie & Galawe, 2021; Moloi et al., 2021). However, most of this research has concentrated on subjects such as Mathematics, Languages, and Environmental Studies, leaving a noticeable gap in Economics education (Moyo & Chinamasa, 2022; Maimela et al., 2024).

More critically, existing literature has paid insufficient attention to how teachers themselves conceptualise indigenous games as pedagogical resources. Teachers' conceptions are pivotal because they shape instructional choices, classroom integration, curriculum alignment, and the extent to which indigenous games are translated into meaningful learning tools (Tangkur et al., 2022; Matsekoleng et al., 2022). Where teachers perceive indigenous games merely as recreational or motivational activities, their pedagogical value may remain underutilised. Conversely, when teachers view them as structured, culturally meaningful

knowledge systems, they are more likely to integrate them purposefully to support conceptual development and scaffold abstract reasoning (Vygotsky & Cole, 2018; Omotayo & Adeleke, 2017).

Therefore, the research problem underpinning this study lies in the limited empirical understanding of how Economics teachers conceptualise indigenous games in relation to teaching market structures, particularly within rural South African classrooms. Without this understanding, attempts to integrate culturally responsive pedagogies into Economics education remain fragmented, lacking both theoretical grounding and practical guidance (Mosimege, 2020; Lukong & Mbuwir, 2024). This study therefore seeks to address this gap by exploring teachers' conceptions of indigenous games and examining how these conceptions influence their pedagogical use in mediating market structure content within the CAPS Economics framework.

Research question

This article is guided by the following research question:

- How do Economics teachers conceptualise indigenous games in relation to teaching market structures?

To provide a comprehensive understanding of this phenomenon, the main question was explored through the following sub-questions:

- How do Economics teachers understand indigenous games as part of African cultural heritage when teaching market structures?
- How do Economics teachers use indigenous games as informal but structured learning tools to teach market structures?
- How do Economics teachers view indigenous games as locally available resources for teaching market structures in under-resourced classrooms?

Literature review

African cultural origin

There is a common misunderstanding that indigenous games are only informal activities for fun. However, education scholars now recognise them as structured learning tools that promote cultural knowledge, cooperation, and social interaction (Mosimege, 2020; Lukong & Mbuwir, 2024). Because these games come from African cultural contexts, they connect well with learners' local experiences and allow them to build on what they already know from home to support formal learning. Ali and Tangkur (2023) describe indigenous games as culturally authentic experiences that bridge Western-dominated schooling with learners' cultural backgrounds, creating an active and familiar learning space. Similarly, Ekeh (2024) argues that indigenous play goes beyond ordinary social activities; it is an educational tool that develops logic, hard work, and reasoning skills within a culturally organised system.

Recent research confirms that the cultural heritage of IG provides powerful sites for starting educators with learners' lived worlds, providing a wealth of pedagogical strategies for making abstract academic concepts concrete. For example, Tachie and Galawe (2021) demonstrated that learners' conceptual retention as well as enthusiasm increased significantly compared to those in traditional teaching when learners engaged with mathematics patterns using culturally available games. Similarly, Lukong and Mbuwir (2024) established African IG to influence cognitive development and logical reasoning in adolescents by correlating local play traditions to formal academic concepts.

Moyo and Chinamasa's (2022) research indicated a prevailing concentration on mathematics, language and environmental studies. This focus revealed a notable deficiency in understanding how culturally specific games are interfaced within economics education. By integrating economic instruction into tools with which communities are used to work reflectively or intuitively, it demonstrates how participation in communal narratives, social bargaining and local cultural logics can be employed to support learners' understanding of market systems and economic rationalities (Van Wyk, 2013; Tangkur et al., 2022; Maimela et al., 2024).

Informal learning tools

As informal learning methods as well as rule-governed objects of experience, IG, including *Morabaraba* and *Diketo*, promote memory, sequencing, turn-taking and strategic thinking that traditional schooling should incentivise routinely (Moloi, 2020; Ekeh, 2024). Research in development studies suggested that IG, although having a playful facade, has a structured pedagogy. Their orientation towards cognitive development is

reflected through explicit rules, repeatable sequence, and cumulating challenges (Badiger, 2020; Gonzalez, 2021) as well as a receptive audience who could learn (Hadebe-Ndlovu, 2022). Studies in classrooms across the African context demonstrated improvements in pattern recognition, counting, and problem-solving when IG are incorporated into teaching practice (Moloi et al., 2021; Olanrewaju, Suleiman & Abdulkareem, 2021). The result resonates with the social-constructivist perspective, where learning is mediated by guided participation and culturally relevant tools (Vygotsky & Cole, 2018; Omotayo & Adeleke, 2017).

