

# **How the Gamified Pedagogy Complements Entrepreneurial Education Programme for Marginalised Communities: A Case from Malaysia**

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# **How the Gamified Pedagogy Complements Entrepreneurial Education Programme for Marginalised Communities: A Case from Malaysia**

This paper, based on a project sponsored by British Council, examines how an entrepreneurship education programme (EEP) adopts gamified pedagogy to enhance entrepreneurship of business starters from the marginalised communities in Malaysia. A case study was conducted on the basis of qualitative data collected from interviews with the participants and their feedback, as well as records, archives and observations. The results and feedback show positivity in the entrepreneurial mindset, skills, self-efficacy and entrepreneurial intentions of the participants, indicating the potential for gamified pedagogy to adapt EEP to learners outside the school/college contexts. The project also indicates potential for using gamified pedagogy to engage and support learners for lifelong learning in the non-school/college context. Lastly, this paper paves the way for future research regarding the implementation of EEP in emerging economies.

Keywords: gamification; entrepreneurial education; marginal community; pedagogy

## **Introduction**

Entrepreneurship is believed to be critical for wealth creation, employment, social-economic and career development (Bauman & Lucy, 2021; Jardim et al., 2021), and hence has become a topical subject for research (Gabrielsson et al., 2020; Landström, 2020). Entrepreneurship is particularly vital for emerging economies where it is sometimes the only way for people from minority groups to access employment and supports (Sieger et al., 2021). However, entrepreneurship is inadequate in developing countries like Malaysia because of high fear of failure and low entrepreneurial intension (Looi & Martiz, 2021).

Entrepreneurship Education (EE) is believed to be an effective way to address the above issues (Isabelle, 2020; Zellweger et al., 2011). Therefore, like entrepreneurship, EE has become a highly discussed topic, academically and practically

(Jonas & Hägg, 2020; Landström, 2020; Soares et al., 2024). Moreover, empirical evidence indicates correlations between EE and innovativeness, entrepreneurship (Bauman & Lucy, 2021; Summit Consulting, 2009), entrepreneurial skill & culture, and social ascension (Jardim et al., 2021).

In the recent years, there has been a continuous decline in graduate employability and academic failure (Jardim et al., 2021). The main reason is the lack of entrepreneurial skills, culture and the inability of the higher education institutions and public agencies to spot those with entrepreneurial talents and nurture them. EE distinguishes from general management education courses because of its practice-orientation, preference for experience-based pedagogies and pragmatist approaches to learning (Hägg & Gabrielsson, 2020; Kyrö, 2015; Mwasalwiba, 2010). Hence, above challenges facing higher education (HE) and public institutions can potentially be addressed by the intervention of Entrepreneurial Education Programmes (EEPs), which train and educate learners from various socio-economic contexts and educational backgrounds to acquire an entrepreneurial culture and its skills, competences, values, emotions and tools (Jardim et al., 2021). Consequently, the number of EEPs has been growing all over the world (Byun et al., 2018; Fayolle et al., 2016), most of which were believed to be effective in promoting vital entrepreneurial skills and culture, e.g. sense of initiative, problem-solving, innovation, creativity and teamwork (Hyams-Ssekasi & Taheri, 2022; Jardim et al., 2021).

Since the first entrepreneurship course was initiated at Harvard Business School in 1947, the phenomenon has been emerging globally to cope with the business problems relating to new business setting and management at the beginning (Jardim et al., 2021). Therefore, most of the EEPs are designed for and implemented in a school/HE context (Bauman & Lucy, 2021; Gabrielsson et al., 2020; Soares et al.,

2024). However, Azoulay et al. (2020) found that entrepreneurs at the middle age and older had the highest success rates among all new ventures. In Malaysia, people aged between 25-34 were found most active in entrepreneurship, suggesting the significant role that young people play in the creation of new ventures (Looi & Maritz, 2021). Lyons & Zhang (2018) found that EEPs are more effective for those who have limited access to entrepreneurial opportunities and are more beneficial to participants who would have more difficulty in accessing the resources and skills of the programmes. EEPs, therefore, need to be adjusted to accommodate the personal traits and demographics of the learners (Bauman & Lucy, 2021).

