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Entrepreneurship pedagogy enhancing entrepreneurship intention in secondary school students in developing countries

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Abstract
Purpose: This study aims to investigate entrepreneurship pedagogy to enhance entrepreneurship intention among secondary school students.
Research methodology: The researchers self-administered 100 questionnaires to educators in secondary schools in Gweru Urban Schools, obtaining a response rate of 92%. Quantitative data were analyzed using regression to establish a relationship between entrepreneurship pedagogy and entrepreneurship intention.
Results: Results showed that entrepreneurship Experiential learning was positively correlated with entrepreneurship intention. In addition, the results showed that entrepreneurship design thinking, problem-based learning, and collaborative pedagogy were positively correlated with entrepreneurship intention.
Limitations: This study faced methodological constraints because it used a population from an urban setting. However, further studies covering developing countries in Africa are recommended.
Contribution: This study contributes to policy and curriculum changes in the way entrepreneurship pedagogies are implemented in developing countries.
Novelty: This study integrates entrepreneurship pedagogies applicable to entrepreneurship education to achieve entrepreneurship intention in secondary schools in developing countries using Sociocultural Theory.
Keywords: *Entrepreneurship Pedagogy; Entrepreneurship Intention; Sociocultural Theory*
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1. Introduction

Literature reveals that Scholars argue that entrepreneurship education provides theoretical hope as a panacea to youth unemployment (Iandoli, 2023). Many scholars regard entrepreneurship education as a solution for poverty alleviation, low standards of living, and unemployment (Kozlinska et al., 2023). Unfortunately, the scarcity of literature linking entrepreneurship education to the eradication of these social problems has become a cause for concern. Similarly, scholars have provided inconsistent results on the ability of entrepreneurship education to solve the challenge of unemployment, especially in developing countries, such as Zimbabwe (J. Lyu, Shepherd, & Lee, 2024). Regardless of these challenges, scholars remain quiet about changes in entrepreneurship pedagogy (Klapper & Fayolle, 2023; Sidrat, Chaudhry, & Chaudhry, 2023). Although many scholars question the appropriateness of entrepreneurship pedagogy that leads to entrepreneurship intention, few have investigated the results of entrepreneurship education. Various scholars have failed to reach a consensus on entrepreneurship pedagogy that educators can use to inculcate entrepreneurship intention (Walmsley & Wraae, 2022).

However, literature shows that entrepreneurship education in tertiary institutions fails to achieve the intended objectives (Lyu et al., 2024).

The literature shows that entrepreneurship intentions face several obstacles. Scholars have shown that perceived barriers are positively related to entrepreneurial intention. In addition, scholars have shown that learners' willingness to become entrepreneurs is undermined by various barriers. In Zimbabwe, many youths drop out soon after the ordinary level. These children end up on the streets, doing nothing. Those with passion for entrepreneurship do not have the skills to run a business. In addition, those who graduate expect to be employed, but because of the shrinking economy and the closure of industries, they fail to obtain jobs, adding to the number of unemployed people.

1.1 Statement of the Problem

According to Chadzamira and Chigara (2024), tertiary institutions in Zimbabwe produce 30,000 graduates each year who become unemployed, feeding into a high unemployment rate. The dissolution of industries in Zimbabwe due to the economic meltdown requires graduates with entrepreneurship skills to start their own businesses instead of seeking employment (Simon et al., 2024). However, a lack of creativity and innovation among the youth has become a cause for concern. Moreover, tertiary institutions treat entrepreneurship like any other module, creating challenges in inculcating entrepreneurship intentions in students (Kögel, 2024). Hence, this study integrates entrepreneurship pedagogy, which enhances entrepreneurship intention in secondary school students in developing countries.

1.2 Research Objectives

This study achieved the following research objectives.

1. To establish the relationship between experiential learning and attitudes towards entrepreneurship among secondary school students.
2. To determine the impact of entrepreneurship design thinking on subjective norms in secondary school students.
3. To ascertain the relationship between entrepreneurship problem-based learning and entrepreneurship self-efficacy in secondary school students
4. To establish the impact of collaborative entrepreneurship pedagogy on the perceived behavioral control of secondary school students.

These issues raised the interest of the authors in interrogating the nexus between entrepreneurship pedagogy and entrepreneurship intention. This paper begins by introducing concepts that highlight major challenges in the implementation of entrepreneurship education using entrepreneurship pedagogy to achieve entrepreneurship intention in youth. In addition, this paper reviews the literature on concepts using Sociocultural Theory as a Framework. The study presents the research methodology used, results, discussions, and conclusions.

2. Literature review

Motta and Galina (2023) view entrepreneurship as a dynamic transformation process that requires experimental learning to achieve results. Miço and Cungu (2023) define entrepreneurship as the ability to identify a business idea, take risks, plan, transform it into practice, and manage projects. Martins, Shahzad, and Xu (2023) define entrepreneurship as a way of identifying business opportunities through recommendations and creativity. While Vamvaka, Stoforos, Palaskas, and Botsaris (2020) made arguments that entrepreneurship is a planned, volitionally controlled behaviour that will develop entrepreneurship intentions over some time. There is no definite definition that can suit entrepreneurship, but some definitions link the theory and practicality of entrepreneurship. Researchers agreed that entrepreneurship is a process, not an event; it happens over time (Otache, Edopkolor, Sani, & Umar, 2024; Vamvaka et al., 2020).

