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## RESEARCH ARTICLE

# Developing Entrepreneurial Self-Efficacy through Hakka Culinary Innovation: An Experiential Learning Study in Higher Education

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## ABSTRACT

This study examines how Hakka culinary innovation can serve as an experiential entrepreneurship learning context in higher education. Using an exploratory mixed-methods design, data were collected from 19 university and postgraduate students who joined a Hakka creative cuisine competition through an entrepreneurial self-efficacy questionnaire and reflective responses. Results show that students reported strongest confidence in opportunity identification, followed by marshaling and implementing, while planning and commercialization was weakest. Qualitative findings indicate that students negotiated tensions between culinary authenticity and youth market preferences through flavor retention, visual modernization, and affective storytelling. The study informs hospitality, cultural-creative and entrepreneurship education curriculum design.

## KEYWORDS

Experiential learning; Entrepreneurial self-efficacy; Hakka food culture

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## 1. Introduction

Universities are increasingly expected to prepare students not only to reproduce professional knowledge but also to respond to uncertain, complex and culturally situated problems. This shift reflects a wider movement in higher education from knowledge transmission to the development of transferable capabilities, including innovation, problem solving, collaboration and entrepreneurial thinking (Biggs and Tang, 2011; Eyler, 2009). In hospitality, tourism and cultural-creative fields, students' future work will rarely involve the mechanical execution of fixed techniques. Rather, it will require them to interpret market needs, mobilise cultural resources, design experience value and translate ideas into feasible products or services. Entrepreneurship education is therefore relevant not only for students who intend to start businesses but also for students who need to create value in uncertain professional contexts (Lackeus, 2015; Pittaway and Cope, 2007; Rae, 2005).

Experiential learning and learning-by-doing are particularly relevant to entrepreneurship education because entrepreneurial work involves ambiguity, resource constraints and emergent problems. Kolb (1984) conceptualises learning as a cycle of concrete experience, reflective observation, abstract conceptualisation and active experimentation, while Schon (1983) emphasises reflection-in-action as a central feature of professional learning. When students engage in creative product development, branding, market presentation and reflective discussion, they are able to connect technical knowledge with judgement, interpretation and communication.

Despite extensive research on entrepreneurship education, entrepreneurial intention and entrepreneurial self-efficacy, less attention has been paid to how local cultural heritage can function as an entrepreneurial learning context in higher education. This gap is particularly important in hospitality and cultural-creative education, where students must do more than invent new products.

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They must also understand cultural meanings, decide which elements may be transformed, and negotiate the tension between cultural authenticity and market appeal. Hakka food culture offers a rich site for examining these issues. Its flavours and practices are historically linked to agricultural life, labour, frugality and preservation, yet these features may conflict with contemporary preferences for lighter, healthier and more visually appealing food. Culinary creativity requires the recombination of ingredients, techniques, flavours and aesthetic forms rather than the simple abandonment of tradition (Hornig and Hu, 2008).

Entrepreneurial self-efficacy (ESE) provides a useful concept for analysing the learning outcomes of this type of activity. Rooted in Bandura's (1977, 1997) social cognitive theory, self-efficacy refers to individuals' beliefs about their capability to perform specific tasks. In entrepreneurship research, ESE describes confidence in performing entrepreneurial roles and tasks (Chen et al., 1998). Because entrepreneurship involves opportunity recognition, planning, resource mobilisation, commercialisation, communication and teamwork, ESE is best understood as multidimensional rather than as a single global confidence score (McGee et al., 2009). Previous research also suggests that entrepreneurship education does not necessarily increase confidence across all dimensions; it can also make students more aware of their limitations (Oosterbeek et al., 2010; Piperopoulos and Dimov, 2015).

This study investigates a Hakka creative cuisine competition held in a Hakka community in southern Taiwan. The activity required students to transform traditional Hakka ingredients and culinary ideas into creative products with contemporary market appeal. The study asks: (1) How is students' entrepreneurial self-efficacy distributed across different task dimensions after participating in the activity? (2) What cultural and market tensions do students encounter when translating Hakka food heritage into modern culinary products? (3) How do resource constraints and critical incidents trigger bricolage and shape students' entrepreneurial learning experience?