Indeed, the scope of EE and the learners have also been extended to people at all levels of education who need to develop entrepreneurial mindsets and skills (Jardim et al., 2021). Coherently, the objectives of EEPs have diversified to also include empowering people, regardless of their educational and social backgrounds, to address professional challenges, create jobs, develop solutions to social and economic problems, enhance competency, and promote entrepreneurial mindsets and culture (Mwasalwiba, 2010).

Therefore, being a part of the business ecosystem, EEP requires to restructure not just one course or programme, but the entire pedagogical approach to entrepreneurial education to better reflect changes in the environment (Bauman & Lucy, 2021); and needs strong communities and collaboration of students, researchers and practitioners (Bauman & Lucy, 2021; Belitski & Heron, 2017). Specifically, given the importance of entrepreneurship and EE for minorities in emerging economies, research on EEP for business starters from those contexts and EEP for informal and life-long learning (Melo et al., 2023; Sieger et al., 2021; Soares et al., 2024). To achieve that

goal, strategies are adopted, including the provision of entrepreneurship trainings by enhanced cooperation between industry and educational institutions.

In addition, regarding the pedagogy, researchers have identified the tendency for EEPs to have a digital format (Soundarajan et al., 2016) for the development of projects in the scope of social entrepreneurship (Kim et al., 2020). Gamification, defined as the usage of the dynamics and mechanics of games in teaching and learning process (Isabelle, 2020), is believed a potential tool that facilitates EE (Aries et al., 2020; Grivokostopoulou et al., 2019; Isabelle, 2020; Pérez-Macías et al., 2022; Soares et al., 2024). Engaging learners in real-world activities, gamification provides positive learning outcomes, improves soft skills, and increases knowledge (Isabelle, 2020; Soares et al., 2024). Existing literature on these subject calls for more empirical evidence for how gamification, in combination with traditional teaching methods, can be adapted to EE in different contexts, particular the non-school context in developing countries (Melo et al., 2023; Sieger et al., 2021; Soares et al., 2024).

Therefore, this research aims to answer the following question:

How does an EEP, adopting gamified pedagogy, enhance the entrepreneurial mindset, skills, self-efficacy and entrepreneurial intentions of business starters from the marginalised communities in Malaysia?

To answer this question, this paper will present the implementation and outcomes of an entrepreneurship education programme, titled 'KECEKAPAN', with a specific focus on gamification as being a complement approach of the traditional pedagogy.

The next sections review the extant literature in EE and gamification and introduce the KECEKAPAN project in terms of its design, implementation and outcomes. The research methodology and details of study design is justified and

provided. The paper concludes through summarising the key findings, identifying the limitations and suggesting future studies.

## **Materials and Methods**

### ***Literature Review***

Entrepreneurial education programme, since its initiation in 1947 in the United States, has been prevailing all over the world (Jardim et al., 2021). The intervention of EEP achieves positive results not only in higher education context, but also in primary schools and secondary education (Bisanz et al., 2019; Landström, 2020; Lyons & Zhang, 2018; Pinho et al., 2019). In the higher education context, the focus of PPEs is made on advanced entrepreneurial skills related to management, economics, finance and marketing (Boldureanu et al., 2020; Soundarajan et al., 2016; Wu et al., 2018).

Coherently, intervention of EEPs at universities is found effective in enabling the students to capture business opportunities, develop business models and marketing plan, take advantages of social networks, mitigate associated risks, and solve problems and conflicts emerging in workplaces (Kim et al., 2020; Lekoko et al., 2012; Wu et al., 2019;). Those EEPs, in particular, promote entrepreneurial skills i.e. sense of initiative, problem-solving, innovation, creativity, and teamwork (Bacigalupo et al., 2016; Hebles et al., 2019; Jardim et al., 2020) and help disseminate entrepreneurial culture in the entire society, including those who are not born and grow up in a socio-economic contexts that favour entrepreneurship (Jardim et al., 2021).

Entrepreneurial education, due to its distinguishment from mainstream education in terms of orientation, agenda, pedagogy and method (Mwasalwiba, 2010), is believed to be a growing research field (Durán-Sánchez et al., 2019; Hägg & Gabrielsson, 2020). Research about EE, however, remains young, fragmented and lack of empirical evidence (Kakouris & Georgiadis, 2016; Looi, 2020; Nabi et al., 2017).