Various scholars investigated different aspects of entrepreneurship (Aidoo, 2022; Dionysopoulou, 2020; Masunah, Dyani, Gaffar, & Sari, 2021; Sonkar & Sarkar, 2020; Sulaiman, Fitralisma, Fata, &

Nawawi, 2023). Scholars have investigated efforts to promote entrepreneurial motivation through shadow puppet performance (Masunah et al., 2021). Sonkar and Sarkar (2020) established the relationship between the three dimensions of institutes. Sulaiman et al. (2023) investigated the nexus between social entrepreneurship and business innovation. Similarly, Aidoo (2022) studies the performance and growth of SMEs as entrepreneurs. Dionysopoulou (2020) studied agro-tourism as a form of entrepreneurship. None of these scholars have looked at entrepreneurship pedagogy or entrepreneurship intention.

The literature on Sociocultural Theory provides insights into the implications of the theory for the concepts of entrepreneurship pedagogy and entrepreneurship intention in the context of developing countries. This study reviewed the literature on the nexus between entrepreneurship pedagogy and intention. In addition, the researchers reviewed the themes derived from the research objectives to deduce the hypotheses.

2.1 Vygotsky's Sociocultural Theory as a Theoretical Framework

Russian psychologist Lev Vygotsky proposed a Sociocultural Theory that encourages the passing of knowledge from experts to learners (Vestøl, 2024). Vygotsky argued that children's cognitive development and learning ability are guided and mediated by social interactions (Bodrova & Leong, 2008). Furthermore, Vygotsky adds that learning occurs through social interactions with more knowledgeable members of society (Bodrova & Leong, 2008). This theory posits that children acquire cultural values, beliefs, and problem-solving strategies through these interactions (Pemberton, 2024). Vygotsky postulated that human intelligence is a social process that originates in society or culture (Vestøl, 2024). Sociocultural Theory posits that children explicitly learn in the Zone of Proximal Development with the help of a more knowledgeable other (X. Liu, 2024; Pemberton, 2024).

Vats (2024) posited that through concepts such as the zone of proximal development (ZPD) and the importance of cultural tools, Vygotsky's theory provides valuable insights into how individuals learn, interact, and adapt within social and cultural contexts. Bodrova and Leong (2008) applied the Sociocultural Theory to education in kindergarten, assessment, and measurement in the early childhood classroom. By understanding and applying these principles, educators, psychologists, and organizational leaders can create environments that foster optimal learning, development, and collaboration (Vats 2024). The implications of this study are relevant for educators and instructional designers who seek to enhance the quality of instruction and promote effective and inclusive learning environments (Kilag, Maghanoy, Calzada-Seraña, & Ponte, 2024). In this study, Sociocultural Theory explains the hypothetical philosophy that entrepreneurship pedagogy determines entrepreneurial intention. Children need to be taught entrepreneurship by knowledgeable educators who understand pedagogies that enable them to acquire entrepreneurship skills easily.

2.2 Entrepreneurship Pedagogy

Entrepreneurship pedagogy has attracted the attention of many scholars (Badghish, Yaqub, Ali, Ali, & Malik, 2024; Englis & Frederiks, 2024; Iandoli, 2023; Igwe et al., 2022; J. Lyu et al., 2024; Rodrigues, 2023). However, scholars have failed to reach consensus on the definition of entrepreneurship pedagogy. Kozlinska et al. (2023) argue that uncertainty and ambiguity, actions, and dynamism inherent in entrepreneurship pedagogy cause variations in the perspectives of the concept. Scholars such as Kozlinska et al. (2023) view entrepreneurship pedagogy as a method that can be used or an approach that can be adopted to facilitate student learning. Similarly, Igwe et al. (2022) postulate that entrepreneurship pedagogical reforms provide the opportunity to incorporate innovations into the discovery of new knowledge and paths of responsibility. Adding to the discourse on entrepreneurship pedagogy, J. Lyu et al. ()20describededI thasmethod used se to facilitate children's learning. Entrepreneurship pedagogy refers to a multidimensional process affected by personal, sociological, and environmental factors (Walmsley & Wraae, 2022). Conversely, Koropogui, St-Jean, and Zakariya (2024) echo that variations in entrepreneurship pedagogy in courses, programs, and contexts make it difficult to compare studies. Variations in the definition of entrepreneurship pedagogy have aroused

researchers' interest. This raises questions about the appropriate pedagogy that leads to entrepreneurship intention, especially in secondary school students.

