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A mixed-methods study on the impact of experiential financial education on Chinese students' financial literacy and wellbeing

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ABSTRACT

This study examines the impact of experiential financial education on financial literacy and wellbeing among Chinese university students. In response to the growing demand for practical financial skills in China, where traditional financial education often focuses on theory, a mixed-methods approach with a sequential explanatory design was used. The quantitative phase employed a quasi-experimental method, involving an experimental group (EG) receiving experiential education and a control group (CG) following traditional methods, each with 60 students recruited through purposive sampling. Data on financial literacy and wellbeing were collected via pre- and post-intervention questionnaires. To gain deeper insights, qualitative interviews were conducted with nine students using voluntary sampling. The quantitative results showed that the EG significantly outperformed the CG in financial literacy (knowledge, behavior, and attitude) and financial wellbeing (security, resilience, control, and freedom of choice). Qualitative findings reinforced these results, revealing themes such as the practical application of financial knowledge, increased confidence, higher engagement, and the relevance of lessons to real-world financial challenges. Overall, the study underscores the importance of incorporating experiential learning into financial education to boost literacy and wellbeing, providing valuable insights for regions where practical financial education is still evolving.

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1. INTRODUCTION

In today's increasingly complex financial landscape, the need for financial literacy has never been more critical, particularly among university students who are on the cusp of managing their finances independently. Financial literacy, which refers to an individual's ability to understand and effectively use various financial skills, including budgeting, saving, and investing, is essential for making informed financial decisions [1]. Equally important is financial wellbeing, which encompasses an individual's sense of security and freedom when managing their financial resources, as well as their ability to meet current financial obligations and feel confident about their financial future [2], [3]. As financial challenges become more prominent, particularly among younger populations [4], the role of financial education in shaping both literacy and wellbeing has gained significant attention.

Financial literacy, specifically, encompasses three key components: financial knowledge, which is the understanding of basic financial concepts such as savings, investments, budgeting, and interest rates;

financial attitude, which reflects an individual's mindset, confidence, and outlook toward managing finances, including their approach to saving, spending, and financial planning; and financial behavior, which involves the actual financial actions and decisions individuals take, such as budgeting, saving regularly, managing debt, and making informed investment choices [5], [6]. On the other hand, financial wellbeing is typically assessed through four key dimensions: i) financial security (an individual's ability to meet their current financial obligations and feel confident that they can sustain their standard of living); ii) financial resilience (a person's capacity to recover from financial setbacks or cope with financial shocks); iii) financial control (the extent to which an individual feels in command of their financial situation); and iv) financial freedom of choice (an individual's ability to make life decisions) [3].

Financial literacy and wellbeing play a crucial role in individuals' ability to manage personal finances, make informed decisions, and achieve financial wellbeing. However, traditional approaches to financial education often focus on theoretical knowledge, neglecting the practical application of these concepts [6], [7]. This has led to students' limited financial literacy and wellbeing in various contexts of the world [8], such as China [7], [9]. In response to this limitation, experiential financial education has emerged as a more effective method for fostering both financial literacy and wellbeing. This approach integrates hands-on learning experiences, allowing students to engage in real-world financial tasks and apply financial concepts in meaningful ways [10], [11]. The foundation of experiential financial education is rooted in Kolb [12] experiential learning theory, which posits that knowledge is created through the transformation of experience. Kolb [12] model emphasizes active participation and reflection, suggesting that students learn more effectively when they are engaged in tasks that require them to apply theoretical knowledge. In the context of financial education, this contrasts sharply with traditional lecture-based methods where students passively absorb information. Experiential learning in finance encourages students to actively participate in financial simulations, budgeting exercises, and investment decision-making processes, helping them to internalize financial concepts more effectively [13], [14].

Another theoretical underpinning of experiential financial education is constructivism, which emphasizes that learners construct knowledge through active engagement with problems and tasks [15]. In financial education, this means that students should be exposed to real-world financial challenges such as managing budgets, evaluating investment opportunities, or planning for long-term financial goals [16]. These hands-on experiences enable students to apply theoretical knowledge in practical situations, fostering both financial literacy and confidence in financial decision-making. Experiential financial education also aligns with self-determination theory, as proposed by Deci and Ryan [17]. This theory suggests that individuals are motivated to learn when they have autonomy, competence, and a sense of relatedness in their learning process. In financial education, programs that offer students autonomy in decision-making—such as managing a budget or making investment choices—are more likely to engage students and improve their financial skills [18]. Empirical evidence supports this, with studies showing that students who participate in experiential financial education programs report higher confidence levels in managing their personal finances, a critical factor in achieving long-term financial wellbeing [19].

