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E. T Maziriri; Tinashe Chuchu; Miston Mapuranga

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Parental Perspectives on Gamified Experiences and Entrepreneurial Skill Development in Children: A Qualitative Study from South Africa's Eastern Cape

AUTHOR(S)

Eugine Tafadzwa Maziriri

University of the Western Cape, South Africa

https://orcid.org/0000-0002-8047-4702

Tinashe Chuchu

University of the Witwatersrand, South Africa

https://orcid.org/0000-0001-7325-8932

Miston Mapuranga

Walter Sisulu University, South Africa

https://orcid.org/0000-0002-4402-5600

PUBLISHED ONLINE
Volume 44 (2) July 2025

Pages 88-105

Submitted June 2025

Accepted July 2025

DOI
10.36615/gksqpd78

ISSN
Online 2957-7950

Print 0259-0069

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Abstract

Gamified communication is increasingly recognised as a powerful modality in education, fostering interactive learning and behavioural transformation. This study explored how game-based communication strategies contribute to entrepreneurial skill development in childhood, with a focus on South Africa's Eastern Cape. While gamification is well researched in Global North contexts, little is known about how it functions in early entrepreneurial development within African childhood settings. Drawing on an interpretivist paradigm, the study investigated how parents experience and make sense of gamified tools that promote entrepreneurial mindsets in their children. Semi-structured interviews were conducted with 18 parents, and data were analysed using the Gioia methodology and narrative analysis. The findings revealed that gamified platforms act as dynamic communication environments through which children engage in simulated entrepreneurial scenarios. Themes such as strategic risk taking, creative problem solving and financial decision making emerged as communicative competencies fostered through these interactions. Through foregrounding gamification as both a pedagogical and communicative practice, this study contributes to African-centred communication scholarship. It highlights the potential of gamified media in localised development contexts, particularly in addressing youth unemployment and social inequality. The research underscores the importance of adapting global digital communication frameworks to African childhood learning environments, opening up new avenues for policy, pedagogy and participatory communication.

Keywords

Development communication, digital media, entrepreneurial skills, gamified communication, South Africa, youth development

INTRODUCTION

In today's postmodern era, education can occur in informal settings, such as purchasing toys and games for children that foster entrepreneurship (Tessema et al., 2024). Gamification, the integration of game mechanics into non-game environments, has emerged as a globally transformative approach to enhance learning, motivation and behavioural development (Hamari et al., 2014; Sailer et al., 2017). Within the context of entrepreneurship, gamification serves as a dynamic tool to nurture essential entrepreneurial traits, including creativity, resilience, problem solving and critical thinking (Kapp, 2012; Khaled & Vasalou, 2022). Through leveraging game-like experiences, gamification fosters engagement and cultivates an entrepreneurial mindset among learners, enabling them to navigate challenges and seize opportunities

with innovative solutions (Deterding et al., 2011; Lam et al., 2023). Globally, scholars such as Hamari et al. (2014) and Deterding et al. (2011) have highlighted how gamified learning transforms education by enhancing motivation and behavioural outcomes. The global rise of educational technology has amplified this trend, integrating gamification into both formal and informal learning spaces. Children represent a critical demographic for cultivating entrepreneurship, as early exposure to entrepreneurial concepts can shape their cognitive and behavioural development (Hwang et al., 2022). This is especially relevant within broader international efforts to prepare children for the 21st-century economy through creative and entrepreneurial skillsets (European Commission, 2016; Fayolle & Gailly, 2015).

In South Africa, where unemployment and economic inequality persist, fostering entrepreneurial skills among children is increasingly recognised as a vital strategy for long-term socio-economic transformation (Herrington et al., 2023). Gamification provides a unique platform for introducing entrepreneurial skills in an engaging and interactive manner, thereby bridging the gap between traditional education and experiential learning (Trotta et al., 2022). The Eastern Cape, one of South Africa's most underserved provinces, presents both a need and an opportunity for innovative educational interventions such as gamification, particularly among youth who face systemic educational and economic barriers.

While global studies have extensively explored gamification in entrepreneurial education, they predominantly focus on regions such as Europe, Asia and North America, leaving significant gaps in African perspectives. For instance, Landers and Armstrong (2017) investigated the motivational effects of gamified learning environments on entrepreneurial intentions among secondary school students in the United States. Similarly, Hamari and Koivisto (2019) explored the role of gamification in enhancing entrepreneurial creativity and risk-taking behaviours among youth in Finland. From a Brazilian context, de Melo et al. (2023) examined the impact of gamification on entrepreneurial skill development among middle school students, while Alkaabi (2023) analysed the influence of gamified entrepreneurial simulations on problem solving and innovation in the context of the United Arab Emirates. In additionally, Daniel et al. (2024) highlighted the application of gamification to nurture entrepreneurial attitudes in Portuguese schools.

Despite these international advancements, a notable lack of equivalent research persists within African countries, particularly in South Africa. This gap is striking, given the potential of gamification to address challenges such as youth unemployment and the need for entrepreneurial skills development in the region. Existing South African studies have provided foundational insights but have not directly investigated how gamification fosters entrepreneurial skills among children. For example, Alao and Brink (2022) assessed the use of educational technology in enhancing creativity and problem solving among South African youth for employability but did not focus on entrepreneurial outcomes.

