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The Relationship between Undergraduate Students' Understanding of Experiential Learning and Entrepreneurship Skills in Shandong China

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Abstract

One of the most important problems that higher education institutions are facing today is how to prepare the students with practical entrepreneurial skills, the traditional lecture-based methods only offer very little of the experiential learning. This mismatch is the reason graduates are not ready for working life. This research is aimed at exploring the relationship between undergraduates' understanding of experiential learning and their levels of entrepreneurial skills. A correlational design with a quantitative approach, engaged 384 undergraduate students from eight universities in Shandong Province as the sample. A structured questionnaire was used to link the two constructs, namely, experiential learning and entrepreneurial skills. Pearson's correlation and regression analysis used for the purpose of identifying the direction and degree of the relationship. The reported findings clearly highlight high correlation between experiential learning and entrepreneurial skills ($r = 0.667$, $p < 0.001$). The smaller the number of independent variables, the easier it is to estimate. The variance of entrepreneurial skills that can be explained by the variable of experiential learning is 44.5% ($R^2 = 0.445$), which is indicative of an effect of medium to large size. Indeed, the results support the strong link between experiential learning and entrepreneurial development. This outcomes suggests that the growth of the entrepreneurial skills comes not from theory but through experimental interactions. The findings of this study assert that the experiential theory of Kolb is still functional and practical, thus confirming the theory's relevance to the current education. Hence, the suggestion for higher education institutions is to employ a more practical-based teaching approach so as to make a more equal match between the theory and practice in the new curriculum. Suggestions should be offered for future studies in the students' other components of the learning process which might include attributes such as personal motivating qualities, the quality of the instructor, and the sociocultural environment.

Keywords: Experiential Learning, Entrepreneurship Skills, Undergraduate Students

Introduction

Experiential learning, as per Kolb's model for experiential learning introduced by Kolb (1984), is all about acquisition of knowledge from experiences and reflection. Gaining from direct participation and contemplating are the fundamental elements of experiential learning. The popularity of this technique has been growing within the field of entrepreneurship education because it can impart a wide range of practical skills like adaptability, innovation, and problem-solving. It was found by present-day researchers that students who actively engaged in entrepreneurial practices like implementation of business initiatives, performing simulation activities, or doing internships were more open to the ideas of entrepreneurship and were in a better position to gain the necessary abilities (Machado & Dandolini, 2024; Wang, 2025).

Especially relevant in the current circumstance when higher education is required to prepare the future alumni quickly for the changes in the economy, the focus on the experiential learning is evident. Actions have been taken globally by universities to adopt experiential learning methods that can elevate students' abilities for entrepreneurship (Asiah Ali et al., 2024). Basically, research certainly demonstrates that the paradigm of experiential learning can help build entrepreneurial self-efficacy and entrepreneurial intention, the two factors that are important drivers of entrepreneurial behavior (Vankov & Wang, 2024). This clearly points to the necessity to grasp student and educator perspectives alongside the benefits of the experiential learning environment for a successful entrepreneurship education. From these studies, it is made clear that the difficulty can be the result of a lack of exposure to experiential learning experiences and the continuous reliance on lecture-oriented education (Yang et al., 2023; Liu & Zhang, 2024).

Higher education institutions face a major challenge in preparing students with practical entrepreneurial skills. Traditional lecture-based teaching offers limited real-world learning, leading to a gap between academic knowledge and workplace readiness. This study addresses this issue by exploring the relationship between undergraduates' understanding of experiential learning and their entrepreneurial skill development (Machado & Dandolini, 2024; Yang et al., 2023; Vankov & Wang, 2024, 2024). Experiential learning, as defined by Kolb (1984), emphasizes learning through experience, reflection, and action. In entrepreneurship education, it fosters real-world skills such as creativity, problem-solving, and adaptability through hands-on activities, social projects, and startup simulations. While prior studies confirm the benefits of experiential learning, few have examined its link to entrepreneurial skills in Asian contexts, especially China (Wang, 2025; Liu & Zhang, 2024). Additionally, there is limited research on how students' understanding of experiential learning affects their skill development. This study fills that gap by providing localized insights that can inform curriculum reform and entrepreneurship education strategies. Moreover, the current curriculum may not be reflective of entrepreneurial attitudes, especially those requiring risk-taking, creativity, and initiative, and thus may not encourage them. The aim of this research is to identify the relationship between undergraduate students' understanding of experiential learning and entrepreneurship skills.

Previous Research

The experiential learning theory developed by Kolb (1984) emphasizes learning through the process of acting and reflecting. By doing so, it allows students to obtain real-life skills like the ability to tackle problems and be flexible in their entrepreneurship education endeavors. According to the preceding arguments, experiential education is also beneficial in the entrepreneurship field. This wealth of knowledge is supported by multiple examples, such as the creation of cognitive ambidexterity at college, the latter being done via experiential programs (Babson College, 2023). With the help of different sources such as Northeastern University and the University of Maryland (Northeastern University, 2023; University of Maryland, 2023), the statement can be further emphasized. Through their study, Machado and Dandolini (2024) have discovered there are six different types of experiential practice. At the same time, using AI to augment the process of creative entrepreneurship learning (Wang, 2025).