Findings from the current study add to this understanding by showing that when teachers intentionally used these games in lessons, learners did not just participate, they stayed focused for longer, worked together, and remembered the steps of tasks better. The clear rules of Morabaraba and Diketo created organised learning spaces where learners discussed ideas, corrected each other, and improved their strategies through repeated play. This supports development studies which show that learners build skills over time through practice and guided support (Badiger, 2020; Gonzalez, 2021). In addition, the social interaction that happens during gameplay reflected guided participation, where learners build knowledge together using familiar cultural activities, as explained in social constructivist theory (Vygotsky & Cole, 2018; Omotayo & Adeleke, 2017). Similar to findings from other African classroom studies, learners in this study showed better logical sequencing, pattern recognition, and group problem-solving when indigenous games were used to organise learning (Moloi et al., 2021; Olanrewaju, Suleiman & Abdulkareem, 2021).

Furthermore, the findings show that these informal learning activities also help learners move their understanding into formal Economics learning. The organised moves and repeated rounds in the games helped learners practise decision-making, see the gains and costs of their actions, and turn step-by-step play into simple graph ideas. In this way, what learners did in the games helped them understand formal economic thinking (Van Wyk, 2013; Nkonyane & Van Wyk, 2015; Arsaythamby & Julinamary, 2014; Bursal & Polat, 2020). When these games were linked to the CAPS curriculum, they helped learners connect their play experiences to assessed market concepts (DBE, 2011; Msimanga, 2020; Ogbonnaya, 2022, 2024). However, using this approach successfully over time depended on teachers having the right knowledge, enough teaching resources, proper training, and practical teaching examples to guide how indigenous games are used in Economics lessons (Tangkur et al., 2022; Maimela et al., 2024; Matsekoleng et al., 2022).

Locally sourced educational resources

Games played by indigenous people are not only cognitively beneficial, but they are cost-effective and locally available educational tools which would be useful in rural and township schools where there is a lack of technology resources (Moloi, 2020; Mosimege, 2020; Badiger, 2020). A consistent theme that has emerged in the literature in underfunded educational environments is the lack of quality teaching materials and interactive learning tools. For example, both Matsekoleng et al. (2022) and Moyo and Chinamasa (2022) point out that in rural and peri-urban schools, manipulatives or digital resources are often unavailable to support active learning. As a result, teachers draw from low-cost innovations such as bottle-top counters, pebbles, or any available materials to generate interest in conceptual understanding. Similarly, Moloi et al. (2021) affirm that IG, such as *Kgati* and *Diketo*, have the potential to support mathematical and reasoning learning in a contextually meaningful manner while they also provide zero-cost resources for linking home and school life.

According to scholars such as Hadebe-Ndlovu (2022) and Gonzalez (2021), locally found play resources possess cultural capital, which promotes learner identity and belonging, making the scarcity of resources an opportunity to learn pedagogically. An approach akin to that of Van Wyk (2013) and Nkonyane and Van Wyk (2015) is where interactive participatory methods using the type of everything materials would enable that market interaction as well as elasticity, consumer behaviour and so forth, in economics become learner-friendly. In this light, the IG are not only strategic pedagogical tools but potential teaching aids and artefacts that can be sustained even outside of an instructional event because they materialise or have direct embodiment and entrenchment for use in the non-presence of technological teaching aids (Ekeh, 2024; Lukong & Mbuwir, 2024). Most importantly, this study contributes to the conversation by placing these games within the context of a traditional economics class that uses them as components in learning about content such as revenue curves, elasticity and profit. It provides a cheap, replicable method by which local game dynamics can be harmonised with CAPS requirements.