There is a growing body of research that highlights the effectiveness of experiential financial education in improving financial literacy. For example, Alshater and Othman [20] conducted a study comparing traditional financial education methods with experiential learning activities, such as investment simulations and budgeting games. The results showed that students who participated in experiential learning had significantly greater improvements in financial knowledge, particularly in areas related to saving and investing. This supports the idea that hands-on experiences allow students to engage with the material more deeply, resulting in better retention of financial concepts. Similarly, several researchers [21], [22] demonstrated that college students who participated in experiential financial education were more likely to make sound financial decisions, especially in areas like debt management and understanding credit. The research highlighted how activities like managing a simulated budget or making investment decisions in a mock stock market helped students understand the consequences of financial decisions in ways that traditional instruction could not. These findings suggest that experiential learning can offer a more comprehensive and engaging approach to financial education.

In addition to its impact on financial literacy, experiential financial education has been shown to improve financial wellbeing. Experiential financial education, by immersing students in real-world financial tasks, helps build the skills necessary for long-term financial wellbeing. Liu [7] examined the impact of experiential financial education on financial wellbeing and found that individuals who participated in these programs reported greater confidence in their ability to manage their finances and plan for their financial futures. Further supporting this connection, several studies [23], [24] found that experiential financial education positively influenced financial resilience by equipping participants with the tools to handle financial shocks. Participants who had engaged in hands-on financial planning activities were more capable of managing financial emergencies and planning for the future, a critical aspect of financial wellbeing. These

findings underscore the importance of experiential learning in promoting not just financial literacy, but also the long-term financial security and wellbeing of individuals.

However, despite the evidence supporting the benefits of experiential financial education, it remains an under-investigated area, particularly in certain regions and populations. While studies in Western contexts have shown that hands-on, practical approaches to financial education can significantly improve both financial literacy and financial wellbeing [22]–[24], there is a notable lack of comprehensive research exploring these outcomes in other parts of the world, such as China, where government policies and initiatives (e.g., education modernization 2035, national medium and long-term education reform and development plan outline) have sought to enhance financial education [25], [26]. The majority of existing research focuses on traditional, lecture-based financial education [27], [28], with limited attention given to how experiential learning might bridge the gap between theoretical knowledge and real-world application.

This gap in the literature is especially evident in the context of younger populations, such as university students, who are at a critical stage of financial development. As these individuals transition into adulthood, they are required to make important financial decisions—such as managing student loans, budgeting, and planning for future expenses—often without sufficient practical experience or guidance [29]. In response, Chinese universities are beginning to introduce financial education programs. However, most programs tend to focus on imparting theoretical knowledge [30], [31], which may not fully equip students to apply these concepts in real-life financial situations. Consequently, despite their imminent transition to financial independence, financial literacy rates among Chinese university students remain alarmingly low [27], [29], leaving many unprepared to handle the financial decisions they will face post-graduation [9]. Experiential financial education, which immerses students in real-life financial scenarios, could play a pivotal role in preparing them for these challenges by promoting more active engagement and critical thinking about financial matters [20]. Moreover, while the positive impacts of experiential learning are well-documented in other educational fields, such as science and engineering [32], [33], its application in financial education has yet to be fully explored and quantified [6], [22]. Research is needed to determine how different experiential methods—such as simulations, role-playing, and interactive financial planning tools—affect diverse aspects of financial literacy, including financial knowledge, attitudes, and behaviors, and how they contribute to financial wellbeing outcomes like security, resilience, control, and freedom of choice.

As such, the purpose of this study, underpinned by a mixed-methods approach, is to explore the impact of experiential financial education on financial literacy and financial wellbeing among Chinese university students. Specifically, the study aims to investigate how experiential learning enhances students' understanding of financial concepts and improves their ability to manage personal finances. The research will also explore students' perceptions of experiential learning as an educational tool, assessing its effectiveness in fostering both financial literacy and a sense of financial security. As such, the following research questions are proposed:

- Does experiential financial education influence financial literacy and wellbeing among Chinese university students?
- How do students perceive the value of experiential learning in improving their financial management skills?

This research is significant because it has the potential to inform the development of more practical and engaging financial education programs in Chinese universities [29]. By focusing on experiential learning, this study can provide insights into how universities might redesign their financial education curricula to better prepare students for real-world financial challenges. Ultimately, the findings from this study can contribute to a broader understanding of how experiential learning can empower students to achieve greater financial literacy and wellbeing, laying the groundwork for future educational innovations in financial management.