## **2. Literature review**

### ***2.1. Experiential entrepreneurship learning in higher education***

Experiential learning emphasises the transformation of experience into knowledge through action and reflection. Boud et al. (1985) argue that reflection allows learners to revisit experience, make sense of it and form meaning, while Moon (2004) highlights the role of reflective learning in turning fragmented experience into transferable understanding. In higher education, authentic tasks, reflection and aligned assessment can help students move from completing an activity to understanding the knowledge, skills and values embedded in that activity (Biggs and Tang, 2011; Eyler, 2009; Herrington et al., 2009).

Entrepreneurship education has similarly moved beyond classroom-based knowledge transmission. Pittaway and Cope (2007) argue that entrepreneurial learning should be grounded in action, experience and reflection. Neck and Greene (2011) further propose that entrepreneurship should be taught as a method: students learn by experimenting, acting, creating and reflecting. Systematic reviews show that entrepreneurship education outcomes depend on the fit among objectives, methods and evaluation indicators (Mwasalwiba, 2010; Nabi et al., 2017). Evidence also suggests that entrepreneurship education can contribute to entrepreneurial human capital, but its effects are shaped by course design and learning activities (Martin et al., 2013; Matlay, 2008; Souitaris et al., 2007).

### ***2.2. Entrepreneurial self-efficacy as a learning outcome***

ESE is a domain-specific form of self-efficacy that concerns the belief that one can successfully perform entrepreneurial tasks. Boyd and Vozikis (1994) link self-efficacy to entrepreneurial intention and action, and Zhao et al. (2005) show that self-efficacy mediates the relationship between entrepreneurial learning experiences and entrepreneurial intentions. Wilson et al. (2007) similarly identify ESE as important for students' confidence in entrepreneurial career options. These studies justify the use of ESE as a psychological indicator of entrepreneurial learning in higher education.

Importantly, ESE is multidimensional. McGee et al. (2009) distinguish entrepreneurial tasks such as searching, planning, marshaling, implementing and financial management. For hospitality students, this is especially important because confidence in culinary creativity or teamwork does not necessarily imply confidence in cost control, pricing or commercialisation. Kickul et al. (2009) also show that cognitive style influences entrepreneurial judgement and self-efficacy. A multidimensional ESE profile can therefore serve as a diagnostic tool for identifying both learning strengths and capability gaps.

### ***2.3. Cultural translation, culinary innovation and heritage-based learning***

Cultural innovation involves more than using heritage as a decorative symbol. Cultural entrepreneurship research shows that stories, meaning and legitimacy are important resources through which actors translate cultural elements into market value

(Lounsbury and Glynn, 2001; Khaire, 2017). Local food also carries heritage and place identity. Bessiere (1998) argues that traditional food can support rural development and heritage representation, while Sims (2009) shows that local food contributes to authenticity and place-based experience.

For students working with Hakka cuisine, the challenge is therefore not simply to create a new dish. They must decide which elements of Hakka food should be retained, which may be modified and how the resulting product can be communicated to younger consumers. Amabile (1997) suggests that creativity depends on domain knowledge, creative processes and motivation. In culinary contexts, this means that students need knowledge of ingredients, techniques, culture and consumer experience. The tension between traditional flavour and contemporary preference can also operate as productive task conflict. De Dreu (2006) shows that a moderate level of task conflict can support deeper information processing and innovation.

#### **2.4. Bricolage and learning under constraints**

Entrepreneurial activities often occur under resource scarcity and uncertainty. Baker and Nelson (2005) define bricolage as creating something from nothing by making do with available resources, while Fisher (2012) explains bricolage as an entrepreneurial logic particularly suited to constrained and uncertain conditions. In culinary product development, students may face ingredient shortages, equipment limitations, time pressure and team disagreements. Such constraints can be educationally valuable if they require students to make decisions, reallocate resources and develop alternative solutions.