Theoretical framework

This study was guided by Social Constructivist Theory (SCT), developed by Lev Vygotsky (1978), as its theoretical framework. SCT is built on constructivism, a theory first associated with Piaget in 1972, which was later expanded by Vygotsky in 1978 into a socially grounded model of learning (Muhammad, 2021). Vygotsky emphasised that learning occurred through interaction within a socio-cultural environment, where knowledge was shaped by historical and cultural experiences (Mohammed & Kinyo, 2020). Within the South African context, the implementation of the economics curriculum often overlooks these cultural dimensions, making SCT particularly relevant to this study, which sought to use IG to bridge the gap between abstract concepts and learners' lived realities.

The key principles of SCT, social interaction, the Zone of Proximal Development (ZPD), the More Knowledgeable Other (MKO), and scaffolding, frame how learning was understood in this study (Vygotsky & Cole, 2018). These principles assume that learners acquire knowledge not in isolation but through collaboration with teachers, peers, and cultural tools (Mohammed & Kinyo, 2020; Van Hover & Hicks, 2017). Through this interaction, learners gradually develop a deeper understanding, with teachers or peers initially guiding them before withdrawing support as learners achieve independence (Zajda & Zajda, 2021). Applied to this study, these principles highlighted how IG could be used to create culturally relevant learning spaces where learners actively engaged with economics concepts through guided participation and collaborative problem-solving.

Several scholars affirmed that SCT provided a strong foundation for contextualised, cooperative learning. Omotayo and Adeleke (2017) argue that learners must actively engage in constructing knowledge, while Muhammad (2021) emphasises that understanding emerges from shared experiences and collaboration. SCT allowed teachers to connect learners' prior knowledge with new concepts by adjusting levels of support, modelling skills, and adapting activities to learners' needs (Lui, 2012; Vygotsky & Cole, 2018). In the economics classroom, this implies that teachers could integrate IG, such as *Morabaraba*, *Kgati,* and *Diketo*, as culturally familiar tools to scaffold learners' understanding of market structures. By fostering dialogue, peer interaction, and guided exploration, teachers create conditions for learners to tackle more complex tasks than they could achieve alone (Mwinsa, 2024). Thus, SCT was employed in this study both to interpret how IG facilitated learning and to evaluate whether such methods confirmed or challenged existing theoretical assumptions about teaching economics.

Method

Research approach

The study adopted the interpretive qualitative research approach as proposed by Merriam (2002). According to Merriam (2009), four distinct qualities defined qualitative research, which also applied to qualitative case studies: "holistic," "empirical," "interpretive," and "emphatic." Merriam and Grenier (2019) explain that interpretive research relies on researchers' intuition and views research as an interaction between the researcher and the subject. This approach is consistent with constructivist epistemology. The methodology allowed the researcher to collect in-depth data (Merriam, 2009) from participants regarding the utilisation of indigenous games for teaching market dynamics in an economics class. The research design was derived from the interpretive qualitative case study approach advanced by Merriam and Tisdell (2016). This design offered a comprehensive and detailed account, investigation, and elucidation of the research.

Research design

A case study was adopted as the research strategy guiding this study (Yin, 2017). Yin (2017) defined a case as "a contemporary phenomenon within its real-life context, especially when the boundaries between a phenomenon and context are not clear, and the researcher has little control over the phenomenon and context" (p. 13). Yin (2018) suggested four types of designs that case study researchers could make use of. These include single-case design, embedded single-case design, multiple-case design, and embedded multiple-case design. This study used an embedded single-case design (Yin, 2017; Merriam, 2009). When using an embedded single-case design, one unit of analysis and sub-units are incorporated into the design. A case could therefore be a person, a program, a group, a specific policy, and so forth, which incorporates sub-units (Yin, 2017).

The unit of analysis used for this study was three secondary schools in the rural village of Thabo-Mofutsanyane Education District, Free State, with different schools and teachers in the FET phase serving as

sub-units, based on the use of IG to teach market structures in economics. The study adopted SCT as it considers the learning environment, namely the classroom, as the unit of analysis due to its role as the central convergence point for teachers and learners (Yin, 2018). According to Kumatongo and Mutaza (2021), this approach aligns with the selected theoretical framework, enabling direct observation of the classroom lived experiences of both the teachers and learners involved in teaching market structures using IG and of learning acquisition by the learners. Importantly, this design facilitated the researcher's engagement with participants in their natural environment to obtain a holistic image of the case being studied (Stake, 2005). The schools were selected as they were situated in a rural area where IG were still commonly played by learners.