Core research themes have been identified. Topics such as pedagogy, particularly the methods and approaches for teaching entrepreneurship and

entrepreneurial learning from experience and education, are highlighted as being most influential and of increasing interest (Fellnhöfer, 2018; Hägg & Gabrielsson, 2020; Kyrö, 2015).

Pedagogy in EE, which refers to methods and approaches used by teachers to lead students in EE (Loi et al., 2016) is hence a core theme for EE research (Jonas & Hägg, 2020) due to its practice orientation, incorporation in pragmatist/constructivist approaches to learning, and diversity in theories and research (Hägg & Gabrielsson, 2020; Kyrö, 2015;). Discussions about pedagogy in EE have shifted from traditional teacher-guided and instructed EE models (Solomon & Fernald, 1991) to a more constructionist perspective that EE should be more learner-centred and stress the interplay between individuals and society (Hägg & Gabrielsson, 2020).

Recent research believes that, in light of the changing environment, there is a need to enhance the presentations of EEP to be more engaging by videos, graphics and surveys, and to extend opportunities outside the classroom (Bauman & Lucy, 2021). Gibson & Sodeman (2014) suggest that face-to-face class for assignments where students collaborate and solve problems, while lectures, videos, and presentation materials are recorded and provided for the students to upload and view at their convenience. In particular, tendency has been identified for EEPs to have a digital format and utilise e-learning systems, methods and technologies in their pedagogy (Kim et al., 2020; Soundarajan et al., 2016;). Gamification is believed to be an effective approach (Aries et al., 2020; Capelo et al., 2021; Grivokostopoulou et al., 2019; Isabelle, 2020; Pérez-Macías et al., 2022; Soares et al., 2024). Gamification, being defined as the usage of the dynamics and mechanics of games in teaching and learning process (Isabelle, 2020), is believed to be a potential solution to the challenges above by bringing theory and practice together (Aries et al., 2020; Capelo et al., 2021;



Grivokostopoulou et al., 2019; Isabelle, 2020; Pérez-Macias et al., 2022; Soares et al., 2024).

Moreover, results of EEPs that adopt gamification have been positive in terms of leveraging soft skills and knowledge (Gibson & Sodeman, 2014), improving engagement, enhancing motivation and performance, entrepreneurship efficacy and eventually entrepreneurial intention and attitude (Isabelle, 2020; Soares et al., 2024). It further emulates unpredictable interactions and promotes problem-solving within entrepreneurship setting (Susi et al., 2007).

Gamification is not new for EE research, as it has been the core of the EE related studies and publications (Jonas & Hägg, 2020). At the beginning, the discussion was focused on simulation as a key approach of EE practice (Feldman, 1995). The focus then shifted to experience and action as pedagogical methods for EE (Cooper et al., 2004), and a broader scope that stresses the EE learning process, with the role of the teacher, the dynamics between action and reflection, the value created through EE in bridging the gap between theory and practices being placed at its heart (Balan et al., 2018; Harms, 2015; Jonas & Hägg, 2020; Macht & Ball, 2016).

Moreover, the contexts for EE research have changed as well, from the EE for students in the business school context, to EE courses and programmes outside school (Pittaway et al., 2009), hence research on this subject outside the formal educational contexts, such as life-long learning, is necessary (Soares et al. 2024). Lastly, given the particular importance of entrepreneurship and EE for developing countries, attention is required to be put on minorities in those countries (Melo et al., 2023; Sieger et al., 2021).

This research, based on the KECEKAPAN project, responds to the above calls for exploring EE and gamification in the context of minorities from emerging

economies and gamified EEP for life-long learning (Melo et al. 2023; Perez-Perez et al. 2021; Sieger et al. 2021; Soares et al. 2024). Being practice-based, this paper will make three contributions to the literature pertaining to entrepreneurial education and gamification:

- (1) It fills the gap of existing research on EE outside the school/HE contexts.
- (2) It explores the way to implement the gamified EE among business owners from marginal communities to enhance their entrepreneurial efficacy, skills and intention.
- (3) It develops an EE platform that facilitates life-long learning.