Bricolage is linked to entrepreneurial learning because it gives students opportunities to develop mastery experiences, which Bandura (1997) identifies as a key source of self-efficacy. Hmieleski and Corbett (2006) also show that improvisational proclivity is associated with entrepreneurial intention. In the present study, resource constraints are therefore not treated as incidental difficulties but as learning triggers that may strengthen students' problem-solving confidence and entrepreneurial judgement.

### **3. Research methodology**

#### **3.1. Research design**

This study adopted an exploratory mixed-methods design. The quantitative component was used to describe students' ESE profile across three task dimensions, while the qualitative component was used to interpret students' cultural translation, cognitive conflict and problem-solving experiences. Given the small sample size, the quantitative data were analysed descriptively rather than inferentially. The purpose was not to generalise to all hospitality students but to identify patterns and learning implications within a situated educational activity.

#### **3.2. Research context and participants**

The research context was a Hakka creative cuisine competition held in a Hakka community in southern Taiwan. Students were asked to use traditional Hakka ingredients, culinary concepts or cultural elements to create dishes with contemporary market appeal. The activity required teams to design a product concept, prepare ingredients, cook, present the final product and explain its market potential. Each team also worked with local older Hakka women, which introduced intergenerational communication and local knowledge translation into the activity.

Nineteen undergraduate and postgraduate students participated in the study. They came mainly from hospitality and culture-related programmes and had basic culinary, hospitality or cultural-creative learning experience. The sample was purposive: only students who participated in the activity and completed both the questionnaire and reflection tasks were included. The study is therefore positioned as a small-scale, context-sensitive inquiry into experiential entrepreneurship learning.

#### **3.3. Questionnaire design and variables**

The quantitative data were collected using a nine-item ESE questionnaire. The scale was adapted primarily from Zhao et al. (2005), who define ESE as an individual's belief in their ability to perform entrepreneurial roles and tasks. The items were contextualised for culinary competition and heritage food innovation, drawing on Velu and Anuradha's (2024) use of ESE in heritage education and rural tourism contexts. The guiding prompt asked students to evaluate their confidence based on their experience in the Hakka creative cuisine competition. A five-point Likert scale was used, ranging from 1 (very low confidence) to 5 (very high confidence).

The core variable was entrepreneurial self-efficacy. It was operationalised through three dimensions. The first dimension, opportunity identification, assessed whether students could recognise the market potential of Hakka ingredients, create dish

concepts that met contemporary taste preferences and estimate consumer demand. The second dimension, planning and commercialisation, assessed confidence in pricing, marketing and cost estimation. The third dimension, marshaling and implementing, assessed confidence in overcoming technical challenges, persuading judges or investors and working with a team under competition pressure. The nine items were used as observed variables, and the three-dimension scores were calculated by averaging the item means within each dimension.

**Table 1. Questionnaire dimensions, variables and items**

| Dimension                      | Item code | Observed variable       | Adapted item                                                                                                                                        |
|--------------------------------|-----------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Opportunity identification     | ESE_1     | Opportunity recognition | I can identify new business opportunities for traditional Hakka ingredients such as kumquat sauce and preserved mustard greens in the youth market. |
|                                | ESE_2     | Creative ideation       | I can create previously unseen creative dish combinations to meet contemporary taste preferences.                                                   |
|                                | ESE_3     | Market sensitivity      | I can estimate university students' acceptance of and willingness to purchase this Hakka creative dish.                                             |
| Planning and commercialization | ESE_4     | Pricing strategy        | I can determine a suitable pricing strategy that makes this dish competitive in a campus restaurant.                                                |
|                                | ESE_5     | Marketing planning      | I can design a concrete marketing plan, such as social media promotion or tasting events, to promote this product.                                  |
|                                | ESE_6     | Cost control            | I can accurately estimate the cost structure of this dish, including ingredient costs and production time, to ensure its profit potential.          |
| Marshaling and implementing    | ESE_7     | Technical skill         | Even when facing special Hakka ingredients with strong flavours, I can find appropriate cooking methods to overcome technical challenges.           |
|                                | ESE_8     | Persuasion/pitching     | I can convince judges or investors that this creative dish has market development potential.                                                        |
|                                | ESE_9     | Teamwork                | Under competition pressure, I can communicate effectively with team members and complete the final product together.                                |