2. METHOD

2.1. Research design

The study adopted a mixed-methods approach underpinned by a sequential explanatory design. This enabled a more holistic view of the research questions [34]. The combination of quantitative and qualitative data allowed for a comprehensive analysis of not only the measurable impact of experiential financial education but also the personal experiences and perceptions of students, offering a well-rounded perspective on the efficacy of this educational approach in the unique context of Chinese university students.

Specifically, in the first quantitative phase, a quasi-experimental inquiry of method was conducted to assess the impact of experiential financial education on students' financial literacy and financial wellbeing. Two groups of university students were selected: the experimental group (EG) participated in an experiential financial education program, while the control group (CG) received traditional, lecture-based financial

education [35]. The course was titled as "Financial Education", which was a public, optional course available to undergraduates. A pre-test and post-test design was employed to measure changes in financial literacy and wellbeing across both groups, using validated scales specifically designed for this population. The data collected in this phase provided statistical insights into the effectiveness of experiential learning in improving students' financial knowledge and sense of financial security.

In the second qualitative phase, semi-structured interviews were conducted with a subset of students from the EG to explore their perceptions and experiences with the experiential financial education program. The interviews were aimed at gaining a deeper understanding of how students applied financial concepts learned through hands-on activities and how these experiences influenced their financial behaviors and attitudes [35]. The qualitative data were then analyzed thematically, allowing for a richer interpretation of the quantitative findings and providing nuanced insights into the role of experiential learning.

2.2. Participants

The study was conducted in a particular comprehensive university in China, located in a city wherein the local economy is rapidly developing, and students face increasing financial responsibilities and opportunities. The participants were undergraduate students from this university who were enrolled in various disciplines, reflecting a diverse range of academic backgrounds. The university was chosen for its representative student population, which includes a mix of students from urban and rural areas, providing a broad perspective on financial literacy and wellbeing among Chinese university students.

In the quantitative study, participants were recruited using purposive sampling to ensure a well-defined and relevant sample for evaluating the impact of experiential financial education. This sampling strategy enabled a thorough examination of how experiential financial education impacts financial literacy and wellbeing among Chinese university students [36]. The selection criteria were: i) participants had to be full-time undergraduate students with no prior formal financial education, ensuring that their engagement with financial concepts in this study represented their first structured exposure; ii) students majoring in finance, business, or related fields were excluded to eliminate any pre-existing financial knowledge that might skew the study's outcomes; and iii) participants had to be in their second or third year of study, as students at this stage are more likely to have taken on personal financial responsibilities, such as managing living expenses, student loans, or income from part-time work, making them ideal for assessing the practical application of financial education. Based on these criteria, two classes were selected for the study, and informed consent was obtained from all participants. One class was randomly assigned as the EG (N=60) and the other as the CG (N=60). The sample size was deemed sufficient for intervention studies [35], providing enough statistical power to detect significant differences between the EG and the CG.

Participants in the EG engaged in interactive financial education activities designed to simulate real-life financial decision-making, including budgeting exercises, investment simulations, and practical money management tasks. In contrast, the CG attended conventional lectures that focused on theoretical concepts of financial literacy. Demographic data, such as age, gender, major, and place of permanent registered residence (urban and rural), were also collected to account for possible influences on the participants' financial literacy and wellbeing, ensuring that any observed differences could be attributed to the educational intervention rather than external factors. According to Table 1, the participants were between 20 and 22 years old, with a generally balanced gender distribution. They majored in various fields, including education, media, engineering, and information technology, and most were from urban areas.

Table 1. Quantitative participants' demographic information

Group	Age	Gender	Major	Place of permanent registered residence
EG	20: 40% (N=24)	Male: 53% (N=32)	Education: 42% (N=25)	Urban: 87% (N=52)
	21: 35% (N=19)	Female: 47% (N=28)	Media: 37% (N=22)	Rural: 13% (N=8)
	22: 25% (N=17)		Engineering: 13% (N=8)	
			Information technology: 8% (N=5)	
CG	20: 43% (N=26)	Male: 52% (N=31)	Education: 37% (N=22)	Urban: 88% (N=53)
	21: 33% (N=20)	Female: 48% (N=29)	Media: 33% (N=20)	Rural: 12% (N=7)
	22: 24% (N=14)		Engineering: 18% (N=11)	
			Information technology: 12% (N=7)	

In the qualitative phase of the study, voluntary sampling was employed to select participants who were willing to share their experiences and insights regarding the impact of experiential financial education on their financial literacy and wellbeing. This process involved inviting students from the EG to participate in post-intervention interviews, with clear communication about the study's purpose and the opportunity to contribute to a deeper understanding of the educational impact. Those who expressed a genuine interest in

reflecting on their learning experiences were included, ensuring the collection of richer and more detailed qualitative data [36]. Consequently, nine participants were recruited for the post-intervention interviews. As shown in Table 2, the students consisted of four females and five males, all in their second or third year of study, aged between 20 and 22 years old, and majoring in different courses. The sample size was satisfactory for achieving qualitative saturation [37].