An interpretive case study (ICS) was deemed suitable, as suggested by Merriam (2009) and Maree (2009), for determining the content that was embedded in the IG and for examining how these games could be used to teach market structures in economics. The ICS enabled the researcher to obtain in-depth information (Yin, 2018; Cohen, Manion & Morrison, 2011) on how IG could be used to teach market structures. In line with Stake (2005), when using an interpretive case study, the phenomenon was investigated as a bound system; therefore, the boundaries in this study involved a group of six economics teachers who were selected from three secondary schools.

Sampling

The study judiciously adopted a purposive sampling technique (Yin, 2018). The participants were purposefully selected, based on the rich information they possessed about the subject under investigation (Ngwenya & Shange, 2019). A small number of participants were chosen to obtain in-depth information regarding the research questions of the study (Yin, 2017). Six Grade 11 Economics teachers were selected from three secondary schools, three males and females respectively. Therefore, a total of six participants were purposefully selected to partake in the study, drawn from three secondary schools in the Thabo-Mofutsanyane Education District, Free State, South Africa. The demographic profile of participants reflected diversity in teaching experience, class size exposure, and professional background relevant to the study focus. These are presented in Table 1 below:

Table 1: Demographic profile of the participants

Participant Code	School Context	Years of Experience	Gender	Highest Qualification
SAT1	School A (Rural)	12	Male	B.Ed. Honours (Economics Education)
SAT2	School A (Rural)	7	Female	B.Ed. (Senior Phase & FET)
SBT3	School B (Semi-rural)	10	Male	PGCE (Economic & Management Sciences)
SBT4	School B (Semi-rural)	5	Female	B.Com + PGCE
SCT5	School C (Urban)	8	Male	B.Ed. (EMS, Economics Major)
SCT6	School C (Urban)	15	Female	M.Ed. (Curriculum Studies)

The participants for the study were selected based on their characteristics and decision to produce a sample that met the requirements for inclusion. The teachers' criterion for inclusion was presenting lessons based on market structure content and IG, while the learners played a key role in providing their understanding and comprehension of the lessons presented, thereby ensuring accurate, reliable, and rich first-hand knowledge (Stake, 2005). Through purposive sampling, the researcher ensured that participants possessed relevant knowledge and information about the phenomenon under investigation (Yin, 2017; Cohen et al., 2011). Therefore, the selected schools were chosen to provide participants who knew a variety of IG played in their rural setting, and who also possessed a deeper knowledge of the subject of economics, specifically the teaching of market structures.

Data collection

Data were collected through semi-structured interviews (Yin, 2017; Ngwenya & Hlophe, 2021; Ngwenya & Shange, 2019). The researcher commenced by collecting the market structure content that could be taught through the identified IG. This was followed by structured classroom observations, during which the researcher observed the teachers' lesson presentations to examine how the identified IG were used to teach

specific market structure content. Semi-structured interviews ensued, derived from the study's research questions: How do Economics teachers understand indigenous games as part of African cultural heritage when teaching market structures? How do Economics teachers use indigenous games as informal but structured learning tools to teach market structures? How do Economics teachers view indigenous games as locally available resources for teaching market structures in under-resourced classrooms?

Semi-structured interviews involved exploring predetermined areas of interest while allowing for prompts to guide the conversation (Merriam, 2009; Ngwenya & Hlophe, 2021). This method enabled the researcher to engage participants openly, allowing them to share their feelings, experiences, and perspectives regarding the use of IG in teaching market structures (Stake, 2005; Ngwenya & Shange, 2019). The semi-structured interviews were conducted using the interview schedule (Yin, 2017; Hadebe-Ndlovu, 2022). Participants were informed that they could withdraw from the study at any time if they felt their rights were infringed upon in any way.

Data analysis

The study employed thematic analysis to interpret qualitative data collected through semi-structured interviews. This method allowed the researcher to systematically identify and categorise recurring patterns and insights across all data sources, consistent with qualitative research principles outlined by Merriam and Tisdell (2016) and Yin (2017). First, interview transcripts were transcribed verbatim, while observation field notes and teaching documents were organised and reviewed for relevance to the study's objectives. Second, initial codes were generated based on participant responses and observed instructional practices using an inductive coding process (Merriam & Grenier, 2019). Third, these codes were grouped into meaningful categories and synthesised into overarching themes such as curriculum alignment, game-based conceptual modelling, and integration of Indigenous games.