*Note. Authors' own work, adapted from Zhao et al. (2005) and contextualised using Velu and Anuradha (2024).*

### **3.4. Qualitative reflection and data analysis**

Qualitative data were collected through open-ended reflection prompts. The first prompt focused on heritage reinterpretation and asked students to describe the most significant cognitive conflict they experienced when transforming traditional Hakka ingredients into modern creative cuisine and how they balanced traditional flavour with young consumers' preferences. The second prompt focused on entrepreneurial resilience and asked students to describe a critical incident, such as technical failure, team conflict or resource constraints, and how overcoming the incident affected their confidence in future entrepreneurship or complex problem solving. Additional responses related to brand story and value proposition were used to examine students' marketing translation.

All direct quotations presented in the findings section were translated from Chinese into English by the authors. To protect participants' anonymity, students are identified using numerical labels such as Student 1 and Student 2. The quotations were selected to represent key themes emerging from the reflective responses, including cultural translation, cognitive conflict, resource bricolage and entrepreneurial learning.

Quantitative data were analysed using means and standard deviations. The three dimension means were calculated first, followed by item-level descriptive statistics to identify the specific observed variables that explained each dimension. Qualitative data were analysed inductively. The analysis involved open coding of reflection texts, grouping similar codes and developing themes related

to cognitive conflict, cultural translation strategies, resource constraints, teamwork and crisis response. Quantitative and qualitative findings were then integrated to interpret the ESE profile in relation to students' actual learning experiences.

#### 4. Results

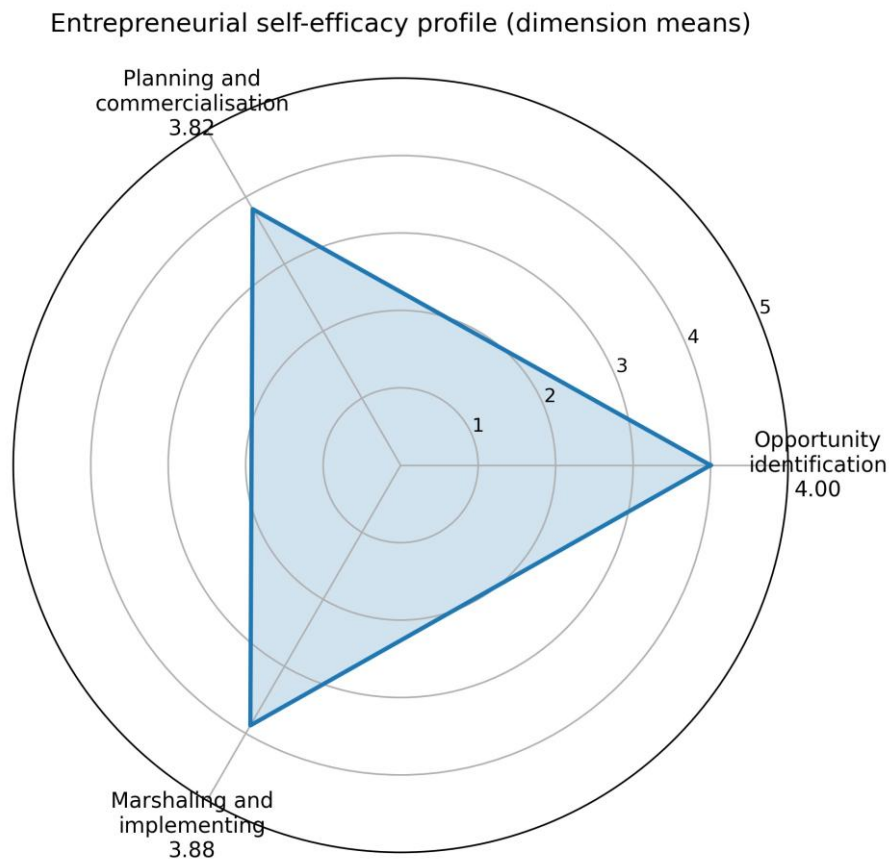
##### 4.1. Entrepreneurial self-efficacy across three dimensions