These studies highlight the need for research that directly addresses the intersection of gamification and entrepreneurial development in children within the South African context. Through building on international findings and adapting them to local educational, cultural and socio-economic dynamics, this study addressed this critical gap. This study also focused on a relatively underexplored demographic in gamification research: parents who introduce entrepreneurial games at home. While most previous studies prioritise educators and institutional contexts, this study highlights the familial setting as a formative space for entrepreneurial learning. Specifically, it investigated how gamification could be leveraged to nurture entrepreneurial mindsets and behaviours among South African children, ultimately contributing to the development of a robust entrepreneurial culture in the country. To achieve this, the following research question was formulated:

> RQ: How do parents perceive the role of gamified experiences in fostering entrepreneurial skills in their children?

This study offers several key contributions. First, it advances the body of knowledge on gamification and entrepreneurship by investigating how gamified experiences can cultivate entrepreneurial skills in children. Existing literature emphasises the effectiveness of gamification in education (Dichev & Dicheva,

2017; Su & Cheng, 2019), yet its application to entrepreneurial development, especially among children, remains underexplored. Through addressing this gap, the study enriches theoretical and empirical understandings, highlighting the role of game mechanics in nurturing key entrepreneurial traits such as creativity, problem solving and resilience (Landers, 2022). This contribution is critical as it aligns with the growing emphasis on integrating innovative methods into early entrepreneurial education (Groening et al., 2022).

A second unique contribution of this research lies in its focus on a rural setting in South Africa, specifically in Mthatha, Eastern Cape. Rural areas are often underrepresented in studies on entrepreneurship and gamification, despite their distinct socio-economic and cultural dynamics. Through situating the research in a rural context, this study sheds light on how gamified experiences resonate within communities where traditional educational resources may be limited. It also provides insights into how rural parents perceive and utilise games as tools for their children's entrepreneurial development, contributing to a deeper understanding of how entrepreneurship can be fostered in underserved regions (Abubakre et al., 2021).

Third, this study targets an under-researched population of parents who purchase games for their children. While prior research has predominantly focused on educators and policymakers, this study emphasises the role of familial influences in shaping children's early exposure to entrepreneurial thinking (Li et al., 2023). Through collecting data from parents, the research provides a unique lens on how games contribute to children's cognitive and entrepreneurial development. This demographic perspective is critical as it underscores the interplay between home environments and gamified learning tools.

Research in developing countries frequently emphasises entrepreneurship as a means of economic empowerment and innovation (Cele, 2022). The study identified specific game features and mechanisms that resonate with children in the region by situating the findings within South Africa's socio-economic framework. This contextual focus ensures the applicability of findings to real-world settings and enhances the practical relevance of the research for policymakers, educators and game developers.

In addition, the study provides practical implications for the design of gamified tools and platforms. Game developers and educators can leverage the findings to create engaging and effective gamified experiences that instil entrepreneurial skills in children. Through identifying specific game elements that enhance entrepreneurial learning, the research bridges the gap between academic inquiry and practical application, providing actionable recommendations for stakeholders invested in fostering entrepreneurship among young people in rural South Africa.

THEORETICAL FRAMEWORK

Gamification as an educational method is based on multiple learning and motivation theories, including Self-Determination Theory (SDT) (Deci & Ryan, 2004), Experiential Learning Theory (ELT) (Kolb, 1984) and Cognitive Load Theory (CLT) (Sweller, 1988). These theories suggest that game-based learning elements, including active engagement, autonomy and instant feedback, significantly enhance knowledge retention and skill acquisition (Kapp, 2012). Each of these theories, SDT, ELT and CLT, provides a distinct perspective on how gamification nurtures entrepreneurial skills in children. SDT emphasises intrinsic motivation, ELT focuses on the importance of experiential learning, while CLT highlights cognitive efficiency. Collectively, these theories create a robust framework for understanding how gamification promotes engagement, resilience and practical entrepreneurial skills among young learners. Details about these theories are discussed in the following sections.

Self-determination theory

SDT was pioneered by Edward Deci and Richard Ryan in 1985. The theory posits that intrinsic motivation is the fundamental driver of human behaviour, particularly in learning environments. According to Deci and Ryan (1985), intrinsic motivation stems from three innate psychological needs: autonomy, competence and relatedness. Autonomy refers to the individual's ability to have control over their actions; competence is the perception of effectiveness in an activity; and relatedness is the need for social connection and interaction. When these needs are satisfied, individuals are more likely to engage in tasks

with enthusiasm and persistence. Other scholars have expanded on SDT by applying it to various learning environments, including gamified educational settings. Ryan and Deci (2017) assert that gamification effectively nurtures intrinsic motivation by incorporating elements that satisfy these psychological needs. For instance, leaderboards, progress bars and achievement badges provide a sense of freedom while interactive challenges offer open and meaningful engagement. Seaborn and Fels (2015) further support this notion, highlighting that gamified learning environments sustain engagement by fostering an intrinsic desire to improve and succeed. In the context of this study, which examined how gamification promotes entrepreneurial skills in children, the SDT was particularly relevant. Gamification elements such as goal-setting, feedback mechanisms and virtual rewards enhance children's intrinsic motivation to engage with entrepreneurial concepts. Through creating an environment that promotes independence (through the choice of business strategies), competence (by mastering financial literacy) and relatedness (through collaboration in team-based business simulations), gamification encourages sustained participation and persistence in entrepreneurial activities.