The opportunities presented to the students in China were characterized by experiential learning as highly effective. It was reported that students could increase their self-efficacy and intention through exposure to experiential learning (Vankov & Wang, 2024). These abilities were seen to be the result of social entrepreneurship activities (Yang et al., 2023). The study proposed by Liu and Zhang (2024) was the first to introduce the 4H model, describing Head, Hand, Heart, and Help. With the help of the programs offered by HKU, not only does real-world exposure come easy, but also, at the same time, students' creativity and practical skills are being fostered (HKU Business School, 2023).

A cross-cultural study was conducted that also confirmed that experiential learning and entrepreneurship are interrelated and it is the latter that was instrumental in the participant's personal capability aspect and gaining new working skills (Machado & Dandolini, 2024; Vankov & Wang, 2024). Refer to those which put their key on de-emphasizing the human resource problem that technology is considered most conductive to the speed of the transition (Wang, 2025), rather they focus more on the creation of a new infrastructure to replace the traditional one besides a collective workforce of the nation (Liu & Zhang, 2024; Yang et al., 2023). The latest study results uncover the high efficiency of experiential learning as a means of growing entrepreneurship skills which is true for all the countries. On the one hand, the approaches taken to empower the stimulating effects of awareness and individual work are numerous but the end goals are the same across the globe. Wang (2025) wrote in detail about the different views of international floating online programs, theories, and applications of these programs. Cultural and institutional compliance has been envisaged as the advantage in market sustenance and economic prowess.

Research Design

The research applied a quantitative method, correlational research design. This research opted to employ a gather the opinions of 384 students. This was done by using the sample size selection method of Krejcie and Morgan (1970) and a structurally designed questionnaire. The correlation analysis investigated the relationship of the two concepts as the independent variable (IV) is experiential learning and the dependent variable (DV) is the entrepreneurial skills. Regression analysis represents also another way to the exploration of the relationship among the specific sub-constructs of the independent variable and the dependent variable.

Location, Population, and Sampling

The location of study was Shandong province, known for its deep Confucian roots as well as its rich cultural heritage. An empirical survey of local undergraduate university students' attitudes toward entrepreneurship and experiential education in this culturally meaningful context, with particular reference to Jinan, the educational hub of the province. They used a random sample of 384 undergraduate university students obtained from the population of Krejcie and Morgan (1970) selection. There are eight Shandong schools with a total of 136,037 undergraduate students. Shandong University of Finance and Economics (31,000), University of Jinan (22.527), and Shandong University (41,000) are recognized as the largest contributors. These schools epitomize the variety of the province's educational system.

Instrument

The questionnaire is composed of three sections: the demographic, experiential learning, and entrepreneurial skills sections. The Demographics unit collects basic data about age, gender, year in school, major, and university, and helps the researcher to contextualize the study. The Experiential Learning segment is formed according to John Dewey's experiential education theory (1938) and David Kolb's Experiential Learning Theory (1984) and deals with the demonstration of student learning through experience and reflection in five areas, namely reflection, application to practice, and combining knowledge. The Entrepreneurial Skills passage, drawing from Constructivist Theory of Learning (Piaget, 1972; Löbler, 2006) and Lazear's Theory of the Jack-of-All-Trades (2005), assesses the level of entrepreneurial motivation, adaptability, hands-on experience, and self-directed learning. All the items are applied a 5-point Likert scale by means of which student behavior and perceptions can be measured.

Results

This research is designed to illustrate the correlation between students' exposure to experiential learning and their progress in entrepreneurial skills. Table 1 below represents the main points of the events related to the entrepreneur skills (CTOTAL), and the experiential learning (BTOTAL) variables. It lists all the cases valid and missing (if any) that have been used in the analysis to verify the fact that the chosen dataset is consistent for the proposed statistical tests. What follows is the Case Processing Summary for Entrepreneurship Skills (CTOTAL) and Experiential Learning (BTOTAL). Table 1 below shows Case Processing Summary for Entrepreneurship Skills(CTOTAL) and Experiential Learning (BTOTAL)

Table 1

Case Processing Summary for Entrepreneurship Skills(CTOTAL) and Experiential Learning (BTOTAL)

Case Processing Summary for Entrepreneurship Skills(CTOTAL) and Experiential Learning (BTOTAL)

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Entrepreneurship Skills (CTOTAL)	384	100.0%	0	0.0%	384	100.0%
Experiential Learning (BTOTAL)	384	100.0%	0	0.0%	384	100.0%