Table 2. Qualitative participants' demographic information

Participant	Age	Gender	Major
P1	20	Female	Education
P2	20	Female	Education
P3	20	Male	Engineering
P4	21	Male	Media
P5	21	Male	Information technology
P6	21	Male	Information technology
P7	21	Female	Media
P8	22	Female	Media
P9	22	Male	Engineering

2.3. Instruments

In the quantitative phase of the study, two questionnaires were used to measure the variables: the questionnaire on financial literacy and the questionnaire on financial wellbeing. As mentioned, financial literacy comprised three main components: financial knowledge, financial attitude, and financial behavior. Meanwhile, financial wellbeing was categorized into four constructs: financial security, financial resilience, financial control, and financial freedom of choice. The questionnaire on financial literacy was adapted from Banthia and Dey [38], consisting of 21 items on a five-point Likert scale ranging from strongly disagree (1 point) to strongly agree (5 points). To ensure it aligned with the study's focus on financial knowledge, attitude, and behavior, slight modifications were made to some items to better reflect the unique financial experiences of Chinese university students. For the questionnaire on financial wellbeing, items were drawn from various sources [39]–[41], which provided robust measures for each construct. This questionnaire also included 21 items measured on a five-point Likert scale. Adaptations were made to ensure the language and context were culturally appropriate for the student population, and to capture the specific financial challenges and opportunities that Chinese students face.

These two questionnaires underwent a pilot study before the main study to ensure their appropriateness for the target population. The questionnaires achieved satisfying face validity, as assessed by a panel of experts in the fields of financial education and behavioral economics, who confirmed that the items accurately reflected the constructs being measured. Construct validity was established through confirmatory factor analysis (CFA), which verified that the underlying dimensions of financial literacy and financial wellbeing were appropriately represented by the questionnaire items. The CFA results indicated a good fit for the model, confirming that the items effectively measured the intended constructs. Reliability was measured using Cronbach's alpha, which exceeded the threshold of .70 for both questionnaires, indicating a high level of internal consistency. This rigorous validation process ensured that the instruments were suitable for use in the main study, providing reliable and valid data for further analysis.

Semi-structured interviews were conducted at the end of the intervention with selected cases. The purpose was to gain deeper insights into the students' experiences with the experiential financial education program and explore how it influenced their financial literacy and wellbeing. The interviews aimed to capture the participants' reflections on how the hands-on learning activities affected their understanding of financial concepts, their attitudes towards financial management, and their perceived ability to apply these skills in real-world situations. An interview guide, adapted from Liu [7] and Zhao *et al.* [42], was used to ensure consistency across interviews while allowing for flexibility in responses. The guide included open-ended questions designed to probe the students' perceptions of the effectiveness of experiential learning, their challenges during the intervention, and the practical applications of the financial knowledge they gained. Additional follow-up questions were incorporated to allow participants to elaborate on their experiences with financial decision-making and their overall sense of financial control and security after the intervention. This qualitative data provided valuable context to the quantitative findings, offering a more comprehensive understanding of how experiential education impacted both financial literacy and wellbeing.

2.4. Data analysis

In line with the research questions, quantitative data collected from the pretest and posttest were analyzed using the statistical package for social sciences (SPSS). Based on the fulfillment of prerequisites for

parametric tests, independent samples t-tests were conducted to examine whether there were any statistical differences between the EG and the CG in terms of financial literacy and wellbeing. Paired samples t-tests were also applied to assess whether both the EG and CG made any progress within their respective instructional interventions. The combination of between-group and within-group comparisons allowed for a comprehensive analysis of the effectiveness of the experiential financial education program [43].

On the other hand, qualitative data from the semi-structured interviews were analyzed thematically. This involved coding and categorizing the data into key themes that emerged from the participants' responses, such as their perceived value of experiential learning, challenges encountered during the intervention, and the practical application of financial concepts in daily life. Thematic analysis allowed for a deeper exploration of the students' experiences and perceptions [44], complementing the quantitative findings by providing context and insight into how the experiential learning approach influenced their financial literacy and wellbeing. The integration of both quantitative and qualitative data offered a well-rounded perspective on the study's outcomes [34].