## ***Research Methods***

### *Empirical Setting and Case Selection*

This study adopts a qualitative case study approach based on primary data that were collected from interviews with the learners that participated the KECEKAPAN project and their feedback.

The interview in focus groups was selected because of the explorative nature of the research, requiring in-depth knowledge of the project and attitudes of/feedback of learners to the project and its gamified pedagogy. Moreover, focus groups were formed to collect primary data, because of the epistemological position of this research, which requires an interactive and interpretive method for coming to know the world (Lincoln et al., 2011, p.107). Involving participants from the three cohorts in Penang, Taiping and Johor Baru, the focus groups put the researchers in the middle space (Denzin & Lincoln, 2011) to collect empirical evidence. Moreover, the focus groups also mitigate the disadvantages of interviews and observations, for example, bias, time consumption,

and costs (Yin, 2018) by engaging in dialogues with participants and observing their interactions.

Secondary sources such as profiles of these companies that can be represented in their documentation and archival records, including reports and published documents in relation to this project, are used as sources to understand how this programme is conducted and what the results are. For this reason, documentation and archival records are treated as not only sources, but also evidence for validation.

Case study was conducted following the qualitative paradigm, in pursuit of in-depth knowledge and understanding about the programme in terms of the advantages and disadvantages of gamification being applied to the pedagogy of entrepreneurial education, the challenges being faced and supports needed. A case study protocol was developed and implemented. Validity of the research was strengthened by multiple sources of evidence, including audio records, websites of the participant companies and photographic recordings.

The authors followed the case study protocol (Yin, 2018). Questions were based on the research intent: gamification in the pedagogy for entrepreneurial education, its advantages and disadvantages, and challenges. Recorded data from interviews/focus group were transcribed, coded, analysed and configured to allow patterns and logics to emerge (Lincoln et al., 2011).

In addition, to aid reliability, a case study database was developed during and after the data collection. The internal validity is further guaranteed by constructing consensus among the participants.

### *Case Profile*

KECEKAPAN, or *Key Entrepreneurial Cognitive Education and Knowledge*

*Advancement Project: A Network*, is an EEP that adopts a growth mindset curriculum

design through gamification focusing on building entrepreneurial mindset, skills, self-efficacy and eventually enhancing entrepreneurial intention and engaging the participants in life-long learning. It aims to initiate a paradigm shift from a job-seeking mindset to a job creation mindset, in alignment with the strategy of Ministry of Entrepreneur Development and Co-operatives of Malaysia (MaGIC). One way to encourage a growth mindset is using gamification concepts through effective pedagogy.

Furthermore, this project also implements an experiential learning approach by incorporating industry-specific roles in the curriculum design and development to enable learners to acquire key entrepreneurial skills – communication, teamwork, collaboration, complex problem solving, critical thinking, cognitive flexibility, leadership, creativity, innovative and entrepreneurial skills. Within the curriculum, the project incorporates an innovative evaluation of the time and pace of learners learning designed for gamified pedagogy.

Due to its focus on entrepreneurial education, this project aims to develop an innovative and transformative pedagogy to stimulate growth and an entrepreneurial mindset.

The structure of KECEKAPAN is developed following the framework of Jardim et al. (2021), who believes that a successful EEP is developed from three dimensions, including the identity of the programme, pedagogical options, and evaluations (Figure 1).

In terms of its identity, an acronym, KECEKAPAN, which means efficiency in Malay, is created for the project name. The recipients of the project are contextualised in the business starters from the marginalised communities in Malaysia. The objective of KECEKAPAN is *‘to develop an innovative and transformative pedagogy to stimulate growth and an entrepreneurial mindset.’* Skills and content that are included in the

project cover cultural sensitivity, innovation and creativity, empowerment and disempowerment, book-keeping, marketing, general management skills, and design thinking. Those content and their theoretical foundation are derived from the EE courses at partner universities.