The three-dimensional analysis shows that students' ESE was not evenly distributed. Opportunity identification had the highest dimension mean ( $M = 4.00$ ), followed by marshaling and implementing ( $M = 3.88$ ). Planning and commercialisation had the lowest mean ( $M = 3.82$ ). The differences are modest, but they show a meaningful learning profile. Students appeared more confident in recognising the market potential of Hakka food and working with others to implement a product than in translating the product into a commercially viable offering.

**Table 2. Entrepreneurial self-efficacy by dimension**

| Dimension                      | Included items | Dimension mean | Interpretation                                                               |
|--------------------------------|----------------|----------------|------------------------------------------------------------------------------|
| Opportunity identification     | ESE_1-ESE_3    | 4.00           | Highest; confidence in recognising market potential and demand.              |
| Planning and commercialisation | ESE_4-ESE_6    | 3.82           | Lowest; weaker confidence in pricing, marketing and especially cost control. |
| Marshaling and implementing    | ESE_7-ESE_9    | 3.88           | Middle; supported by teamwork but limited by technical transformation.       |

*Note. Authors' own work.*



**Fig. 1. Three-dimensional entrepreneurial self-efficacy radar profile.**

*Note. Authors' own work.*

The radar profile visualises this pattern. Opportunity identification forms the strongest point of the profile, suggesting that students could see how traditional Hakka ingredients might be repositioned for younger markets. This result is consistent with the qualitative data, in which students discussed colour, plating, social media appeal and youth-oriented taste preferences. Marshaling and implementing occupied a middle position, indicating that students had some confidence in technical problem solving, pitching and teamwork, although this dimension contained internal variation.

Item-level results clarify the nature of this variation. The strongest observed variables were opportunity recognition, market sensitivity and teamwork, each with a mean of 4.11. In contrast, the weakest observed variables were technical skill ( $M = 3.63$ ) and cost control ( $M = 3.68$ ). Pricing strategy ( $M = 3.89$ ) was higher than cost control, suggesting that students may have some intuitive sense of market price but less confidence in calculating food costs, labour time, loss rate and profitability. This gap is important for curriculum design because it indicates a break between creative product thinking and commercial feasibility.

**Table 3. Item-level descriptive statistics for entrepreneurial self-efficacy**

| Item  | Observed variable       | Adapted item                                                                                                         | Mean | SD   |
|-------|-------------------------|----------------------------------------------------------------------------------------------------------------------|------|------|
| ESE_1 | Opportunity recognition | I can identify new business opportunities for traditional Hakka ingredients in the youth market.                     | 4.11 | 0.66 |
| ESE_2 | Creative ideation       | I can create previously unseen creative dish combinations to meet contemporary taste preferences.                    | 3.79 | 0.71 |
| ESE_3 | Market sensitivity      | I can estimate university students' acceptance of and willingness to purchase this Hakka creative dish.              | 4.11 | 0.66 |
| ESE_4 | Pricing strategy        | I can determine a suitable pricing strategy that makes this dish competitive in a campus restaurant.                 | 3.89 | 0.74 |
| ESE_5 | Marketing planning      | I can design a concrete marketing plan to promote this product.                                                      | 3.89 | 0.74 |
| ESE_6 | Cost control            | I can estimate the cost structure of this dish, including ingredient costs and production time.                      | 3.68 | 0.95 |
| ESE_7 | Technical skill         | I can find appropriate cooking methods to overcome technical challenges associated with special Hakka ingredients.   | 3.63 | 0.76 |
| ESE_8 | Persuasion/pitching     | I can convince judges or investors that this creative dish has market development potential.                         | 3.89 | 0.66 |
| ESE_9 | Teamwork                | Under competition pressure, I can communicate effectively with team members and complete the final product together. | 4.11 | 0.81 |