Experiential learning theory

ELT was developed by David Kolb in 1984. Kolb describes learning as a continuous process in which knowledge is acquired through experience. His model consists of four stages: concrete experience, reflective observation, abstract conceptualisation and active experimentation. Kolb (1984) argues that effective learning occurs when individuals engage in an activity (concrete experience), reflect on their actions (reflective observation), derive meaningful insights (abstract conceptualisation) and apply these insights to future situations (active experimentation). Other researchers have extended Kolb's work to various educational settings, including digital learning and gamification. Bellotti et al. (2013) argue that gamified learning environments align with Kolb's experiential learning cycle by immersing learners in interactive business simulations. These simulations allow children to make entrepreneurial decisions, evaluate the outcomes and refine their strategies through trial and error. Gee (2008) highlights that gamification provides a safe space for failure, which is crucial in entrepreneurship. Children can test different business models, analyse the consequences of their choices and adapt their strategies without real-world risks. The relevance of ELT to this study lies in its emphasis on learning through hands-on experience. Entrepreneurship requires practical engagement, and gamification provides children with hands-on opportunities to experiment with business concepts. Through gamified simulations, children can experience the entire entrepreneurial process, from ideation to financial decision making, enhancing their understanding of business dynamics. Through iterating on failed attempts, they develop resilience and problem-solving skills, both of which are essential for fostering an entrepreneurial mindset.

Cognitive load theory

CLT was formulated by John Sweller in 1988. The theory suggests that learning is most effective when instructional materials are designed to manage cognitive load efficiently. Sweller (1988) categorises cognitive load into three types: intrinsic load (the complexity of the content), extraneous load (irrelevant information that hinders learning) and germane load (cognitive effort directed towards meaningful learning). According to Sweller, learning environments should be designed to minimise extraneous load while optimising germane load to facilitate comprehension and retention. Other researchers have applied CLT to gamification and digital learning environments. For instance, Sailer et al. (2017) argue that gamification helps to manage cognitive load by structuring learning experiences incrementally and engagingly. Kapp (2012) emphasises the role of storytelling in gamification, noting that narratives create meaningful contexts that support cognitive engagement. Children can grasp complex entrepreneurial principles more intuitively by embedding business concepts within interactive stories. CLT is relevant to this study as it emphasises the importance of designing gamified learning environments that facilitate, rather than hinder, learning. Entrepreneurship education often involves complex concepts, including financial literacy, risk assessment and business strategy. Through structuring these concepts through interactive games, children can engage with entrepreneurial content without feeling overwhelmed.

Gamification ensures that information is presented progressively, which reduces cognitive overload and enables children to process and apply knowledge effectively in real-world scenarios.

RESEARCH CONTEXT

Understanding the phenomenon of "gamification"

The concept of gamification has gained significant traction in education, particularly in entrepreneurship education, as an innovative approach to fostering engagement and motivation. Gamification integrates game-like elements into non-game contexts to enhance learning experiences and promote skill acquisition (Deterding et al., 2011). Given the increasing emphasis on cultivating an entrepreneurial mindset from an early age, gamification offers a promising tool to instil creativity, problem-solving skills and resilience in children (Ruiz-Alba et al., 2019). Gamification in education has been linked to various psychological and cognitive benefits, including increased intrinsic motivation, enhanced engagement and improved knowledge retention (Hamari et al., 2014). When applied to entrepreneurship education, gamification offers a simulated business environment where children can experiment with entrepreneurial concepts, develop business acumen and foster critical thinking skills in a risk-free setting. This learning methodology aligns with 21st-century skills development, which emphasises problem solving, innovation and adaptability (Gee, 2008). Therefore, exploring the impact of gamification on fostering entrepreneurial skills in children is crucial to understanding its potential as a long-term educational strategy.

Gamification in education

Gamification has been widely explored in various educational settings, including primary, secondary and higher education. Studies have shown that game-based learning enhances motivation, knowledge retention and engagement (Dicheva et al. 2015). In entrepreneurship education, gamification is used to simulate real-world business challenges, enabling students to practise decision making, risk taking and strategic planning (Isabelle 2020). Research by Hanus and Fox (2015) found that students who engaged in gamified learning environments exhibited higher levels of participation, engagement and persistence than those in traditional learning settings. The use of leaderboards, point systems and achievement badges fosters a sense of achievement, which, in turn, enhances motivation and promotes long-term learning (Buckley & Doyle, 2016). Furthermore, a meta-analysis by Sailer et al. (2017) demonstrated that gamification has a positive influence on cognitive, motivational and behavioural outcomes in education.

Gamification in entrepreneurship education

Entrepreneurship education aims to develop skills such as opportunity recognition, innovation and business management (Shane & Venkataraman, 2000). Gamification in entrepreneurship education has been found to increase students' entrepreneurial intentions and competencies by providing experiential learning opportunities (Fernandes et al., 2012). A study by Subhash and Cudney (2018) found that students who had been exposed to gamified entrepreneurship programmes exhibited higher levels of entrepreneurial behaviour and intent than those who had not. In addition, gamified approaches improve students' abilities to apply theoretical concepts to real-world business scenarios (Ruiz-Alba et al., 2019). Research by Bellotti et al. (2013) highlights that digital simulations and serious games provide an interactive platform where students can learn the intricacies of starting and managing a business and can make real-time decisions that mimic entrepreneurial realities.