3. RESULTS

3.1. Quantitative findings

The independent samples t-test was first used to compare the pretest and posttest scores of the EG and CG. The descriptive statistics in Table 3 and the inferential statistics in Table 4 indicate that, before the study, although the means for the variables and corresponding constructs slightly differed between the two groups, these differences were not statistically significant ($p>.05$). This suggests that both groups had similar levels of financial literacy, financial wellbeing, and their respective constructs prior to the intervention. However, substantial differences were observed at the posttest stage. For financial literacy, the EG ($M=3.75$, $SD=.40$) significantly outperformed the CG ($M=2.74$, $SD=.39$), $t=10.73$, $p<.001$, $d=.39$), indicating a small effect size. The significant difference was also observed in financial knowledge ($t=5.69$, $p<.001$, $d=.62$), financial attitude ($t=7.96$, $p<.001$, $d=.66$), and financial behavior ($t=5.03$, $p<.001$, $d=.74$), with the EG achieving a higher level. Likewise, regarding financial wellbeing, the EG ($M=3.71$, $SD=.29$) scored significantly higher than the CG ($M=2.83$, $SD=2.89$) in the posttest, $t=12.34$, $p<.001$, $d=.30$. In terms of its dimensions, the EG also had a higher average than the CG in financial security ($t=4.53$, $p<.001$, $d=.63$), financial resilience ($t=6.71$, $p<.001$, $d=.54$), financial control ($t=4.86$, $p<.001$, $d=.69$), and financial freedom of choice ($t=8.29$, $p<.001$, $d=.59$).

Table 3. Descriptive statistics

Group		Financial literacy	Financial knowledge	Financial attitude	Financial behavior	Financial wellbeing	Financial security	Financial resilience	Financial control	Financial freedom of choice
EG	Mean (pretest)	2.723	2.66	2.80	2.71	2.764	2.89	2.86	2.51	2.80
	Mean (posttest)	3.753	3.63	3.89	3.74	3.707	3.43	3.71	3.89	3.80
	SD (pretest)	.408	.725	.833	.622	.326	.530	.845	.507	.406
	SD (posttest)	.399	.646	.676	.657	.294	.558	.622	.676	.632
CG	Mean (pretest)	2.704	2.66	2.74	2.72	2.800	2.86	2.94	2.54	2.86
	Mean (posttest)	2.743	2.74	3.09	2.86	4.02	2.829	2.86	3.09	2.63
	SD (pretest)	.394	.725	.701	.630	.363	.550	.873	.505	.550
	SD (posttest)	.388	.657	.702	.810	2.89	.302	.430	.702	.547

Table 4. Inferential statistics of independent samples t-test

Group		Financial literacy	Financial knowledge	Financial attitude	Financial behavior	Financial wellbeing	Financial security	Financial resilience	Financial control	Financial freedom of choice
EG-CG (pretest)	t	.199	.000	.311	.000	-.433	.211	-.417	-.236	-.495
	p	.843	1.000	.757	1.000	.666	.825	.678	.814	.622
	d	.401	.725	.770	.622	.345	.540	.859	.506	.483
EG-CG (posttest)	t	10.727	5.688	7.956	5.025	12.340	4.531	6.708	4.857	8.288
	p	.000	.000	.000	.000	.000	.000	.000	.000	.000
	d	.394	.615	.661	.737	.298	.633	.535	.689	.591

Then, the paired samples t-test was conducted to compare the potential progress made by the EG and the CG. According to Table 5, for the EG, the results indicated significant improvements in financial literacy (t=-11.05, p<.001, d=.99), financial knowledge (t=-5.84, p<.001, d=1.04), financial attitude (t=-6.18, p<.001, d=.89), and financial behavior (t=-6.83, p<.001, d=.55). Similarly, significant progress was seen in financial wellbeing (t=-12.99, p<.001, d=.78), as well as its sub-constructs: financial security (t=-4.12, p<.001, d=1.12), financial resilience (t=-4.55, p<.001, d=.84), financial control (t=-9.62, p<.001, d=.73), and financial freedom of choice (t=-8.13, p<.001, d=.43). These effect sizes indicated moderate to large improvements in the EG across all variables. On the other hand, the CG did not demonstrate significant improvements in most areas. The results for financial literacy (t=-0.66, p=.513) and financial wellbeing (t=-0.34, p=.733), as well as other sub-constructs (p>.05), showed non-significant results. However, an improvement was detected in financial control (t=-3.38, p=.002, d=.95) within the CG.