*Note. Authors' own work.*

These findings support the multidimensional view of ESE (McGee et al., 2009). They also align with studies showing that experiential entrepreneurship education does not necessarily produce uniform confidence gains across all entrepreneurial tasks (Oosterbeek et al., 2010; Piperopoulos and Dimov, 2015). In this case, the activity helped students imagine and communicate cultural-market opportunities, but it also exposed weaknesses in cost analysis and technical transformation.

## **4.2. Cultural translation and cognitive conflict**

Qualitative reflections show that students did not merely replace ingredients or invent dishes. They experienced a cultural translation process in which Hakka food heritage, modern consumer preference and team creativity had to be negotiated. To preserve students' voices, the following translated quotations are presented as evidence of the four qualitative themes.

### **4.2.1. Traditional authenticity and market acceptance**

Students first encountered a tension between the cultural authenticity of traditional Hakka cuisine and the preferences of younger consumers. One student stated, "The biggest cognitive conflict was: if we reduce the oil and salt, will it still taste like Hakka food? But if we do not change it, young people may not like it" (Student 1). Another student similarly reflected, "When we changed the flavour into a modern creative dish, I wondered whether it was still the original food, and whether we should even change its

name" (Student 2). These responses indicate that students were not simply adjusting taste. They were judging which elements constituted the cultural core of Hakka cuisine and which elements could be adapted for contemporary consumers.

#### **4.2.2. Flavour-core retention and subtractive cooking**

To address this tension, students adopted a strategy of retaining the flavour core while modifying the form and intensity of the dish. As one student explained, "The way to balance the two sides was not simply to reduce one feature, but to transform it through cooking techniques" (Student 3). Another student noted, "I kept the original salty and aromatic flavour of preserved mustard greens, but reduced the amount of oil and paired it with fresher vegetables and acidity" (Student 4). These reflections suggest that students moved from merely reproducing tradition to actively interpreting tradition. They learned to identify which elements of Hakka cuisine should be preserved and how those elements could be translated into a contemporary culinary product.

#### **4.2.3. Visual form innovation and youth market communication**

The third theme concerned visual form innovation. Students recognised that younger consumers might respond not only to taste but also to colour, plating and social-media appeal. One student described a strategy of using local and natural ingredients to create a popular visual identity: "Fish paste combined with local dragon fruit juice became pink, and bamboo charcoal powder made it black, creating a Blackpink colour tone to attract young people" (Student 5). Another student explained, "The original seasoning of the dish could be retained, but the plating could be redesigned in a younger style and differentiated from similar products" (Student 6). These quotations show that students used visual language and popular-cultural references as a way of translating heritage food into a youth-oriented market context.

#### **4.2.4. Emotional storytelling and cultural value reconstruction**

Finally, students used emotional storytelling to reconstruct the value of Hakka cuisine. One student described the product goal as "turning grandma's taste into an everyday small happiness that young people would also enjoy" (Student 7). Another student framed the strategy as "repositioning Hakka traditional cuisine as a heritage-modern experience, focusing on nostalgia and authenticity" (Student 8). These responses show that students began to move from being dish producers to becoming value interpreters. They did not only make the dish more attractive; they attempted to explain why the dish was meaningful, memorable and marketable.

Overall, these qualitative findings extend culinary creativity research by showing that heritage-based culinary innovation involves more than flavour and technique. It also requires cultural judgement, visual translation and narrative communication. The cultural-market tension experienced by students functioned as a learning mechanism through which they practised translating local food heritage into contemporary entrepreneurial value.

#### **4.3. Bricolage, critical incidents and entrepreneurial learning**

The activity also generated learning through constraints. Students encountered equipment shortages, limited ingredients, missing items and time pressure. Under these conditions, they used alternative materials, adjusted cooking processes and redistributed team responsibilities. Such actions reflect entrepreneurial bricolage: making do with available resources to solve new problems (Baker and Nelson, 2005). Students' reflections suggest that overcoming these incidents helped them understand entrepreneurship as flexible action under constraint rather than as the execution of a perfect plan.