Gamification and entrepreneurial skills in children

Encouraging entrepreneurial thinking from an early age is crucial when preparing children for future business and career opportunities. According to Almeida (2017), serious games in entrepreneurship education significantly enhance children's leadership, problem-solving and strategic-thinking skills. Furthermore, digital gaming environments provide a safe space for children to experiment with business ideas and learn from failures without real-world consequences (Khan et al., 2018). This aligns with the

argument that gamification helps cultivate an entrepreneurial mindset by fostering creativity, adaptability and resilience (Daspit et al., 2023). Research by Fang et al. (2024) further supports this claim, indicating that children who engage in gamified entrepreneurship learning exhibit higher levels of risk taking, opportunity identification and innovative thinking than their peers who engage in traditional business education.

METHODOLOGICAL ASPECTS

This research followed an interpretivist research philosophy and employed a qualitative approach, using semi-structured interviews with parents in Mthatha, in the Eastern Cape province of South Africa, to gain a comprehensive understanding of the phenomena under study (Pheko, 2014). This approach enabled the collection of rich, narrative data grounded in participants' lived experiences. Through incorporating a narrative inquiry and participant stories, the study aimed to collect data and grasp the lived experiences of the participants (Blustein et al., 2013; Chinyamurindi, 2016a). The use of narratives also enabled an exploration of the sequence of events and actions as they had an impact on individuals (Czarniawska, 2004). Ultimately, the research sought to uncover meaning through participant reflections (Chinyamurindi 2016a; 2016b). To support this aim, the Gioia methodology served as the foundational analytical framework for coding, interpretation and concept generation. Gioia et al. (2013) are advocates of this method's capacity to generate grounded theory through rigorous inductive procedures, rather than relying solely on impressionistic approaches. This methodology is especially relevant when exploring complex social phenomena such as entrepreneurship, where context, behaviour and meaning-making are tightly interwoven (Brush et al., 2009).

Specifically chosen for its aptness, the Gioia approach enabled a structured progression from first-order concepts (informant-centred) to second-order themes (researcher-interpreted), culminating in aggregate dimensions that articulated broader theoretical insights (see Table 1). Gioia (2021) further emphasises that this methodology ensures resonance with both scholarly audiences and the lived realities of participants. In this study, the Gioia method was integrated with narrative analysis to offer a dual lens on how gamification facilitates entrepreneurial skill development, combining thematic rigour with attention to lived sequence and meaning.

Table 1: Analytical coding process using the Gioia methodology

First-order concepts (parent quotes)	Second-order themes	Aggregate dimensions
"My child is always calculating risks in Monopoly."	Strategic risk taking and financial acumen	Entrepreneurial skill development
"SimCity has helped my child manage multiple priorities."	Creative problem solving and resource management	Business strategy and decision making
"My child constantly comes up with new product ideas after playing The Entrepreneur Game."	Entrepreneurial mindset and innovation	Entrepreneurial mindset cultivation
"The Game of Life has led my child to explore different career options."	Decision making and career exploration	Personal and career development
"After playing The Startup Game, my daughter prepares structured presentations."	Pitching and fundraising skills	Business communication and finance
"Food Chain Magnate has taught my son how to manage money effectively."	Financial literacy and resource management	Financial competence development

Sample

To conduct a narrative analysis, the study recruited 18 parents based in Mthatha in the Eastern Cape province of South Africa, over a one-year data collection period (January to December 2021). A non-probability convenience sampling technique was employed (Cohen et al., 2011), selected for its practicality in accessing a hard-to-reach population of parents actively using gamified tools for skill building at home. Although convenience sampling limits generalisability, the study prioritised depth over breadth, aligning with the principles of qualitative inquiry. As Guest et al. (2006) highlight, thematic saturation is often reached within 12 to 15 interviews in qualitative research. Our findings affirmed this, with recurring patterns emerging by the 15th interview, and subsequent interviews serving to deepen existing insights. Participants were included if they were parents of children under 18 and had purchased or used gamification tools to support entrepreneurial learning. Eligible participants were invited to take part in the study, and interviews were conducted at mutually convenient times and locations, typically in participants' homes. The interviews ranged from 45 minutes to two hours. Informed consent was obtained and pseudonyms were used to ensure participant confidentiality. Table 2 provides a demographic overview of the sample.

Table 2: The participants' demographic characteristics

Participant Number	Name	Age	Gender	Number of Children (Below 18)
1	Peter	47	Male	2
2	Lebogang	33	Female	1
3	Jimmy	51	Male	4
4	Natasha	44	Female	2
5	Thando	36	Male	2
6	Nelly	26	Female	1
7	Howard	47	Male	3
8	Mellisa	41	Female	2
9	Justice	39	Male	3
10	Hope	29	Female	1
11	Mpilo	39	Male	2
12	Fundiswa	33	Female	2
13	Silumko	49	Male	3
14	Noxolo	43	Female	4
15	Sibabalwe	51	Male	2
16	Funeka	39	Female	2
17	Nkosi	53	Male	4
18	Khanyiswa	47	Female	3

Source: Field data (2021)

Data collection method: Semi-structured interviews

Semi-structured interviews were the primary data collection method, chosen for their ability to explore complex phenomena through guided yet flexible conversations. This approach allowed participants to reflect on their lived experiences and share detailed narratives about how gamification supports

entrepreneurial learning at home (Sobuce, 2012; Thompson, 2022). An interview guide was developed based on existing literature on gamification and childhood entrepreneurship, combining structured prompts with open-ended questions to elicit both expected and emergent themes (Maziriri & Madinga, 2015). This semi-structured format enabled the interviewer to probe deeper into relevant areas as they arose, ensuring consistency across interviews while allowing for individual variation and depth.