The partnership is developed from a collaboration of the associated partners, which have previously worked on several projects. As this project targets learners from various parts of Malaysia, it takes advantage of the expertise of associated partner, University Seins Malaysia's Distance Learning School model to design a blended learning and teaching programme with some elements of physical workshops. It also draws on the expertise of its partner, Universiti Malaya for Malaysia-specific content in the context of entrepreneurship to fully understand the skills relevant in the ever-changing environment and Universiti Kebangsaan Malaysia on the specific cognitive psychological mindset of Malaysian marginalised communities. Furthermore, five of the participant universities (University of Glasgow, Universiti Malaya, University Sains Malaysia, University of Aberdeen and Liverpool John Moores University) are engaged in the project by stages of design, recruitment of learners, administration, delivery and assessment. The collaboration between the UK and Malaysia-based universities and other associated organisations for this project aims to initiate a partnership on innovative entrepreneurial education, research, and programmes in the future.

As per the pedagogical options and evaluations, KECEKAPAN project developed an innovative 12-week entrepreneurial training program incorporating a growth mindset, gamification, and experiential learning. The project team has designed and developed a 12-week tri-language (English, Malay, and Malaysian sign language) programme. Its flexible, competency-based curriculum demonstrated a significant uplift in entrepreneurial skills development.

## Results

The central output of the KECEKAPAN project was the development of a unique 12-week online entrepreneurial training programme. This competency-based curriculum was meticulously co-designed by academics and industry practitioners to ensure it was relevant and practical for learners outside university context. A key innovation was the deep integration of gamification to enhance motivation, understanding, and engagement. The project team designed and built an original, multi-level computer and mobile-accessible game specifically to cultivate the participants' entrepreneurial mindsets and improve their tolerance for risk. Post-programme analysis revealed (Figure 3):

- 1) the game's effectiveness, with results showing that 87% of participants improved their knowledge and shifted their attitude towards risk from resistance to a higher tolerance, a crucial trait for entrepreneurs.
- 2) Accessibility was a cornerstone of the programme's design. Going beyond its initial goal of a dual-language (English and Malay) curriculum, the project team incorporated a third language: sign language for hearing-impaired participants. This tri-language platform, hosted on the University of Glasgow's online portal, ensured the content was widely accessible to diverse learners.
- 3) This had the profound, albeit unquantified, effect of boosting the self-esteem of participants, many of whom had never had the opportunity to attend a university, let alone a prestigious overseas institution.

The impact on participants was significant and multifaceted:

- **Skills and Confidence:** Testimonials from learners highlight a marked improvement in their entrepreneurial mindset, innovative thinking, and communication skills. One participant from a rural area noted, ‘this course has made me to a better person than I was before...’, while an entrepreneur starting a food stall in Penang stated the course greatly helped in understanding the intricacies of business.
- **High Engagement and Demand for Life-long Learning:** The programme's quality and impact are underscored by the fact that 95% of the learners requested more training, prompting discussions with public agencies to fund a next phase.
- **Building an Ecosystem:** The project established an entrepreneurial ecosystem for learners through a WhatsApp group, providing them with continued access to fellow participants, business consultants, academics, and practitioners for advice and support on their business journeys.
- This enhanced partnership between the HE institutions in the UK and Malaysia has also yielded other tangible results such as joint teaching programmes including a Marketing course for 294 undergraduate students involving LJMU, UofG, UM, and USM, and a dual-degree MBA-MSc programme between UM and UofG.

Furthermore, the project was an exemplar of successful EDI planning and implementation. The team strategically engaged with NGOs and government bodies, including the Ministry of Women, Family, and Community Development, to ensure the representation of under-represented groups. The results were outstanding and far exceeded the initial targets:

- Women's Participation: Against a target of 10%, women constituted 68% of the programme's participants.
- Disability Inclusion: The project achieved 16% participation from individuals with disabilities, surpassing the 10% target.
- Disadvantaged Backgrounds: An impressive 83% of learners were from disadvantaged backgrounds, dramatically exceeding the 10% target.

The project therefore provided significant access to educational and international networking opportunities for women and other marginalised groups.

The partners have expressed a strong commitment to continuing the collaboration beyond the British Council (Malaysia) grant funding, with plans to expand the KECEKAPAN project both within Malaysia and internationally. The project's legacy is secured through several key achievements. It has created enormous goodwill and opportunities for the partner institutions to engage with the wider community and policymakers, including ongoing discussions with public agencies on improving the well-being of low-income families. The main challenge encountered—an unexpected general election in Malaysia disrupting recruitment—was adeptly managed by pivoting to other NGOs, demonstrating the project's resilience and adaptability.