Literature indicates that other scholars suggest the use of indigenous knowledge to impact entrepreneurship education (Woods, Dell, & Carroll, 2022). This school of thought acknowledges on the part of scholars that entrepreneurship pedagogy depends on the environment and sociological context. However, scholars such as Iandoli (2023) argue that the adoption of entrepreneurship pedagogy confuses comprehension of the theoretical underpinnings and philosophies. Furthermore, scholars posit that the challenge of introducing these new methods into a pedagogical culture emphasizes ideation over experience, emotional intelligence, and making (Ávila et al., 2023). These scholars support the idea that entrepreneurship pedagogy should be practical. In support of this, Hadley (2023) postulates that entrepreneurship pedagogy should assist in the development of entrepreneurial knowledge, skills, and attitudes among secondary school students. However, Koropogui et al. (2024) argue that scholars present a theoretical position, while on the ground, the implementation of entrepreneurship pedagogy leaves much to be desired. These scholars further argue that it is difficult to know whether the effects of these entrepreneurship pedagogies yield positive results because many developing countries still experience a high rate of unemployment regardless of the introduction of entrepreneurship education (Koropogui et al., 2024).

Nevertheless, While Nikou, Brush, and Wraae (2023) dwell on entrepreneurship pedagogy in the context of application to education. Scholars view it as a way to develop skills for learners who aspire to become entrepreneurs. In addition, Lonappan and Aithal (2023) emphasize that teachers should concentrate on teaching the practical side of entrepreneurship. Similarly, Hägg and Gabrielsson (2020) described entrepreneurship pedagogy in an interactive way by both teachers and students in their learning environment doing their tasks. The literature reveals four major entrepreneurship pedagogies: experiential learning pedagogy, collaborative pedagogy, design thinking pedagogy, and perceived behavior control.

Literature shows that many scholars support the use of entrepreneurship experiential learning in the teaching of entrepreneurship education (Kim, Kim, Lee, & Joung, 2020; Mukesh, Pillai, & Mamman, 2020). However, these scholars have failed to provide evidence of entrepreneurship pedagogy in developing countries (Igwe et al., 2022). According to Kim et al. (2020), experiential entrepreneurship learning refers to the process whereby students learn through problem identification and formation. The literature stresses that students exposed to action or experiential learning have high entrepreneurship intention (Badghish et al., 2024; Englis & Frederiks, 2024). Walmsley and Wraae (2022) note that learning through experiments also builds entrepreneurship spirit. Evidence from the literature reveals that students need to have a theoretical and experimental way of learning that arouses entrepreneurship intentions (Castilla-Polo, Licerán-Gutiérrez, & Ruiz-Rodríguez, 2023; Kim et al., 2020; Mukesh et al., 2020). However, the authors failed to relate the use of entrepreneurship experiential learning to entrepreneurship education in developing countries.

Although scholars have extensively researched entrepreneurship experiential learning, the literature shows that other authors have interrogated the use of collaborative entrepreneurship pedagogy in the teaching of entrepreneurship education (Ansori et al., 2024; Feng, 2024; Indira, Wardani, & Murwaningsih, 2024). In addition, C.-H. Liu, Horng, Chou, Zhang, and Lin (2023) highlight that students perform better when they are working as a team rather than as individuals. The literature reveals that collaborative entrepreneurship pedagogy stresses the need for teamwork to have viable projects and business start-ups (Indira et al., 2024). This emphasizes that collaborative learning promotes creativity and motivation (Oe & Tanaka, 2023). However, evidence on the use of collaborative entrepreneurship learning in developing countries remains unavailable (Feng, 2024).

Many scholars have investigated the impact of entrepreneurship design thinking as entrepreneurship pedagogy at the tertiary level (Bathla et al. 2024; Jackson et al. 2024; Michel et al. 2024; Nambiar 2024). Contributing to this discourse, Okuogume and Toledano (2024) view entrepreneurship design

thinking as a project-based methodology that fosters new knowledge creation and innovative solutions to problems. Nambiar (2024) argued that entrepreneurship design thinking focuses mainly on the transfer of knowledge. However, evidence of knowledge transfer and its use remains ambiguous and unclear, especially in developing countries. Scholars have investigated the application of entrepreneurship design thinking in tertiary institutions, excluding secondary school students (Bathla et al., 2024). The application of entrepreneurship design thinking in secondary schools as entrepreneurship pedagogy remains unclear.

The literature indicates that scholars reviewed entrepreneurship perceived behavior control in the context of students at tertiary institutions (Botha & Wiese, 2024; H. Lyu & Saludin, 2024; She, Rasiah, Weissmann, & Kaur, 2024). According to Tiwari, Kumar, Kant, and Jaiswal (2024) and Zhang (2024), perceived behavior control considers an individual's perception based on the ability to successfully complete a task. Botha and Wiese (2024) postulate that weighing difficult tasks against perceived behaviours measures entrepreneurship's perceived behaviour control. However, scholars who have investigated this concept have not examined its application to entrepreneurship education in secondary schools or in developing countries. section, the study reviews the literature on the concept of entrepreneurship intention.

2.3 Entrepreneurship Intention

Entrepreneurship intention refers to a way of acquiring knowledge that can be used to drive a business venture (Al-Tekreeti, Al Khasawneh, & Dandis, 2024). In addition, Youssef, Boubaker, Dedaj, and Carabregu-Vokshi (2021) view entrepreneurship intentions as a personal conviction that triggers one to take action in pursuing entrepreneurial activities. The literature concludes that it is a matter of attitude and subject norms concerning behavior that builds entrepreneurship intentions (Neves & Brito, 2020). Martins et al. (2023) conclude that intentions are a guide that provides a grip on the journey of entrepreneurial operations and projects within an individual.