A total of 18 interviews were conducted in person over a 12-month period, from January to December 2021. Interviews took place at participants' homes or other agreed-upon locations and they ranged in length from 45 minutes to two hours. The length variation was influenced by the level of engagement and availability of each participant, but the consistency of themes across interviews helped maintain data quality. With participant consent, most interviews were audio recorded and later transcribed verbatim. In cases where participants declined audio recording (n=5), detailed field notes were taken during the session and expanded immediately afterwards. To mitigate any potential loss of nuance, these notes were validated through participant member checking. All transcribed data and notes were imported into NVivo 11 for systematic organisation and analysis. The use of digital transcription software allows for accurate theme tracking and efficient categorisation aligned with the Gioia coding structure. This data collection strategy facilitated the emergence of rich, contextualised insights into how gamification was perceived, applied and experienced by parents as a tool for fostering entrepreneurial competencies in their children.

Strategies to ensure data quality and reporting

Strict guidelines were followed to ensure the quality and accuracy of the data in reporting. First, an interview guide was developed, reviewed by experts and piloted during the validation process. Second, data collection was conducted over 12 months, allowing ample time for transcription, analysis and the researcher's reflection.

Ethical considerations

This study adhered to institutional ethical requirements and standards. Ethical clearance was obtained from the participating institution, and all participants provided informed consent before the interviews. The study maintained participant confidentiality and anonymity, ensuring that participation was voluntary throughout the research process.

Ensuring the quality and rigour of the research

To maintain research quality and rigour, the researchers employed peer debriefing and member checking throughout the research design, execution and dissemination phases (Treharne & Riggs 2015). Following Johnson et al. (2020), reflexivity was applied to mitigate potential biases. In addition, the principles of credibility, transferability, dependability and confirmability were used to enhance trustworthiness (Lincoln & Guba, 1985). Credibility was ensured by accurately capturing participants' perspectives and aligning them with the study's objectives. Transferability was achieved through rich descriptions of the data, enabling future researchers to build on similar studies. Dependability was strengthened by maintaining a consistent research protocol, while confirmability was ensured through systematic coding and verification processes.

Narrative analysis

All interview transcriptions were imported into QSR International's NVivo version 11 software for data analysis and management. NVivo facilitated the organisation of textual data, identification of thematic patterns and visualisation of emergent narratives. As guided by the literature, narrative markers were used to structure participant responses, including orientation, abstract, sequence of events, evaluation and conclusion (Labov, 1972). The narrative analysis enabled participants to articulate their experiences with gamification in fostering entrepreneurial skills in their children. This method provided a holistic understanding of how gamified learning environments impact children's entrepreneurial development. Narrative interviews, as noted by Gatenby and Humphries (2000), honour participants' lived experiences

while also yielding comprehensive insights into their daily practices (Woodley & Lockard, 2016).

Determination of the main narratives

To derive key narratives, NVivo software was used to group similar codes into overarching themes. While the semi-structured interview guide was designed based on existing literature on gamification and entrepreneurial learning, data analysis followed an inductive approach, allowing new insights to emerge beyond the theoretical framework. Codes and their frequencies were recorded and categorised into distinct narratives that reflected the role of gamification in shaping entrepreneurial traits among children. These emergent themes were aligned with established literature, further reinforcing the study's significance and contribution to research in gamified entrepreneurial education. Table 1 presents the coding framework derived from the initial research question, which asked parents to describe how they use gamification to stimulate an entrepreneurial mindset in their children. The responses were systematically coded and analysed using three levels of meaning formation (Chinyamurindi et al., 2021; McCormack, 2000; Nachmias et al., 1996), leading to the identification of key strategies employed by parents. The findings are presented in the subsequent section.

FINDINGS

The results from this study highlight how gamification fosters entrepreneurial skills among children by developing critical skills such as strategic thinking, decision making, financial management, creativity and communication. These games offer valuable learning experiences in a fun and engaging manner, helping children to develop an entrepreneurial mindset and the practical skills necessary for future success. These findings are presented in the next sections.

Theme 1: Entrepreneurial skill development

Gamified environments, such as Monopoly and Cashflow 101, cultivate strategic risk-taking and financial management skills in children by simulating real-world economic scenarios and decision-making processes. The responses from parents demonstrate that these games not only teach financial concepts but also encourage children to think strategically about money and investments. The skills learnt in the games are being transferred to real-world situations, such as managing school projects and personal finances. This view is aptly encapsulated in the following comments:

> **Parent 1:** "My child's approach to Monopoly has really surprised me. She is not just playing the game; she is thinking several moves ahead, calculating risks and rewards. I see her applying these skills in her school projects and even in how she manages her pocket money."

This was supported by another participant, who stated:

> **Parent 2:** "With Cashflow 101, my son has become more confident in discussing investments and money management. He talks about his 'financial freedom plan' with a seriousness I have not seen before. It is amazing how a game can spark such maturity."

Theme 2: Business strategy and decision making

Games such as SimCity and Food Chain Magnate enhance creative problem solving and resource management by challenging children to balance multiple factors and make strategic decisions. These games provide children with opportunities to experiment with strategies and make complex decisions. The skills of resource management and planning extend beyond gaming, influencing the children's daily activities and fostering critical thinking in various contexts.