In conclusion, the KECEKAPAN project stands as a testament to the power of international collaboration in higher education. It delivered a transformative, inclusive, and highly effective entrepreneurial programme that has empowered individuals, built lasting institutional partnerships, and created a sustainable model for positive change.



## **Discussions**

### ***Theoretical Implications***

This research, based on an entrepreneurial education programme, examines how an EEP, adopting gamified pedagogy, enhances the entrepreneurial mindset, skills and self-efficacy of business starters from the marginalised communities and engages them in life-long learning.

Specifically, by soliciting the participant learners for their feedback to the 12-week entrepreneurial training programme, all three objectives were achieved.

Firstly, this research provides empirical evidence for existing research on EE outside the school/HE contexts, which is believed to be fragmented and insufficient (Kakouris & Georgiadis, 2016; Nabi et al., 2017; Looi & Maritz, 2021). KECEKAPAN project recruited learners from marginal communities in Malaysia. The project accessed the participants to education and knowledge that they would not ordinarily be able to access. Learners were required to take online courses covering 4 subjects related to opening/managing new ventures. Most of the learners have learned and practiced the entrepreneurial skills. Those results are consistent with the positive results of EEP in the HE context (Lekoko et al., 2012; Bacigalupo et al., 2016; Jardim et al., 2020; and Kim et al., 2020). The positive results of this project indicate that they can be extended beyond the school/HE contexts. However, because most of the learners in the cohorts of Penang and Johor Bahru came from different enterprises, it is unclear if the training created an entrepreneurial culture in their organisation, as indicated by Jardim et al. (2021). Despite of that, it was clear that the learners were leveraged in efficacy and skills in entrepreneurship, though the marginalised communities that they come from do not favour entrepreneurship.

Secondly, findings of this research align with current research which found that good results achieved through EEP can be ascribed to programs' conceptions pertaining to levelled objectives, competencies, connection with the socio-economic context, profile of the program facilitator, and activities carried out (Nieuwenhuizen et al., 2016; Barba-Sánchez & Atienza-Sahuquillo, 2018; Bell, 2016; Gibb & Price, 2019). We adopted a constructionist perspective that EE should be more learner-centred, stressing the interplay between individuals and society (i.e. via ethics, and social, economic and environmental responsibility) (Hägg & Gabrielsson, 2020). At the designing stage, the project team met with industry practitioners to understand industry needs so these can be incorporated in the training programme. As a result, an innovative competency-based programme through gamification, visualisation and distance learning was created with increased or enabled industry/commercial links building capacity and opportunities to engage with industry partners for the purpose of institutional alignment with industry needs, knowledge exchange, or other collaborative activity. Such a practice-oriented, competency-based design of the programme that engage learners, academics and industrial practitioners was highly appreciated by the recipients, particularly the small business owners. The enhanced entrepreneurship, skills and tolerance for risk among the participants from marginalised communities indicate the potential advantages of EEP not only in economic growth, but also in social value.

Moreover, findings of the research highlight the importance of e-learning technologies and gamification for engaging the learners, which facilitate flexible training and extend the opportunities outside the classroom, as argued by Gibson & Sodeman (2014), Soundarajan et al. (2016), Kim et al. (2020), and Bauman & Lucy (2021). The digitalised and gamified online lectures have enabled the learners, who are full-time employed, to arrange their time flexibly for learning, revision, exercising and

self-assessing. Learners can access those learning resources flexibly in time, location and manner. Our flexible, competency-based curriculum demonstrated a significant uplift in entrepreneurial skills development. We are currently monitoring the learners' progress. 95% of them have requested more training (online and workshop), and we are discussing with a few public agencies to find sponsors to fund the next phase.