Data source triangulation was applied by interviewing six Economics teachers drawn from three different schools (School A, School B, and School C). This approach created variation in school context and teaching experience, enabling the researcher to compare whether similar conceptions of indigenous games, as African cultural heritage, informal yet structured learning tools, and locally sourced educational resources were consistently expressed across participants and across sites. The convergence of responses across teachers from different schools strengthened the credibility of the findings, as the emerging themes did not rely on the views of a single participant or a single institutional setting but were corroborated across multiple educational contexts.

Ethical considerations

Ethical considerations refer to the principles that guide responsible and respectful research practice. This study was conducted in full compliance with institutional and professional ethical standards to protect participants' rights, dignity, and cultural values. Ethical clearance was obtained from the Turfloop Research and Ethics Committee (TREC/1567/2024:PG), and permission to conduct the study was granted by the Free State Department of Basic Education. Informed consent was secured from all teachers, while parental consent and learner assent were obtained for learner participation. Participation was voluntary, with participants free to withdraw at any stage without penalty. Confidentiality and anonymity were ensured through the use of pseudonyms and coded identifiers, and all data were securely stored. Participants were treated with respect and cultural sensitivity, particularly when engaging with indigenous games, and care was taken to minimise classroom disruption. The study was guided by the ethical principles of beneficence and non-maleficence, ensuring that the potential educational benefits outweighed any minimal risks associated with participation.

Findings

These section presents the findings of the study which emerged from the interviews with economics teachers about understanding the conception of indigenous games in teaching market structures. The findings revealed that teachers held a clear and multifaceted understanding of IG, recognising their cultural, educational, and pedagogical value in economics classrooms. Their responses were categorised into three themes that collectively reflect a deep appreciation for the role these games play in both learning and cultural preservation. The subsequent themes and key-related codes are presented in Table 2 below:

Table 2: Themes and key-related codes

Theme	Key-Related Codes
African cultural origin	Rooted in African communities Passed down through generations Oral tradition transmission
Informal learning tools	Structured gameplay Known rules Planning moves
Locally sourced educational resources	Use of stones and ropes Suitable for under-resourced schools Cost-free learning materials

Sub-theme 1: African cultural origin

Participants were asked to explain their understanding of what IG are and where they originate. This sub-theme emerged from responses showing that teachers recognised IG as traditional activities rooted in African culture and passed down through generations. Reflecting this cultural grounding, Participant SAT2 expressed the following view:

"These games are locally developed and rooted in African communities. They're passed on through oral tradition. When we use them in education, we tap into the cultural knowledge that learners already have. It makes the content familiar and shows respect for their heritage."

Participant SBT3 reinforced this connection to lived experience, noting:

"Indigenous games are part of learners' everyday lives. They come from their communities, play with family and friends. So, when they see them in the classroom, they feel comfortable; it's something they know and understand."

The findings revealed that teachers viewed IG as deeply embedded cultural practices that are integral to African traditions and community life. These games are familiar to learners, often played within families and social groups, which makes them meaningful and engaging in the classroom context. By integrating these culturally grounded games into lessons, teachers transformed them from mere recreational activities into collaborative learning experiences. Learners' prior familiarity with the games fostered a socially rich environment where knowledge could be co-constructed through dialogue, participation, and shared problem-solving, reflecting the social interaction emphasis of SCT. The use of culturally relevant practices helped bridge the gap between learners' everyday experiences and formal academic content, enhancing engagement and comprehension.

The role of the more knowledgeable other (MKO) was strongly evident in the teachers' approach. Teachers positioned themselves as facilitators who mediate the connection between learners' cultural knowledge and the abstract concepts of the economics curriculum. For instance, when SAT2 emphasised that these games are "passed on through oral tradition," it illustrated the teacher's function in guiding learners to translate familiar social practices into formal economic reasoning. Moreover, learners themselves could temporarily assume the MKO role, sharing insights from their community experiences with peers, thereby supporting reciprocal knowledge construction. This dynamic demonstrates how learning is not unidirectional; teachers and learners engage in a mutual exchange, combining cultural familiarity with conceptual scaffolding to deepen understanding.