> **Parent 3:** "Watching my daughter play SimCity, I see her carefully plan out her city's infrastructure and manage resources efficiently. She often translates these skills into her daily life, from organising her study schedule to planning her weekend activities."

Another participant elucidated the following:

> **Parent 4:** "Food Chain Magnate has been a game changer for my son. He is not just playing; he is experimenting with different business strategies and learning from his failures. It is incredible how a game can teach him about market demands and resource allocation."

Theme 3: Entrepreneurial mindset cultivation

Games such as Startup Company and The Entrepreneur Game stimulate an entrepreneurial mindset by simulating startup challenges and innovation processes, encouraging children to think creatively and embrace business strategies. These games are instrumental in developing an entrepreneurial mindset by encouraging children to think creatively and proactively. The passion for business ideas and the inclination to innovate are evident in how children begin to view their potential careers and ventures. This view is aptly encapsulated in the following comments:

> **Parent 5:** "My daughter's experience with Startup Company has ignited her entrepreneurial skills. She discusses her 'business ideas' with enthusiasm and is constantly thinking of new ways to improve her company. It's as if she's already gearing up for her future career."

This was supported by another participant, who stated:

> **Parent 6:** "The Entrepreneur Game has made my son more proactive about problem solving and innovation. He's always coming up with new 'product ideas' and is fascinated by how businesses operate. It's wonderful to see his creativity and business acumen flourish through play."

Theme 4: Personal and career development

The Game of Life encourages decision making and career exploration by allowing children to navigate various life scenarios and career choices, helping them to understand the consequences of their decisions. The Game of Life promotes reflection on future careers and life choices, encouraging children to consider various paths. The game serves as a springboard for important discussions about personal goals, responsibilities and the decision-making process. This view is aptly encapsulated in the following comments:

> **Parent 7:** "Playing The Game of Life with my kids has sparked interesting conversations about career choices and life goals. They're learning to weigh different options and think critically about their future, which I believe is crucial for their personal development."

Another participant elucidated the following:

> **Parent 8:** "My son's interest in The Game of Life has led him to explore different careers and think about what he wants in his future. It's fascinating to see how a game can open up discussions about real-life aspirations and decision making."

Theme 5: Business communication and finance

Games such as The Startup Game develop pitching and fundraising skills by simulating the process of pitching business ideas and securing investment, providing children with practical insights into

entrepreneurial processes. This game provides valuable lessons in business communication, pitching and financing, empowering children to present ideas confidently and consider how to secure investments. The skills learnt here will be useful in various entrepreneurial activities and real-world business environments. This view is succinctly summarised in the following comments:

> **Parent 9:** "After playing The Startup Game, my daughter has become quite adept at pitching her ideas. She's even started creating presentations for her school projects and has a newfound confidence when talking about her concepts."

Another participant mentioned that:

> **Parent 10:** "The Startup Game has really boosted my son's understanding of how to attract investors. He's been more proactive about thinking through his business plans and strategising on how to make them appealing to others."

Theme 6: Financial competence development

Age of Empires fosters creative problem solving and innovation by enabling players to build and manage civilisations, compelling them to devise strategies and adapt to shifting circumstances within a dynamic environment. The game Age of Empires cultivates financial competence by challenging children to manage resources and adapt strategies in complex situations. The skills acquired in the game are transferable to academic projects and beyond, fostering creative thinking and problem-solving skills. This view is succinctly summarised in the following comments:

> **Parent 17:** "Playing Age of Empires has sparked a great deal of creativity in my child. He is always thinking about new strategies and innovative ways to overcome challenges, and it has been fascinating to see this creativity extend beyond the game."

Another participant elucidated the following:

> **Parent 18:** "My daughter's problem-solving skills have greatly benefited from Age of Empires. She has learnt how to adapt her strategies and think outside the box, skills that she now applies to her academic projects and other activities."

DISCUSSION

The findings of this study reveal that gamification is an effective method for cultivating entrepreneurial skills among children in the Eastern Cape of South Africa. Through the use of games that simulate real-world business challenges and decision-making processes, children gain hands-on experience with critical entrepreneurial competencies, including strategic thinking, financial management, creativity and effective communication. The results suggest that these gamified learning experiences offer rich opportunities for children's development, fostering important skills that can impact their personal and professional growth.

The study found that gamified environments, such as Monopoly and Cashflow 101, significantly enhance children's understanding of strategic risk taking and financial management. As noted by Parent 1, children learn to think several moves ahead, mirroring real-life financial decision making and project management. This aligns with prior research by Gee (2003), who argues that games simulate authentic experiences, enabling players to acquire skills that can be transferred to real-world contexts. Similarly, research by Anderson and Dill (2000) suggests that games such as Monopoly are particularly effective at fostering strategic thinking, as they require players to engage in long-term planning and consider the consequences of their actions.

The findings are consistent with those of Hamari et al. (2014), who note that gamification has

enhanced problem-solving abilities, particularly in tasks requiring financial literacy. By using gamified tools, children are not merely absorbing abstract concepts; they are actively applying them in playful yet practical scenarios. This demonstrates that gamification offers a dynamic avenue for learning that traditional educational methods might lack (Deterding et al. 2011). The parents' testimonies demonstrate that these skills are being applied to daily activities, underscoring the value of gamification in real-world scenarios.