Martínez-Gregorio, Badenes-Ribera, and Oliver (2021) alluded that entrepreneurship intentions are centred on the theoretical framework of the theory of planned behaviour. The theory of planned behavior states that when one wants to start a business or a project, it is the intention that triggers the appetite for starting a business. Otache et al. (2024) alluded that entrepreneurship education shapes entrepreneurship intentions, the argument was that to come up with entrepreneurship intentions there should be entrepreneurship education first so that it can trigger the instilled intentions in an individual. Perez, Martins, Mahauad, and Sarango-Lalangui (2024), emphasised that there is a need for individual entrepreneurship orientation so that individuals will appreciate entrepreneurship, which will contribute to entrepreneurship intentions. Studies have shown that entrepreneurship intentions cannot stand outside of entrepreneurship education. Kyriakopoulos, Herbert, and Piperopoulos (2024) outlined that there is a need for entrepreneurship passion to come up with entrepreneurship intentions, and entrepreneurship passion has a direct positive effect on entrepreneurship intentions. Entrepreneurship intentions can lead to the development of ways, approaches, and pedagogical tools (Brás, Daniel, & Fernandes, 2024), which can be adopted by entrepreneurs.

The increase in the unemployment rate regardless of the implementation of entrepreneurship education in tertiary institutions has aroused the interest of researchers (Al-Tekreeti et al., 2024; Martins et al., 2023; Neves & Brito, 2020). However, the academic literature points to the nature of entrepreneurship pedagogy and implementing entrepreneurship education at the wrong level as causes of failure to obtain results (Martins et al., 2023). Failure to inculcate entrepreneurial intention is attributed to the high rate of unemployment, especially in developing countries (Martins et al., 2023). Contributing to the discourse on entrepreneurship intention, Neves and Brito (2020) argue that the concept refers to a combination of both intrinsic and extrinsic motivations coming from career, pecuniary, personal, and moral. Arousing the motivation and interest of students requires a systematic approach. However, scholars have become silent regarding the methods of arousing entrepreneurship intentions in students. Most scholars discuss measuring entrepreneurship intention without closely examining the process of acquiring it. Al-Tekreeti et al. (2024) explains that entrepreneurship intention consists of attitude

towards entrepreneurship, subjective norms, entrepreneurship self-efficacy, and perceived behaviour control. The next section reviews the literature on the nexus between entrepreneurship pedagogy and intention.

2.4 Entrepreneurship Pedagogy and Intention.

This section reviews the literature on themes derived from research objectives, namely, experiential learning and attitude towards entrepreneurship, design thinking and subjective norms, problem-based learning and self-efficacy, collaborative pedagogy, and perceived behavior control. Cera, Mlouk, Cera, and Shumeli (2020) alluded that individuals who have learned entrepreneurship as a subject in formal education have a higher intention to start a business.

Literature reveals that aligning teaching and learning activities can also help to develop entrepreneurship competencies, Mawson, Casulli, and Simmons (2023), Miço and Cungu (2023) have a view that there is a need to train teachers so that they can bring confidence to learners when they teach them about entrepreneurship. Porfírio, Felício, Carrilho, and Jardim (2023), argue that entrepreneurship intentions depend on the culture of a country and that intentions can be derived from observing what other entrepreneurs are doing. Self-efficiency, desire for achievement, and behavioral control (Maheshwari et al., 2023) have direct significance in building entrepreneurial intentions. Martins et al. (2023) argued that personality traits such as self-efficacy and individual perception help in the development of intentions. Sampene, Li, Khan, Agyeman, and Opoku (2023) alluded that entrepreneurship education has a direct effect on entrepreneurship intentions. According to Al-Qadasi, Zhang, Al-Awlaqi, Alshebami, and Aamer (2023), personality traits have a direct effect on entrepreneurship intentions, meaning that factors affecting personality also have an influence. However, this assertion requires empirical evidence to prove that entrepreneurship pedagogy leads to entrepreneurship intentions among secondary school students.

2.5 Entrepreneurship Experiential Learning and Attitudes towards Entrepreneurship

Scholars have found different findings regarding the relationship between experiential learning and attitudes towards entrepreneurship. Taneja, Kiran, and Bose's (2024) results show a positive relationship between experiential learning and attitude towards. However, this study focused on tertiary institution students. Taneja et al. (2024) pointed out that the module duration tends to yield better results. On the other hand, Lourenço and Loi (2024) argue that entrepreneurship experience fosters entrepreneurship skills but remains silent on its effect on attitude toward entrepreneurship.

According to Arendt (2024), experiential learning refers to the process by which students get tasks to do and work out through experiments and learning through action using experiential skills. This definition infers that, through hands-on experience, students develop an attitude towards entrepreneurship. However, scholars have not defined the type of attitude towards entrepreneurship. Contributing to the discussion, Żyminkowska (2024), notes that attitude plays a key role when it comes to entrepreneurship. According to Michel et al. (2024), attitude is the major driving factor in building an entrepreneur. This means, hypothetically, the intention to use experiential learning becomes a change in attitude towards entrepreneurship. Żyminkowska (2024) alludes that entrepreneurship education if taught using experiments, can also influence entrepreneurship intentions positively. When teachers adopt several dimensions of teaching (Michel et al., 2024), it helps empower students through problem-solving and opportunity finding. Such an experience of becoming a problem solver helps shape an entrepreneur. Therefore, the literature points to the following hypothesis:
H1: Experiential learning positively relates to a positive change in attitudes towards entrepreneurship.