Table 5. Inferential statistics of paired samples test

Group		Financial literacy	Financial knowledge	Financial attitude	Financial behavior	Financial wellbeing	Financial security	Financial resilience	Financial control	Financial freedom of choice
EG	t	-11.053	-5.836	-6.179	-6.832	-12.999	-4.117	-4.547	-9.623	-8.131
(pretest-	p	.000	.001	.001	.000	.000	.000	.001	.000	.001
posttest)	d	.985	1.040	.891	.551	.780	1.115	.843	.728	.429
CG	t	-.661	-.502	.780	-.796	-.344	.780	.533	-3.381	1.486
(pretest-	p	.513	.619	.441	.431	.733	.441	.597	.002	.147
posttest)	d	.341	1.011	.867	1.061	.492	.867	.951	.950	.910

Overall, these findings suggest that the experiential financial education had a substantial impact on the financial literacy and wellbeing of students in the EG, whereas the CG, which received regular education, did not show the same level of progress. Although the CG still improved its financial control, a construct of financial wellbeing, the effect of regular financial education was less pronounced compared to experiential financial education, as evidenced by the between-group comparisons of the posttest, wherein the EG significantly outperformed the CG in various dimensions. As such, it could be maintained that experiential financial education, characterized by hands-on learning, interactive simulations, and real-world financial scenarios, was more beneficial in the study than regular financial education, which was typically characterized by theoretical instruction and passive learning methods.

3.2. Qualitative findings

The qualitative findings offer valuable insights into how students in the EG perceived the value of experiential learning in improving their financial management skills. The interviews revealed several key themes that explain the significant improvements observed in financial literacy and wellbeing in the quantitative findings. Students generally expressed that experiential learning provided them with a deeper and more practical understanding of financial concepts, which translated into more effective financial management skills. For example, one dominant theme was the practical application of financial knowledge. Many students highlighted that the hands-on learning approach allowed them to engage directly with financial tasks, such as budgeting, saving, and making investment decisions. These activities moved beyond theoretical learning, giving students the opportunity to actively practice what they had learned in the classroom [22]. One participant (P3) stated:

> "*It wasn't just about learning concepts—we actually had to apply them, like creating a budget and tracking expenses. That really helped me understand how to manage my money in real life*."

This hands-on experience provided students with an opportunity to connect their learning to real-world financial decisions, helping them better understand abstract financial concepts in a concrete way [10]. This enhanced practical understanding aligned with the quantitative findings, where significant improvements were observed in financial behavior and financial literacy, particularly in the areas of financial control and decision-making. Students were able to see the direct impact of their decisions and how small changes in budgeting or spending could improve their overall financial situation, reinforcing their learning in a meaningful way.

Another theme was increased confidence in financial management. Many students reported that experiential learning helped them feel more comfortable and confident when dealing with their finances. This

newfound confidence stemmed from having the opportunity to make financial decisions in a supportive learning environment where mistakes were treated as learning opportunities [6]. One student (P6) mentioned:

> "*Before, I didn't feel confident about managing my money, but after doing the exercises and seeing how the numbers worked, I feel like I know how to control my spending and savings.*"

This sense of empowerment is reflected in the quantitative data, which showed substantial progress in financial attitude and financial wellbeing, particularly in areas like financial control and financial freedom of choice. The experiential activities allowed students to practice real-life financial decisions in a safe, controlled environment, which bolstered their confidence in handling their personal finances outside the classroom [13]. Many students emphasized that prior to the intervention, they lacked the assurance to make sound financial decisions, but the experience of actively participating in managing finances during the course helped them overcome this barrier. This increased confidence was directly tied to their improvement in financial control, as seen in the quantitative results, where they felt more capable of managing their spending, budgeting, and saving effectively.

The theme of active engagement and interest was also prominent in the interviews. Students expressed that the experiential nature of the learning made the financial concepts more relatable and interesting, which motivated them to be more engaged in the learning process. Unlike traditional financial education, which often involves passive learning through lectures and textbook reading, the experiential learning approach actively involved students in the learning process, making it more dynamic and interactive [19]. One participant (P2) remarked:

> "*It was much more interesting to learn by doing, rather than just sitting and listening. I felt like I was really involved, and that made me want to keep learning.*"

This engagement likely contributed to the significant gains in financial resilience and security reported in the quantitative findings, as students who were more invested in their learning were better able to apply financial strategies to manage their finances. By actively participating in financial simulations and real-life scenarios, students were able to retain more knowledge and apply it in their personal lives [14]. This greater engagement fostered a deeper understanding of financial concepts and resulted in more meaningful learning experiences [29], as evidenced by the improvements in financial security and financial resilience in the quantitative results.