Games such as SimCity and Food Chain Magnate enhance children's decision-making and problem-solving abilities by simulating complex systems that require them to balance multiple variables (Parent 3 and Parent 4). This aligns with the findings of researchers such as Gee (2003), who posit that games provide a context in which players are encouraged to make decisions under uncertainty, thereby fostering critical thinking. The ability to manage resources and experiment with strategies, as evidenced in the interviews, aligns with findings from Steinkuehler and Duncan (2008) who observe that strategy-based games enhance cognitive flexibility and long-term planning.

The results also align with the work of Barr (2012), who asserts that strategy games promote a systems-thinking approach, which is crucial for entrepreneurs who must manage interrelated factors, such as financial resources, market demand and competition. This suggests that these gamified environments offer children opportunities to practise complex decision making and resource management in a low-risk, engaging setting.

The games Startup Company and The Entrepreneur Game have been shown to stimulate entrepreneurial mindsets by encouraging children to innovate and develop business strategies (Parent 5 and Parent 6). These findings align with the existing literature on entrepreneurship education, which suggests that early exposure to business simulations promotes entrepreneurial attitudes, including creativity, risk taking and proactive problem solving (Fayolle & Gailly, 2015). Games that simulate business challenges help children understand the value of innovation and the process of turning ideas into action skills essential for entrepreneurial success.

In line with Schumpeter's (1934) theory of entrepreneurship as creative destruction, the games mentioned in this study encourage children to think critically about market demands, competition and new business opportunities. This aligns with the findings of Glover (2013), who discovered that gamified learning environments encourage children to experiment with innovative ideas, learn from failures and cultivate a growth mindset. The entrepreneurial skills sparked by these games, as noted by the parents, can inspire children to consider entrepreneurial careers, enhancing their motivation to innovate in real-life business contexts (Robinson, 2008).

The Game of Life emerged as a key tool for decision making and career exploration, as it encouraged children to think critically about their future careers and life choices (Parent 7 and Parent 8). The game's ability to promote reflection on personal goals and decision making aligns with findings by Hummel et al. (2018), who highlight that simulation games can be effective tools for career exploration, helping children to better understand the implications of their decisions and to navigate the complexities of adulthood.

In addition, the ability to experiment with different life paths in a game-based environment helps children build resilience and adaptability, qualities essential for navigating uncertain career landscapes (Kuratko, 2005). This also aligns with the concept of "career capital", which is crucial to building a successful career, particularly in entrepreneurial contexts (De Vos et al., 2011).

The findings of this study suggest that games such as The Startup Game foster skills in business communication and financial literacy, which are vital for entrepreneurial success (Parent 9 and Parent 10). These games simulate the process of pitching ideas and securing investments, thus providing valuable insights into the entrepreneurial process. The ability to pitch effectively and manage finances is crucial for entrepreneurs, as it significantly influences their ability to attract funding and effectively communicate their business ideas to potential investors (Baron & Markman, 2003).

The parents' observations support the findings of research by Muntean (2011), which suggest that gamification is effective in teaching business communication skills, especially when games require players to engage in negotiation, persuasion and problem solving. These skills, acquired in a game-based

setting, prepare children for real-world entrepreneurial endeavours where effective communication and sound financial decision making are essential to success.

Finally, the game Age of Empires was found to develop children's financial competence by requiring them to manage resources and adapt strategies to changing circumstances (Parent, 17, 18). This aligns with the findings of Donaldson et al. (2010), who emphasise that strategic games promote financial literacy by requiring players to manage resources, make investments and plan for future growth. Adapting and innovating in response to changing circumstances is a crucial entrepreneurial skill, as it reflects the resilience and adaptability necessary to succeed in dynamic business environments (Baumol, 2002). The results of this study demonstrate that gamification can be a powerful tool for fostering entrepreneurial skills in children. Through engaging with gamified learning environments, children develop competencies such as strategic thinking, financial management, creative problem solving and communication skills that are essential for future entrepreneurs.

Furthermore, these findings suggest that gamification can help bridge the skills gap in South Africa, where youth unemployment remains a significant challenge. Through equipping children with an entrepreneurial mindset and skills needed to succeed in the business world, gamified learning can play a pivotal role in promoting socio-economic transformation and addressing unemployment issues in the country (Mkuzo, 2023).

Ultimately, the study highlights the significance of tailoring global educational frameworks to local contexts. While gamification has been widely studied in Europe, North America and Asia, this study contributes to the limited empirical research on gamification in the African context, highlighting its potential to foster entrepreneurial skills in South African children.

In brief, this study presents compelling evidence that gamification can cultivate essential entrepreneurial skills among children in the Eastern Cape of South Africa. Through using games that simulate real-world business environments, children can develop critical skills such as decision making, strategic thinking and financial literacy, all of which are necessary for entrepreneurial success. These findings underscore the importance of incorporating gamified learning tools in educational curricula, particularly in regions such as South Africa where entrepreneurial development is key to addressing socio-economic challenges. Further research is needed to investigate the long-term effects of gamification on children's entrepreneurial outcomes and its potential scalability across various contexts.

THEORETICAL IMPLICATIONS

This study contributes to the existing body of knowledge on gamification, entrepreneurship education and child development by providing a contextual lens focused on South Africa. Theoretical implications extend across several educational and motivational theories, particularly Self-Determination Theory (SDT), Experiential Learning Theory (ELT) and Cognitive Load Theory (CLT), which collectively offer a multi-faceted perspective on how gamified experiences can foster entrepreneurial traits in children.