2.6 Entrepreneurship Design Thinking and Subjective Norms

The literature points to variations in the relationship between entrepreneurship design thinking and subjective norms. Scholars (Bathla et al., 2024; Englis & Frederiks, 2024; Feng, 2024; Iandoli, 2023; Jackson et al., 2024; Kozlinska et al., 2023; Michel et al., 2024) have failed to link entrepreneurship design thinking to subjective norms. However, critical thinking contributes positively to entrepreneurship. Entrepreneurship design thinking and subjective norms are drivers of

entrepreneurship. Michel et al. (2024) argue that design thinking formulates excellent problem-solvers and opportunity-grabbers. Bathla et al. (2024) describe design thinking as a human-centred approach towards innovation that emphasise the role of synergies set of interaction. Similarly, Englis and Frederiks (2024) argue that design thinking fosters skills derived from traditional teaching methods based on the development of a business. In addition, Woraphiphat and Roopsuwankun (2023) view design thinking as a combination of tools, processes, and mindsets that designers use to solve problems. Subjective norms are the pressures used to engage in a particular behavior. However, these scholars did not relate design thinking to subjective norms. Subjective norms measure the degree of entrepreneurial intention inculcated by secondary school students. Therefore, this study proposes the following hypotheses:
H2: Entrepreneurship design thinking is positively related to subjective norms.

2.7 Entrepreneurship Problem Based-Learning and Entrepreneurship Self-Efficacy

Many scholars interrogated either problem based-learning or subjective norms (Aprilia & Surjanti, 2024; Avaqhi & Lawita, 2024; Chueh & Kao, 2024; Masdarini, Candiasa, Agustini, & Sudatha, 2024; Tsai, Chang, Chen, & Hsu, 2024). Scholars have avoided the nexus between entrepreneurship problem-based learning and entrepreneurship self-efficacy. However, Castro and Zermeno (2020) argued that entrepreneurship problem-based learning requires a concussive environment to enable learners to show their problem-solving skills so that they can give practical meaning to education. Students learn by solving open-ended problems.

Those scholars who looked at the nexus of these concepts found that problem-based learning along with self-efficacy contributed to students' entrepreneurial readiness (Avaqhi & Lawita, 2024). Conversely, Masdarini et al. (2024) argue that problem-based learning is not related to entrepreneurship self-efficacy. Chueh and Kao (2024) find a positive relationship between problem-based learning and entrepreneurship self-efficacy. However, scholars have interrogated these concepts in the context of tertiary institutions. These mixed findings lead to the following hypotheses:
H3: Problem-based learning is positively related to entrepreneurship self-efficacy among secondary school students.

2.8 Entrepreneurship Collaborative Pedagogy and Perceived Behaviour Control

Literature shows that scholars who interrogated the nexus of entrepreneurship collaborative pedagogy and perceived behaviour control found mixed results (Chen, Yang, Ma, & Lu, 2023; Hebles, Yaniz-Alvarez-de-Eulate, & Jara, 2023; López, Chaves, & Cordero, 2023; Michel et al., 2024; Porkodi, Saranya, Sultana, & Mittal, 2023; Tridapalli & Elliott, 2023). Similarly, Michel et al. (2024) posit that collaborative pedagogy cultivates entrepreneurial intentions. Conversely, Porkodi et al. (2023) postulated that the result proved that collaborative learning does benefit students more in developing competency than individual learning by cultivating essential skills such as communication, teamwork, critical thinking, and responsibility.

The literature shows a significant effect of cooperative learning on collective efficacy, planning, the establishment of objectives, problem solving, and conflict management. (2023). Scholars argue that it contributes to student training in a competence that is highly valued in the professional sphere and to the current understanding of the effect of cooperative learning from its different components in teamwork training. Moreover, the efficiency of an organization depends on whether everyone can make the best use of their talent and knowledge (Chen et al., 2023). Employee-learning behavior plays a crucial role in organizational innovation and change (Chen et al. 2023). Tridapalli and Elliott (2023) noted that perceived behavioral control had the objective of identifying challenges faced by faculty members when introducing sustainability in their classes. In addition, they noticed that many participants shared that it was common to not know what students had learned in previous courses, and some of them lacked a fundamental understanding of how corporations work. This causes problems in teaching sustainability, as the exploration of the concept in the business context depends on students knowing the dynamics of businesses and understanding how they can be embedded into their systems

(Tridapalli & Elliott, 2023). These variations in the findings led researchers to deduce the following hypothesis:
H4: Collaborative entrepreneurship pedagogy is positively related to perceived behavior control among secondary school students.