Lastly, students emphasized the relevance to real-world financial challenges. They noted that experiential learning helped them connect abstract financial theories to practical, everyday financial decisions. As one student (P9) said:

> "*We learned things that I can actually use in my daily life, like managing a budget or planning for unexpected expenses.*"

This practical relevance explained the observed improvements in financial resilience and financial wellbeing, as students were better equipped to plan for and handle real-world financial situations [45], a key outcome measured in the quantitative data. The alignment of learning content with real-life financial challenges made the lessons not only more engaging but also more useful for the students. They appreciated the fact that the financial management skills they learned could be immediately applied to their personal circumstances, such as saving for future needs, managing debt, or handling financial emergencies. This practical relevance deepened students' understanding of financial concepts, as they saw first-hand how these skills could positively impact their financial wellbeing [46].

In summary, students in the EG perceived experiential learning as highly valuable in improving their financial management skills. They attributed their improved financial literacy and wellbeing to the practical, hands-on nature of the learning, which not only increased their understanding but also enhanced their confidence and engagement with financial management. Through experiential learning, students developed a deeper appreciation for the importance of financial literacy and gained the skills necessary to manage their finances effectively. These qualitative findings directly explained the significant quantitative gains observed in the study. The integration of theory and practice allowed students to develop both the knowledge and the practical skills required to achieve financial success [6], reinforcing the effectiveness of experiential financial education in fostering meaningful improvements in financial literacy and behavior.

4. DISCUSSION

The quantitative findings of this study demonstrate that experiential financial education significantly improved both financial literacy (knowledge, behavior, and attitude) and financial wellbeing (financial security, resilience, control, and freedom of choice) among Chinese university students, in line with previous studies. Research has consistently shown that hands-on, experiential learning approaches, such as those used in this study, are more effective at enhancing students' financial competence than traditional lecture-based methods [10], [23], [24], [46]. The results of this study confirm that students who participated in experiential financial education not only gained more financial knowledge but also developed better financial behaviors and attitudes, similar to previous findings [3], [47], which reported improved financial practices through active engagement in financial tasks.

The improvements in financial wellbeing observed in the EG further support the idea that experiential learning fosters greater financial control, security, and resilience, as shown in earlier studies [2], [11]. The experiential approach used in this study allowed students to apply theoretical knowledge in practical settings, enabling them to make more informed and confident financial decisions, which in turn contributed to their sense of financial wellbeing. This is consistent with previous research suggesting that students who are more engaged in the learning process through real-world financial tasks develop a stronger foundation for long-term financial stability [48].

The qualitative findings provided a deeper understanding of how experiential financial education led to these quantitative improvements. Based on Kolb [12] experiential learning theory, the hands-on nature of the program allowed students to actively engage with financial concepts and apply them in practical contexts. Students reported that experiential learning helped them internalize financial knowledge more effectively than passive learning methods, explaining the significant gains in financial literacy and behavior. The transformation of experience into knowledge, as proposed by Liu [7] and underpinned by Kolb [12] theory, played a crucial role in helping students understand and retain financial concepts more thoroughly.

Moreover, the self-determination theory of Deci and Ryan [17] helps explain the increase in students' confidence and autonomy in managing finances, as reported in the qualitative findings. The experiential tasks gave students the opportunity to make financial decisions independently, fostering a sense of competence and self-confidence that was reflected in the improvements in financial attitude, control, and freedom of choice observed in the quantitative data. This aligns with the theory's emphasis on autonomy and competence as key motivators for financial learning and skill development [16], [46]. Moreover, the constructivist theory, particularly Vygotsky [15] emphasis on active learning, also supports the link between experiential learning and the improvements in financial wellbeing. The qualitative data suggested that students were more engaged in the learning process because they were directly involved in real-world financial tasks, such as budgeting and financial planning. This active engagement helped students connect theoretical knowledge to practical applications, which contributed to their increased financial resilience and security. By allowing students to experience the challenges and solutions of financial management first-hand, the experiential learning approach provided them with the tools needed to better navigate their personal finances.