The findings also highlighted the operation of the Zone of Proximal Development (ZPD) and scaffolding. By embedding economics concepts within games that learners already understood, teachers created a safe and familiar learning space in which learners could extend their reasoning from known cultural practices to abstract economic ideas, such as demand, supply, and market dynamics. The structured nature of the games provided

initial scaffolds, offering visual, physical, and cognitive cues to support learning. As learners gained confidence and competence, teachers gradually reduced their guidance, enabling learners to apply reasoning independently to formal tasks like graphing, analysing definitions, and solving textbook problems.

Sub-theme 2: Informal learning tools

Teachers were asked how they felt about IG being used as an educational tool. SAT1 noted the informality of using them:

"Indigenous games are non-inventable in schools, but structured. Morabaraba, for example, has straightforward rules and some strategy; it is about planning and thinking against your opponent. It is what learners do; that's how economics *works."*

Another participant, SCT6, expressed this notion of implicated structure:

"Although these are not formalised games like classroom activities, they have shared knowledge. The rules are known to learners, and they follow a pattern. There is structure; it's just not on paper."

The findings revealed that teachers perceived IG as bona fide educational tools, although they are derived from informal sources, pointing to the fact that *Morabaraba* is highly structured and follows specific known rules, strategies and logical steps. This view correlates with the social interactionist principle of shared rules and strategies that allow learners to interact in a communicative process through dialogue, contention, and cooperative problem solving. Learners playing in these games cooperatively make sense, creating a dynamic social space that replicates the collaborative forces of participation and negotiation central to social learning. The utilisation of familiar and structured games enables learners to link home-based, culturally embedded practice with school economic reasoning and increases engagement and comprehension.

The notion of the more and less knowledgeable other (MKO) is present in teachers' use of emergent knowledge from within gameplay. Although the games had their own internal set of strategies and logic, teachers served as MKOs by making explicit the connection between game-like rules and fights to an understanding of formal economic concepts. For example, in SAT1, anticipation of the other person's move in *Morabaraba* was likened to taking strategic decisions in economics and thus connecting a cultural practice with discipline knowledge. Meanwhile, advanced/competent game players can temporarily take the MKO role, leading classmates to strategies and reinforcing peer learning. This dynamic process is consistent with social constructivist theory that knowledge is constructed through collaboration with the MKO.

The roles of ZPD and scaffolding in learning are also emphasised. The games were familiar and arranged activities which placed learners in their ZPD, allowing them to advance beyond the known game rules and strategies operating at a concrete game level and into higher-order reasoning with more abstract economic concepts like market behaviour, elasticity, or competition. Teachers leveraged the intrinsic structure of the games as scaffolds, offering support initially via guided exploration and explicit connection between gameplay and economic reasoning. With growing learners' confidence, this support was modified or faded out by educators to enable the learners to internalise and independently apply logic in graphs, problem-solving tasks and theoretical discourse.

Sub-theme 3: Locally sourced educational resources

Teachers praised the affordability and accessibility of IG. To highlight this practical value, Participant SBT3 remarked:

"The best part is these games don't require expensive equipment. We use stones, ropes, or even our hands. They're accessible to all learners, even in under-resourced schools."

Another participant, SCT5, amplified this benefit by drawing attention to resource constraints:

"Diketo uses stones; you don't need to buy anything. That's important in rural schools where budgets are limited. With these games, learning doesn't stop because of a lack of resources."

The findings revealed that teachers valued IG highly for their affordability and accessibility, emphasising that games such as *Diketo* can be played with simple, locally available materials such as stones or ropes. This aligns closely with the principle of social interaction in SCT as the simplicity and inclusivity of these games enable all learners, regardless of economic background, to participate. By engaging collectively in gameplay, learners co-construct knowledge through shared experiences, dialogue, and collaboration, creating a socially rich learning environment. The participatory nature of the games reflects Vygotsky's emphasis on learning as a socially mediated process, where understanding is developed through interaction within the group.

The principle of the more knowledgeable other (MKO) is evident in how teachers leveraged the accessibility of these games to facilitate learning in resource-constrained contexts. By adapting everyday items into instructional tools, teachers acted as MKOs, modelling problem-solving, innovation, and linking cultural practices to formal economic concepts. Simultaneously, learners who were already familiar with these games could assume the MKO role by guiding peers through rules and strategies, demonstrating that knowledge flows bidirectionally. This dual participation emphasises the dynamic, reciprocal nature of social constructivist learning, where both teachers and learners mediate understanding.