3. Research methodology

This study adopted the Positivism Paradigm, which posits that a single tangible reality exists that can be measured. This study measured the relationship between entrepreneurship pedagogy and entrepreneurship intention. The positivist paradigm advocates a Quantitative Approach. A questionnaire was used to collect data from 92 secondary school teachers in Gweru Urban. The educators took three weeks to complete the questionnaire collected by the researchers. The researcher used a 5-Point Likert Scale with responses ranging from Strongly Agree to Strongly Disagree. Data obtained from the field were analyzed using regression analyses. The researcher used correlation efficiency to determine the relationship between entrepreneurship pedagogies and entrepreneurship intention subvariables. The researchers considered four entrepreneurship pedagogies–entrepreneurship experiential learning, entrepreneurship design thinking, entrepreneurship problem-based learning, and entrepreneurship collaborative pedagogy–as independent sub-variables. Attitudes towards entrepreneurship, subjective norms, entrepreneurship self-efficacy, and perceived behavior control were used as the entrepreneurship intention (dependent) sub-variables.

As an independent variable, entrepreneurship pedagogy refers to the teaching methods used in a classroom that lead to the inculcation of entrepreneurship intention among secondary school students (. Lyu et al., 2024). On the other hand, as a dependent variable, entrepreneurship intention refers to an individual's personal inclination, desire or motivation to engage in entrepreneurial activities and pursue the path of starting, owning or managing a business venture (Bağış, Altınay, Kryeziu, Kurutkan, & Karaca, 2024). The researcher purposively selected entrepreneurship pedagogy sub-variables prescribed in the literature as the most frequently used entrepreneurship pedagogies (Arendt, 2024; Badghish et al., 2024; Burks & Armstrong, 2024; Englis & Frederiks, 2024; Hammoda, 2024; Koropogui et al., 2024). Conversely, the researcher purposively selected entrepreneurship intention sub-variables recommended by various scholars as measurement variables of entrepreneurship intention (Li, Bu, Zhang, & Huang, 2024; Perez et al., 2024; Qian, 2024; Srivastava, Shivani, & Dutta, 2024; Wismans, Jansen, Thurik, Prinzie, & Franken, 2024). Hence, the researchers collected data to establish the relationship between entrepreneurship pedagogy and entrepreneurship intention sub-variables.

4. Results and discussions

The study obtained a 92% response rate because the researcher self-administered the questionnaire. The participants comprised 61 women and 31 men. Seventy-three percent of participants had more than 20 years of experience as secondary educators. Sixty-two percent of the participants were senior teachers and heads of department. Although the participants were teaching in Gweru Urban at the time of the study, they had previously taught at various schools, including those in rural areas.

The results presented in Table 1 show the relationship between the entrepreneurship pedagogy sub-variables and entrepreneurship intention sub-variables using the correlation coefficient (r). Furthermore, Table 1 reveals the impact of a given entrepreneurship pedagogy variable on the entrepreneurship intention sub-variables, namely attitude towards entrepreneurship, subjective norms, entrepreneurship self-efficacy, and perceived behavior control. Entrepreneurship pedagogy sub-variables were considered independent variables, and entrepreneurship intention sub-variables were considered dependent variables.

The data indicate that the relationship between experiential learning and attitude towards entrepreneurship was stronger than other entrepreneurship intention sub-variables ($r = 0.5672$). In other words, if educators use experiential entrepreneurship learning, their attitude towards entrepreneurship among secondary school students increases. Additionally, the results indicate that experiential learning

is positively related to entrepreneurship self-efficacy (r = 0.4536). Similarly, experiential learning positively impacts received behavior control (r = 0.4378) and subjective norms (r = 0.3451).

Table 1. Entrepreneurship Pedagogy and Entrepreneurship Intention Relationship

		Entrepreneurship Intention sub-variables			
Entrepreneurship Pedagogy sub-variables		Attitude towards entrepreneurship	Subjective norms	Entrepreneurship self-efficacy	Perceived Behaviour Control
	Entrepreneurship Experiential Learning	0.5672	0.3451	0.4536	0.4378
	Entrepreneurship Design Thinking	0.3429	0.4532	0.5231	0.3425
	Entrepreneurship Problem Based Learning	0.2341	0.3241	0.2341	0.3457
	Entrepreneurship Collaborative Pedagogy	0.5628	0.6923	0.4872	0.5925

The results further show the relationship between entrepreneurship design thinking as an entrepreneurship pedagogy and entrepreneurship intention subvariables. Table 1 shows that the relationship between entrepreneurship design thinking and entrepreneurship self-efficiency has the highest positive correlation efficiency (r = 0.5231). In addition, entrepreneurship design thinking was positively related to subjective norms (r = 0.4532), attitudes towards entrepreneurship (r = 0.3429), and perceived behavior control (r = 0.3425).

Similarly, Table 1 indicates the relationship between entrepreneurship problem-based learning as an entrepreneurship pedagogy and the entrepreneurship intention sub-variable. The results reveal that problem-based learning positively relates to perceived behavior control (r = 0.3457), subjective norms (r = 0.3241), attitude towards entrepreneurship (r = 0.2341), and entrepreneurship self-efficiency (r = 0.2341). The impact of problem-based learning on entrepreneurship intention was the lowest compared to other entrepreneurship pedagogies.