### ***Practical Implications***

Practically, the implementation of the KECEKAPAN project underpins the findings of Gibson & Sodeman (2014) that, while lectures, videos and presentation materials can be provided online for learners to download and view at their convenience, face-to-face class allows students to collaborate and solve problems. The feedback to the one-day offline workshop has been overwhelmingly positive for 3 reasons:

- (1) The workshops complemented the online sessions and helped the learners digest and practice the skills obtained from the online lectures.
- (2) The workshops enabled the learners to interact with the academics and practitioners for experiential entrepreneurship.
- (3) The opportunities to engage in a network with industry practitioners and academics from world-class universities were highly acknowledged by the learners, and further increased their engagement. The main difference the KECEKAPAN training programme has made is that it gives learners access to local and international academic experts (82% according to the verbal feedback during the workshops). It also gives them (100% of the participants) a sense of high esteem being part of an overseas university student body, as the online course is on the University of Glasgow platform. We assume this is because most learners had no opportunity to attend university, let alone an overseas one.

The above findings support the conclusions of recent research on EE, that practice-based teaching enables learners to experience entrepreneurship (Neck et al. 2014). Particularly, the role of teachers is acknowledged not only for the guidance and interactions provided, but also because of the opportunities for engaging with international universities of reputation. This finding echoes the latest trend of the study in EE and gamification that EE learning process should adopt a broader scope for both the teaching methods and learning theories, highlighting the role of teacher, dynamics between action and reflection, and value created through EE when bringing gaps between theory and practice (Harms 2015; Hägg & Kurczewska, 2016; Balan et al., 2018).

### ***Limitations and Future Research***

This paper presents findings and conclusions from an EEP that adopts gamified pedagogy to enhance entrepreneurship of business starters from the marginalised communities in Malaysia. KECEKAPAN initiates future programmes and studies that deepens the understanding of EE and gamified pedagogy for minorities in emerging economies (Melo et al., 2023; Sieger et al., 2021; Soares et al., 2024). Practically, it generates a collaborative platform which internationally engages academics, businesses and learners for life-long learning. The next stage aims to extend its outputs as above to other developing countries and adapt them to an artificial intelligence context. Future research should take the diversity of the marginalised communities in terms of age, culture, and sectors into consideration when the EEP is designed and implemented. Secondly, as an exploratory case-study, results of this research require more quantitative work to explore their potential impact and further strengthen their causality.

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## Declaration of Interest Statement