Affordability and accessibility also reflect the ZPD, as learners can engage without material barriers, focusing their cognitive effort on understanding complex economics concepts rather than on logistical challenges. The games provide a culturally familiar and low-cost entry point, allowing teachers to scaffold learning by connecting simple, observable actions, such as counting and sequencing in *Diketo,* to abstract ideas like demand curves or resource allocation.

Discussion of findings

This section provides a comprehensive discussion of the study's findings on the use of IG to teach market structures in economics classrooms within rural South African schools. The discussion is organised according to the three key themes derived from the research questions.

African cultural origin

The findings indicate that teachers regard indigenous games (IG) as culturally authentic, generationally transmitted practices that carry meaning beyond the classroom. By integrating IG into Economics teaching, particularly to explain market structures, teachers incorporated learners' lived experiences into the curriculum. Learners recognised the games, felt comfortable with their familiarity, and engaged more actively in lessons. The cultural grounding of these games enabled learners to connect abstract economic concepts with everyday experiences, thereby strengthening conceptual understanding. The significance of cultural origin in learning aligns with findings from recent empirical studies. For instance, Tachie and Galawe (2021) found that incorporating traditional games into classroom instruction enhanced learners' engagement and improved conceptual understanding because content was presented through culturally familiar practices. Similarly, Moyo and Chinamasa (2022) established that integrating local games into Mathematics and Economics teaching provided a bridge between learners' home experiences and formal academic content, facilitating meaningful knowledge construction.

In contrast, Ekeh (2024) suggests that while teachers acknowledged the cultural significance of IG, a lack of formal guidelines sometimes limited their pedagogical application. This contrasts with the present study, where teachers actively integrated these games into lesson planning. Likewise, the empirical findings of Lukong and Mbuwir (2024) and Maimela et al. (2024) are consistent with this study's observations on cultural retention and conceptual grasp. In both studies, learners who engaged in culturally situated activities internalised complex concepts more proficiently (cf. Naidoo & Mabaso, 2023). This result also extends to Economics education by affirming that linking market structures with culturally resonant games such as Morabaraba deepens learners' understanding (Ali & Tangkur, 2023). Nonetheless, divergence is notable when comparing these results with broader literature. Prior research has often viewed indigenous games as supplementary to learning, motivational tools or cultural artefacts—rather than integrated instructional frameworks. Van Wyk (2013) and Mosimege (2020) found that many teachers perceived IG as peripheral rather than as formal tools for conceptual development. In contrast, teachers in this study positioned these games at the core of their instructional practices in Economics. Although Tangkur et al. (2022) caution that cultural content must be balanced to avoid limiting exposure to broader knowledge systems, such limitations were not observed in this study. Instead, cultural framing served as an entry point for abstract reasoning.

Informal learning tools

Teachers observed that indigenous games are not formally embedded within the education system, yet they operate through established conventions and rules. Despite lacking formalised documentation, these games demand strategic thinking, spatial reasoning, and sequential decision-making. For example, Morabaraba requires tactical thinking and mental modelling of spatial relationships, cognitive processes closely aligned with microeconomic reasoning such as firm strategy, consumer behaviour, and market interaction. Research supports the cognitive value of informal learning tools. Moloi (2020) discovered that culturally embedded games promote problem-solving processes similar to formal cognitive reasoning. Gonzalez (2021) likewise demonstrated that analytical thinking can be scaffolded in structured classroom situations through the use of indigenous games. By contrast, Olanrewaju et al. (2021) found that some teachers resist incorporating learners'

informal knowledge systems because they believe these approaches conflict with official curriculum requirements. However, the present study found the opposite: teachers successfully bridged the divide between informal and formal learning by aligning rural gameplay with Economics content. This finding supports the view that culturally grounded practices can generate structured and academically defensible learning outcomes.