Despite these positive findings, some unexpected results raise important questions for further consideration. For instance, although the CG showed minimal progress overall, there was a modest improvement in financial control. This suggests that traditional financial education, while less impactful than experiential methods [7], can still provide some foundational knowledge and skills that lead to improvements in specific areas. It is possible that the theoretical content delivered in the CG helped students grasp the basic concepts of managing their finances [30], [48], even though the absence of practical application limited the overall effectiveness. This finding implies that even conventional financial education has some value in enhancing students' financial management skills, particularly when it comes to understanding financial processes such as budgeting and monitoring expenditures.

Another unexpected outcome was the relatively smaller effect size in financial freedom of choice compared to other dimensions of financial wellbeing in the EG. While students in the EG reported improvements in other areas such as financial resilience and control, their perception of financial freedom did not increase as significantly. This raises the question of whether external factors, such as economic conditions or personal financial constraints [49], [50], influenced students' perceived freedom in making financial decisions, even after participating in the experiential program. It is possible that while students gained confidence in managing everyday financial tasks, they may still have felt restricted in making larger, long-term financial choices due to factors beyond their control, such as limited financial resources or uncertainty about future economic conditions [1].

These unexpected results highlight the complexity of financial education and suggest that, while experiential learning is highly effective, it may need to be supplemented with other forms of support to fully address students' financial freedom and long-term decision-making abilities. Future research could explore the influence of external economic or personal factors on students' perceptions of financial freedom, as well

as the potential benefits of integrating experiential education with additional resources or guidance on long-term financial planning. Additionally, the study also has some limitations that should be considered when interpreting the findings. One key limitation is the relatively small sample size and the focus on a single university, which limits the generalizability of the results to a broader population. While the study provides valuable insights into the impact of experiential financial education on Chinese university students, it remains uncertain whether similar outcomes would be observed in other educational institutions or regions with different student demographics and financial literacy levels. Additionally, the study did not account for external factors that could significantly influence students' financial behavior and decision-making, such as economic conditions, familial financial support, or personal financial constraints. These external variables can play a crucial role in shaping students' financial experiences and could affect the overall effectiveness of financial education programs. Future research should address these gaps by expanding the sample size to include students from multiple universities across different regions, allowing for more diverse perspectives. Moreover, future studies should incorporate an analysis of external economic and personal factors to better understand how these variables interact with financial education and influence students' financial outcomes. This broader scope would provide a more comprehensive understanding of the real-world applicability of financial education programs and help refine them to better suit the varying needs of students.

5. CONCLUSION

This mixed-methods study demonstrates that experiential financial education significantly improves both financial literacy, including financial knowledge, behavior, and attitude, as well as financial wellbeing, encompassing financial security, resilience, control, and freedom of choice, among Chinese university students. In the quantitative phase, the EG, which engaged in hands-on, practical financial tasks, showed greater improvements compared to the CG, which followed traditional lecture-based methods. These findings affirm the value of experiential learning approaches in enhancing students' financial management skills and fostering a deeper understanding of financial concepts. The qualitative findings further elucidate these quantitative results by providing insight into how students perceived the experiential learning experience. Students in the EG reported that the practical application of financial knowledge made abstract concepts more tangible, that experiential learning allowed them to actively engage with financial tasks, and that the hands-on experience fostered a more positive attitude towards managing finances. These qualitative insights explain the significant gains observed in the quantitative variables, demonstrating that experiential financial education not only equips students with knowledge but also enhances their practical skills and confidence in managing personal finances.

The findings have significant implications for teaching and the design of financial education programs. To maximize the effectiveness of these programs, educators should prioritize incorporating experiential learning opportunities, such as financial simulations, budgeting exercises, and real-world decision-making tasks, into their curricula. These hands-on activities not only improve students' knowledge retention by allowing them to actively engage with financial concepts but also help develop practical skills that are directly applicable in real-life financial scenarios. Such an approach fosters a deeper understanding of financial principles and equips students with the ability to make informed financial decisions with confidence. Furthermore, financial education programs should be designed to offer students autonomy in their learning processes, allowing them to practice making financial decisions in a safe environment where they can learn from their mistakes. This experiential practice helps build their confidence and promotes a greater sense of financial control, which is crucial for long-term financial wellbeing. By focusing on interactive, engaging, and practical financial education experiences, institutions can better prepare students for the increasingly complex financial challenges they will encounter in the future, ensuring that they are not only knowledgeable but also competent and confident in managing their personal finances.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The researchers declared no conflicts of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

The research related to human use has been complied with all the relevant national regulations and institutional policies in accordance with the tenets of the Helsinki Declaration and has been approved by institutional review board of Universiti Kebangsaan Malaysia.

DATA AVAILABILITY

The data used in the study are available from the correspondence author [YZ], upon reasonable request.

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