Intergenerational collaboration added another layer of learning. Local Hakka women often described cooking processes through embodied expressions such as doing it by feeling or adjusting until it is right. Students, however, needed measurable proportions, steps and timing for product development and presentation. This difference required students to translate local experiential knowledge into operational knowledge. The process helped students respect local knowledge while transforming it into a form that could be shared, repeated and communicated in a product development context.

### **5. Discussion**

The study contributes to several bodies of literature. First, it supports Bandura's (1977, 1997) argument that self-efficacy develops through mastery experience. Students' confidence was connected to completing tasks, overcoming resource constraints and reflecting on those experiences. Second, it extends ESE research by applying a multidimensional profile to a hospitality and cultural-creative education context. The gap between opportunity identification and planning and commercialisation shows why ESE should not be treated as a single score.

Third, the study extends cultural entrepreneurship and heritage learning research. Consistent with Lounsbury and Glynn (2001), students used stories to construct market value and legitimacy. Consistent with Bessiere (1998) and Sims (2009), local food served as a medium of authenticity and place-based meaning. The study adds that, in higher education, heritage food can become a learning platform through which students practise cultural interpretation, product development and market communication. Finally, the study extends bricolage theory by showing that resource constraints in a course or competition can be deliberately understood as pedagogical triggers for entrepreneurial learning.

### **5.1. Curriculum design implications**

The study offers several implications for higher education. First, entrepreneurship education in hospitality should move from product completion to value creation. Assessment should not focus only on the finished dish but should also include value proposition, target market, cultural interpretation and commercial feasibility. Second, cultural-creative culinary courses should integrate cost accounting, pricing strategy and market validation. Students' lower confidence in cost control indicates a need for instruction in food-cost percentage, ingredient loss, labour time, break-even thinking and pricing simulation. Third, experiential entrepreneurship learning should include authentic constraints. Limited budgets, restricted ingredients, time pressure and required alternative plans can help students practise resource mobilisation and decision making under uncertainty. Fourth, local cultural heritage can be used as an interdisciplinary learning context that connects hospitality skills, cultural understanding, social responsibility and entrepreneurship. Finally, intergenerational collaboration should be designed as a learning component rather than as an informal add-on, because it helps students translate embodied local knowledge into communicable product knowledge.

### **5.2. Limitations and future research**

This study has limitations. The sample included only 19 participants from a single activity, and the findings should not be generalised to all hospitality or higher education contexts. The study used post-activity data and did not include a pre-test, so it cannot determine changes in ESE over time. The questionnaire relied on self-reported confidence, which may be influenced by social desirability or the emotional effects of the event. Future research could use pre- and post-test designs, larger samples, multiple institutions and additional sources such as teacher assessment, peer assessment, consumer feedback or sales simulations. Longitudinal studies could also examine whether heritage-based experiential entrepreneurship learning influences students' later career choices in cultural-creative industries, hospitality entrepreneurship or place-based social practice.

## **6. Conclusion**

This study examined how a Hakka creative cuisine activity functioned as an experiential entrepreneurship learning context in higher education. The findings show that students' ESE formed a differentiated profile. Opportunity identification was strongest, indicating that students were able to recognise the market potential of Hakka food heritage. Planning and commercialisation was weakest, especially because cost control was one of the lowest item-level scores. Marshaling and implementing occupied a middle position, supported by students' confidence in teamwork but limited by lower confidence in technical transformation.

The qualitative findings explain this profile. Students developed cultural translation strategies through the tension between authenticity and market appeal. They also developed problem-solving confidence through bricolage under resource constraints. Overall, the activity supported students' movement from recipe execution toward value creation. Students did not simply make dishes; they interpreted culture, imagined consumers, designed product meanings, considered costs and communicated market potential.

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