The study extends existing literature by connecting indigenous gameplay directly to specific Economics curriculum outcomes. Prior studies established cognitive advantages associated with game-based learning, but empirical demonstrations within Economics education were limited. The present findings illustrate how game logics embody economic concepts such as marginal returns, elasticity, and competition. This corroborates Hadebe-Ndlovu's (2022) assertion that indigenous games can inform mathematical reasoning while extending into abstract conceptualisation within the social sciences. The question of what constitutes formalised learning remains contested. Bursal and Polat (2020) note that the integration of informal tools into disciplinary knowledge is still underexplored. Arsaythamby and Julinamary (2014) argue that schools should restructure informal tools to support rigorous intellectual engagement. The present findings, however, demonstrate that learner-led gameplay, guided through reflective teacher facilitation, can generate analytical thinking without rigid formalisation. Learners developed reasoning skills through exploration and participation rather than through strictly structured instruction. In rural contexts, informal environments therefore emerge as productive, culturally connected spaces of learning that challenge rigid pedagogical frameworks (Nkonyane & Van Wyk, 2015).

Locally sourced educational resources

The study revealed that teachers valued indigenous games for their accessibility and sustainability, particularly in under-resourced schools. In Economics classrooms lacking charts, models, or digital tools, games such as Diketo and Kgati provided cost-free, hands-on learning experiences using stones, ropes, or open space. These locally available resources aligned with community realities and promoted inclusivity, positioning indigenous games as vital pedagogical tools in resource-scarce environments. This finding is supported by Moloi (2020), who observed that culturally relevant materials increase learner participation where formal teaching aids are limited. Similarly, Mosimege (2020) found that indigenous games bridge cultural practices and curriculum content in under-resourced South African schools. The present study confirms this relationship between cultural knowledge, affordability, and educational value.

Educators further emphasised the affordability and inclusivity of games such as Diketo, which require only stones or ropes sourced directly from communities. Matsekoleng et al. (2022), Moyo and Chinamasa (2022), and Moloi et al. (2021) similarly note that low-cost, locally available resources are essential for equitable learning in disadvantaged contexts. This reflects the widely held view that meaningful learning can occur even in the absence of sophisticated teaching materials. The results also align with Hadebe-Ndlovu (2022), who argues that although national policies promote contextualisation, they often fail to provide practical guidance for teachers working under resource constraints. Gonzalez (2021) observed that low-cost, culturally relevant materials, including traditional games, significantly increase learner engagement where formal teaching aids are scarce. Van Wyk (2013) likewise found that indigenous games function effectively as locally sourced pedagogical resources, bridging everyday cultural practices and curriculum knowledge. In contrast, Nkonyane and Van Wyk (2015) reported that some schools failed to integrate locally available games due to strong reliance on commercially produced teaching materials, highlighting contextual differences in resource utilisation. Furthermore, the sustainability of locally sourced educational tools is reinforced by Ekeh (2024) and Lukong and Mbuwir (2024), who argue that indigenous games remain functional, accessible, and pedagogically rich even in the absence of formal teaching resources.

Conclusions

This article shows that teachers' conceptions of indigenous games are central to how these games are used to teach market structures in Economics. Teachers understand indigenous games not as peripheral entertainment but as culturally rooted knowledge systems that can mediate abstract concepts through familiar experiences. Their recognition of indigenous games as African cultural heritage supports learner identity, comfort, and meaningful engagement. Their understanding of indigenous games as informal yet structured learning tools highlights how rule-based play can be aligned with strategic thinking and competition, which are core ideas in market structures. Finally, their conception of indigenous games as locally sourced resources emphasises their practicality, affordability, and sustainability in rural, under-resourced schools. When interpreted through Social Constructivist Theory, these conceptions illustrate that indigenous games function as cultural tools that enable social interaction, scaffolding, peer learning, and deeper conceptual development.

Recommendations

The study recommends that indigenous games be more intentionally recognised within Economics teaching and curriculum support structures. First, curriculum developers and policy makers should include clearer guidance on how indigenous games can be aligned with CAPS market structure outcomes. Second, teacher development programmes should provide practical training and exemplars that demonstrate how specific indigenous games can be mapped onto concepts such as competition, interdependence, cost and revenue behaviour, and elasticity. Third, schools and districts should encourage collaborative teacher communities where educators share locally developed game-based strategies and lesson resources. Finally, further research should examine how learners' performance in market structure topics changes when indigenous games are used consistently, and how such pedagogy can be scaled across different rural contexts.

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