Finally, Table 1 reveals that collaborative entrepreneurship pedagogy is highly positively related to subjective norms (r = 0.6923). In addition, the data show that collaborative entrepreneurship pedagogy is positively related to perceived behavioral control (r = 0.5925). The data also indicate that collaborative entrepreneurship pedagogy relates to attitudes towards entrepreneurship (r = 0.5628) and entrepreneurship self-efficacy (r = 0.4872). Entrepreneurship collaborative pedagogy was highly positively correlated with entrepreneurship intention sub-variables compared to other entrepreneurship pedagogies.

4.1 Discussions

The researchers discovered that entrepreneurship experiential learning pedagogy, if conducted by well-trained and experienced educators, promotes attitudes towards entrepreneurship, subjective norms, entrepreneurship self-efficacy, and perceived behavior control. These results are similar to those reported by Kim et al. (2020) and Mukesh et al. (2020). However, they differ in the sense that Kim et al. (2020) and Mukesh et al. (2020) investigated entrepreneurship learning pedagogy in the context of tertiary institution students, while this study examined the context of secondary schools. However, the researcher noted that the sociocultural environment plays a major role since the school setup requires

experts (knowledgeable people) and infrastructure to achieve entrepreneurship intention through entrepreneurship. Other scholars (Badghish et al., 2024; Castilla-Polo et al., 2023; Englis & Frederiks, 2024; Igwe et al., 2022; Kim et al., 2020; Mukesh et al., 2020; Walmsley & Wraae, 2022) have obtained similar results. Nevertheless, differences exist in the context in which these studies were conducted. Most of these studies examined the implementation of entrepreneurship education at the tertiary level, where the application of entrepreneurship experiential learning pedagogy was limited compared to its use at the secondary level. However, regardless of the context in which these studies were conducted, the results showed that entrepreneurship learning pedagogy, if applied by knowledgeable people with the availability of infrastructure and resources, leads to entrepreneurship intention in secondary school students.

Therefore, these results answer hypothesis,

H1: *Experiential learning positively relates to a positive change in attitudes towards entrepreneurship*.

This study shows that the use of experiential entrepreneurship learning leads to a change in the attitude towards entrepreneurship among secondary school students. Hence, researchers encourage teachers to use experiential entrepreneurship learning in their lessons.

The study indicated that entrepreneurship design thinking is positively related to entrepreneurship intention among secondary school students. These results are similar to those obtained by other researchers, such as Bathla et al. (2024). However, Bathla et al. (2024) focused on tertiary institutions. Their results differ from those of this study in that they argue that design-thinking pedagogy can only be applied to practical modules rather than other modules. The researchers argue that, in the context of a good sociocultural environment, entrepreneurship design thinking can be applied to entrepreneurship education teaching, yielding positive results. The study results differ from those propounded by Jackson et al. (2024), who proposed that although design thinking could be used in entrepreneurship education, it requires specialized knowledgeable people to use it, and the availability of technology determines its success. However, these researchers found that entrepreneurship design thinking can be applied in any setting, as long as the educator understands the sociocultural background of students. Similarly, Michelt et al. (2024), Nambiar (2024) and Okuogume and T(2024) results wthose applied tos appliedng the pedagogy. These scholars have used the context of tertiary institutions without considering students' sociocultural environments. Therefore, researchers argue that the sociocultural environment matters when determining the entrepreneurship pedagogy to use for entrepreneurship education that leads to entrepreneurial intention.

The results answer hypothesis,

H2: Entrepreneurship design thinking is positively related to subjective norms.

This means that entrepreneurship design thinking leads to subjective norms, all of which are equal. However, the use of entrepreneurship design thinking requires resources from educational funders.

The researcher found that collaborative entrepreneurship pedagogy positively impacts attitudes towards entrepreneurship, subjective norms, entrepreneurship self-efficacy, and perceived behavioral control. These results were similar to those obtained by Ansori et al. (2024), Feng (2024), and Indira et al. (2024), C.-H. Liu et al. (2023), and Oe and Tanaka (2023). Although the contexts of the studies were different, the results pointed to the same. The results indicate that collaborative entrepreneurship pedagogy can be used in any setting to yield results. However, the use of knowledgeable people in collaborative entrepreneurship pedagogy needs to be emphasized. Achieving entrepreneurship intention in secondary school students through the use of collaborative entrepreneurship pedagogy requires well-trained educators with resources to execute the task.

The results support the following hypothesis:

H4: Collaborative entrepreneurship pedagogy is positively related to perceived behavior control among secondary school students.

This shows that collaborative entrepreneurship pedagogy leads to perceived behavior control. However, collaborative entrepreneurship requires teamwork among stakeholders.

Although the results showed a positive correlation between problem-based learning and entrepreneurship intention, the degree of the relationship was very low. Botha and Wiese (2024) argue that problem-based learning requires a high intelligence quotient in the students being instructed. Entrepreneurship problem-based learning requires students who work hard and are well-resourced to work in a good environment (Lyu & Saludin, 2024). Considering the economic environment and education funding in developing countries, it has become very difficult to apply problem-based entrepreneurship learning (She et al., 2024). The sociocultural background of students differentiates them in terms of achieving entrepreneurship intention if knowledgeable people use problem-based entrepreneurship learning (Tiwari et al., 2024). It then means that entrepreneurship problem-based learning can be applied in certain circumstances after considering the intelligence quotient and sociocultural context of the secondary school students for it to be effective (Zhang, 2024).
The results answer the hypothesis
H3: Problem-based learning is positively related to entrepreneurship self-efficacy among secondary school students.