First, this study builds on SDT by emphasising how gamification, through autonomy, competence and relatedness, can cultivate intrinsic motivation in young learners. The findings suggest that game-like experiences can enhance children's internal motivation to engage with entrepreneurial tasks, reinforcing the central tenets of SDT in a practical setting.

Second, the study extends ELT by highlighting how the experiential learning process, rooted in active engagement and reflection, can be seamlessly integrated into gamified environments. Children are not only passively receiving knowledge but are actively involved in solving real-world problems, thereby reinforcing the role of experience in learning entrepreneurial concepts.

Third, in terms of CLT, the study provides valuable insights into how gamification can enhance cognitive processing by managing the cognitive load through structured and interactive learning modules. This aspect is crucial to understanding how gamified activities simplify complex entrepreneurial concepts, enabling young learners to develop critical skills such as problem solving and decision making without overwhelming their cognitive resources.

In addition, the study fills a significant gap in the literature by focusing on the South African context,

where entrepreneurship plays a vital role in addressing socio-economic issues such as unemployment and economic inequality. While international studies have explored gamification in various cultural contexts, this study makes a unique contribution by examining how gamification can promote entrepreneurship in an African setting, taking into consideration the country's educational system, cultural dynamics and economic challenges.

PRACTICAL IMPLICATIONS

The practical implications of this study are significant for educators, policymakers and parents, particularly in the context of South Africa's educational landscape. By demonstrating the potential of gamification to foster entrepreneurial mindsets and behaviours, this study provides actionable insights for developing and integrating gamified learning tools into educational curricula at various levels, from primary school to high school.

For educators, the findings highlight the importance of incorporating gamified learning experiences that simulate real-world entrepreneurial challenges. This approach can make learning more engaging and meaningful for students, encouraging them to think creatively, take risks and collaborate effectively – skills that are essential for entrepreneurship. Educators can leverage gamification to provide a more dynamic and hands-on learning environment, where students can practise entrepreneurial decision making and problem solving in a safe, controlled setting.

For parents, the study emphasises the role of gamified tools in shaping their children's entrepreneurial mindsets outside the traditional classroom. Parents can support the development of entrepreneurial skills in their children by introducing board games, online simulations and other gamified activities that promote financial literacy, strategic thinking and innovation. The study also provides parents with a clearer understanding of how these tools can influence their children's cognitive and behavioural development, enabling them to make more informed decisions about the types of educational toys and games they purchase.

From a policy perspective, the findings encourage the integration of gamification into national educational reforms, particularly in the context of skills development for young people. Policymakers can use this research to advocate for the inclusion of gamified entrepreneurial education in the formal school curriculum, thereby equipping children with the skills needed to navigate an increasingly complex and competitive job market. Furthermore, given the high unemployment rates in South Africa, policies that promote gamification in education could contribute to long-term socio-economic transformation by fostering a generation of young people who are more self-reliant and capable of creating their own employment opportunities.

In conclusion, this study has both theoretical and practical implications that extend beyond the academic realm, offering valuable insights into how gamification can be a transformative tool in shaping entrepreneurial behaviours in children. It not only adds to the theoretical understanding of gamification and entrepreneurship education but also provides practical recommendations for its implementation in various contexts, particularly in South Africa.

CONCLUSION

This study highlights gamification as a promising educational strategy for developing entrepreneurial skills in children, particularly in South Africa. Through simulating real-world business scenarios, gamified tools help nurture essential entrepreneurial qualities such as creativity, decision making, financial literacy and resilience. The findings are underpinned by Self-Determination Theory (SDT), Experiential Learning Theory (ELT) and Cognitive Load Theory (CLT), demonstrating how game-based learning can enhance motivation, engagement and practical understanding. The study also offers guidance for educators, parents and policymakers on incorporating gamified learning into formal and informal educational settings.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Some limitations should be noted. First, the study was conducted in a single South African region, which may limit the applicability of findings to broader contexts. Second, the sample size was relatively small and drawn through purposive sampling, which may affect the generalisability of the results. Third, the study focused exclusively on parents of young children, excluding perspectives from other age groups, educators or the children themselves. In addition, the sole reliance on qualitative interviews introduces subjectivity, as findings are based on personal interpretations of experiences.

Future research should consider employing more rigorous sampling strategies and increasing sample sizes to enhance representativeness and reliability. Direct observation of children engaging with gamified tools would also provide a richer, more holistic perspective to complement parental insights. Incorporating a more detailed analysis of the specific game mechanics, such as feedback loops, reward systems and interactive storytelling could shed light on the elements most effective in fostering entrepreneurial competencies. Researchers are also encouraged to reflect on their positionality and explicitly state any assumptions or biases to enhance the transparency and credibility of their analyses.

Longitudinal studies could offer insights into the sustained impact of gamification on entrepreneurial outcomes over time. Combining qualitative approaches with quantitative tools, such as validated measures of entrepreneurial behaviour, would provide a more comprehensive evaluation of the impact. Furthermore, studies focusing on underrepresented groups (for example, girls, neurodiverse learners and children from low-income communities) and comparative cross-cultural research could support the development of inclusive, scalable and context-sensitive gamified learning interventions. In summary, these future directions could contribute to a deeper and more inclusive understanding of how gamified communication supports entrepreneurial skill development among children in diverse African settings.

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