The authors report there are no competing interests to declare

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## Figures

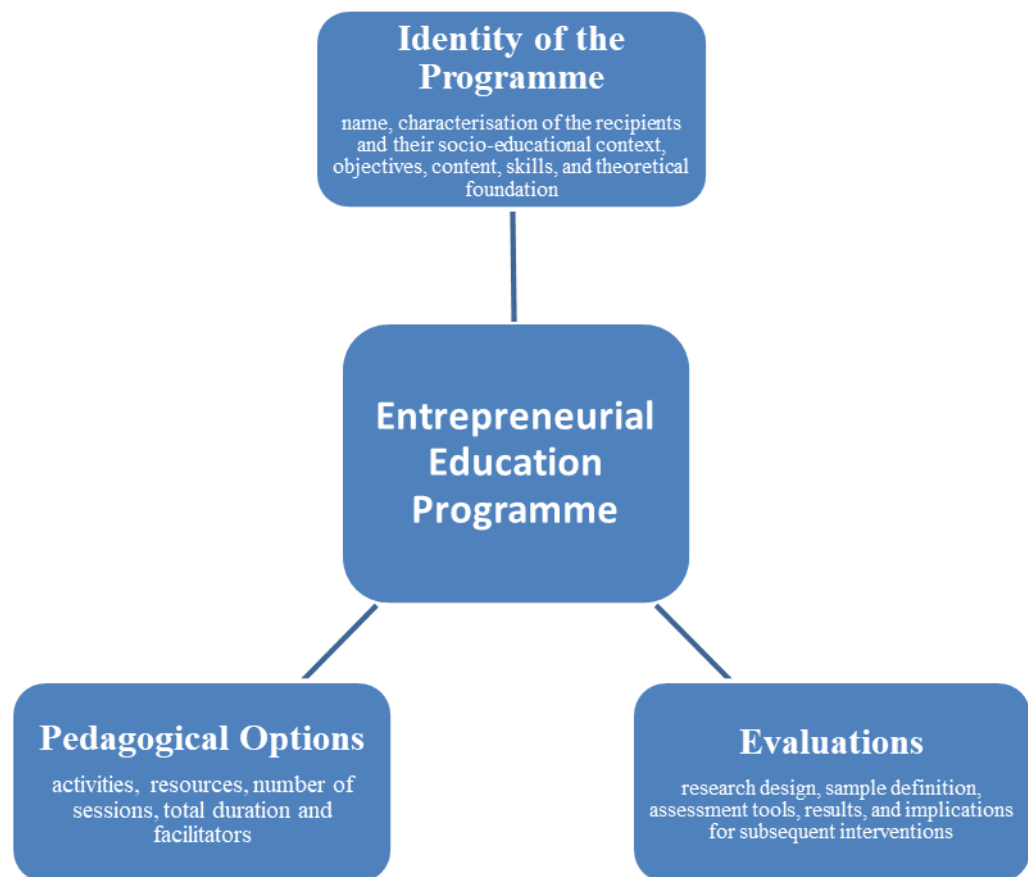


Figure 1. Dimensions of Entrepreneurial Education Programme (Jardim et al., 2021)

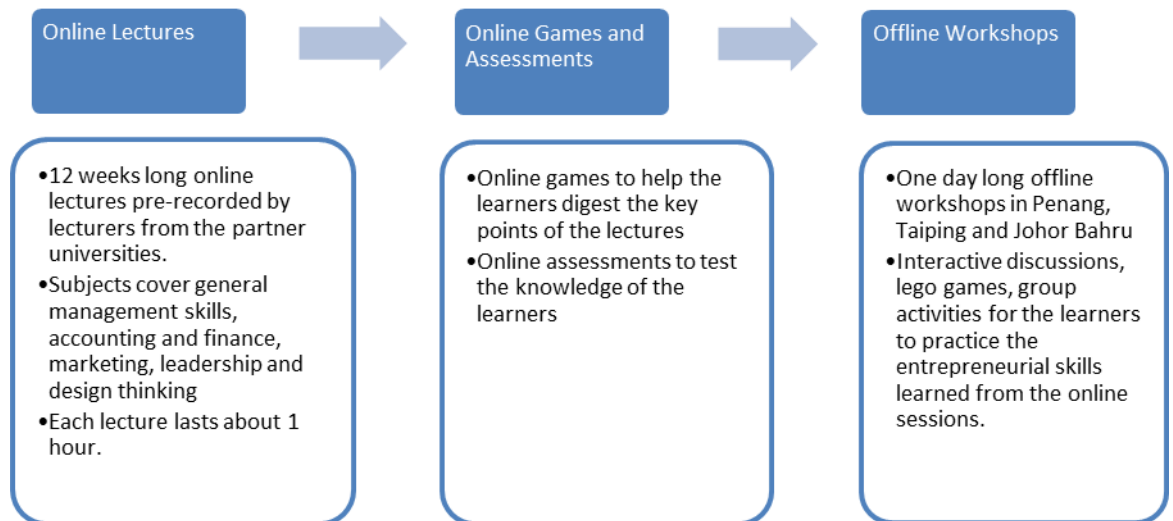


Figure 2. Learning Stages of KECEKAPAN Programme

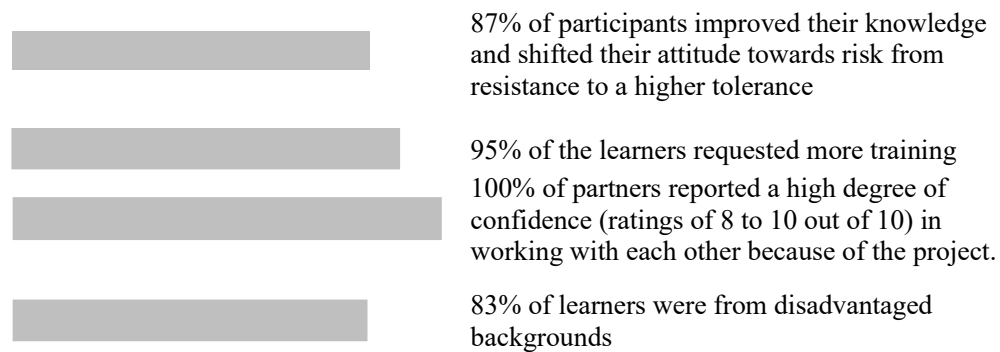


Figure 3. Summary of the Results