Evidence shows that the use of entrepreneurship problem-based learning leads to entrepreneurship self-efficacy in secondary school students. However, entrepreneurship problem-based learning pedagogy requires students with a high intelligence quotient.

5. Conclusions

The study concludes that experiential learning pedagogy positively contributes to entrepreneurship intention among secondary school students. However, for pedagogy to be effective, skilled and experienced educators with resources at their disposal are required. This becomes a challenge in developing countries without an education funding model that ensures the availability of resources in all secondary schools, including rural ones. Similarly, this study concludes that entrepreneurship design thinking leads to entrepreneurship intention among secondary school students. Educators need to understand the sociocultural background of students to make use of entrepreneurship design thinking. In addition, educators must be creative and innovative to inculcate such skills in secondary school students. This means that entrepreneurship design thinking becomes a pedagogy that must be used by educators with high experience in understanding the subject of entrepreneurship. These educators must be people who have ventured into entrepreneurship with both the theory and practical experience of the subject. Unfortunately, tertiary institutions in developing countries that train educators do not offer such training. Many educators have theoretical teaching experience in entrepreneurship without any hands-on experience. This negatively impacts the noble intention to produce students with entrepreneurial intentions.

Moreover, the study established that collaborative entrepreneurship pedagogy is highly positively correlated with entrepreneurship intention. This approach proved to be student-centered, and the student achieved the maximum benefit. In addition, the researchers concluded that collaborative entrepreneurship pedagogy does not require many resources. It fits well with the various sociocultural environments from which students can come. This means that pedagogy can be used in developing countries without difficulty. However, there is a need for knowledgeable people to use the pedagogy. The use of collaborative entrepreneurship pedagogy contributes to the sharing of knowledge between students and educators. This arouses entrepreneurship intention in secondary school students because they would motivate each other to learn and acquire entrepreneurial skills. Conversely, the study established that entrepreneurship problem-based learning had a very low degree of correlation, although it was positively related to entrepreneurship intention. The study concludes that entrepreneurship problem-based learning requires intelligent students who can match difficult tasks. According to the study, problem-based learning in entrepreneurship requires skilled manpower and resources to lead to entrepreneurial intention. Researchers argue that the application of problem-based learning for entrepreneurship becomes difficult in developing countries because of a shortage of resources. Pedagogy does not consider the sociocultural background of secondary school students. However, the sociocultural background of the student matters when it comes to entrepreneurship education, which leads to entrepreneurship intention. The study concluded that problem-based entrepreneurship learning

could be used in urban settings where resources and highly experienced educators exist. In that regard, the use of such pedagogy becomes discriminatory, since it cannot be applied to all social setups. This creates a gap between the Urban and Rural students living in the same country. However, the gap can be reduced through an education funding model that equips rural schools with resources that make it possible for rural educators to make use of problem-based entrepreneurship learning. In addition, the availability of existing businesses that educators can use as examples makes it easier to implement entrepreneurship problem-based learning.

In conclusion, entrepreneurship pedagogies require funding to inculcate entrepreneurship intentions among secondary school students. Investing in entrepreneurship pedagogies provides students with entrepreneurial skills, thereby creating more businesses that reduce the high rate of unemployed youth in developing countries.

5.1 Implications of the study

This study reveals that incorporating entrepreneurship pedagogy in secondary schools positively influences students' intention to become entrepreneurs. This finding has significant implications for developing countries, as it suggests that targeted educational interventions foster a culture of entrepreneurship and encourage more students to consider entrepreneurship a viable carrier path. Developing countries are facing challenges related to unemployment, poverty, and limited economic opportunities. By enhancing entrepreneurship intentions among secondary school students, this study indicates a potential avenue for driving economic development. Increased entrepreneurial activities lead to job creation, innovation, and economic growth, thereby contributing to poverty reduction and overall socioeconomic progress.

Entrepreneurship pedagogy focuses on developing the skills and competencies necessary for entrepreneurship. This study demonstrates that implementing such pedagogy in secondary schools equips students with these valuable skills, empowering them to navigate challenges, seize opportunities, and succeed as entrepreneurs. Entrepreneurship education fosters a sense of empowerment and urgency in students. By providing them with knowledge, tools, and experiences related to entrepreneurship, this study indicates that students feel more confident and capable of taking control of their destinies, making informed decisions, and creating positive changes in their lives and communities.

Introducing entrepreneurship pedagogy in secondary schools contributes to a broader sociocultural shift by challenging traditional mindsets and perceptions of career and employment. This study reveals that students exposed to entrepreneurship education develop a more positive attitude towards entrepreneurship, viewing it as a valuable pursuit. This shift in perception helps overcome societal biases against entrepreneurship and encourages more individuals to consider entrepreneurial ventures. The findings suggest that entrepreneurship pedagogy has a lasting impact on students' lives. By nurturing entrepreneurship intentions at a young age, students carry their entrepreneurial mindset and skills into adulthood, leading to a higher likelihood of entrepreneurial activities in the future. This long-term impact contributes to the sustained economic growth and development of developing countries.

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