Table 1 summarizes the cases, thereby providing a clear overview of the sample used for the study, which particularly specifies the two main variables: experiential learning (BTOTAL) and entrepreneurship skills (CTOTAL). Here a total of 384 valid cases for both dimensions is described. It must be underlined that the study had no missing cases (0% missing values). All the answers were recorded, and then analyzed statistically. The strength of the sample is considered as a key factor in the study's validity. Tabachnick and Fidell (2019) explained that the loss of the data due to missing points would inject the data with bias, and also decreases the statistical power of the data. When the study is having 100% valid data, it guarantees the straight-forwardness of the data collection process, not allowing the participants to act with bias or withdraw their data. Also, the disappearance of the missing cases supports the statistical methods, such as the correlation and regression analyses since if the sample is having missing values, the co-relations will not be accurately shown. A complete sample ensures the validity of the associations between experiential learning and entrepreneurship skills as if any missing values are there might result in the elimination of those associations. The high reliability and completeness of the sample, generally, increase the study's validity.

Table 2, The Distribution of Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL), presents a general view of participants' responses to the two measured constructs.

Table 2
Overview of the Distribution of Scores for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL)

Descriptives of the Distribution of Scores for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL)

			Statistic	Std. Error
Entrepreneurship Skills (CTOTAL)	Mean		103.9688	.65218
	95% Confidence Interval for Mean	Lower Bound	102.6864	
		Upper Bound	105.2511	
	5% Trimmed Mean		104.2014	
	Median		105.0000	
	Variance		163.331	
	Std. Deviation		12.78009	
	Minimum		78.00	
	Maximum		125.00	
	Range		47.00	
	Interquartile Range		15.25	
	Skewness		-.367	.125
	Kurtosis		-.427	.248
Experiential Learning (BTOTAL)	Mean		91.7188	.66748
	95% Confidence Interval for Mean	Lower Bound	90.4064	
		Upper Bound	93.0311	
	5% Trimmed Mean		91.6319	
	Median		91.0000	
	Variance		171.085	
	Std. Deviation		13.07995	
	Minimum		60.00	
	Maximum		125.00	
	Range		65.00	
	Interquartile Range		14.25	
	Skewness		.164	.125
	Kurtosis		.493	.248

Table 2 represents that on average standard students who received a score of 103.97 for CTOTAL (entrepreneurship skills) are at a moderate-to-high level of understanding for that. Standard Deviation = 12.78 reveals that the scores are dispersed to a moderate level. Range (78 to 125) shows that most people are still at a higher level, while some are very low. BTOTAL (Experiential Learning) Mean = 91.72 means that students are at a lower level of understanding about experiential learning than about entrepreneurship skills. Standard Deviation = 13.08 indicates the response to the questions by the same level as CTOTAL. Range (60 to 125) signifies that some students are at a low level of understanding, reflecting the different levels of exposure to experiential learning.

Table 3 below demonstrates the tests for skewness and kurtosis – the normality of the data of the variables. Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL) are tested for assessing the normality.

Table 3
Skewness and Kurtosis Normality Check for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL)

Skewness and Kurtosis Normality Check for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL)				
Variable	Skewness	Interpretation	Kurtosis	Interpretation
Entrepreneurship Skills (CTOTAL).	-0.367	Slightly left-skewed	-0.427	Slightly flatter distribution
Experiential Learning (BTOTAL)	0.164	Slightly right skewed	0.493	Slightly peaked distribution

Table 3 shows that the skewness of both the variables is nearly 0, which explains a distribution close to normality. The nearness of zero kurtosis further suggests that the data has a relatively normal distribution with no or very little change in the middle and already but not too tight tails. Choose Pearson's correlation because both variables are distributed near normal. The 95% Confidence Interval for CTOTAL (Entrepreneurship Skills- Skewness -0.367) is [102.69, 105.25] which corresponds to the Entrepreneurship Skills of the students. The author is around 95% sure that the mean score of entrepreneurship skills of the population will be within this range. In the BTOTAL (Experiential Learning- Skewness 0.164) case, the 95% Confidence Interval of the distribution is [90.41, 93.03]. The learner's real or typical mean in the learning process is most likely to be between 90.41 and 93.03. It is evident that a significant difference in the confidence intervals exists.

Table 4 shows the statistical evidence in the form of Pearson's Correlations for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL), which can be the basis of interpreting the relationship between the two pair of variables.

Table 4
Pearson's Correlations for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL)

Pearson's Correlations for Experiential Learning (BTOTAL) and Entrepreneurship Skills (CTOTAL)			
		Experiential Learning	Entrepreneurship Skills
Experiential Learning (BTOTAL)	Pearson Correlation	1	.667**
	Sig. (2-tailed)		<.001
	N	384	384
Entrepreneurship Skills (CTOTAL).	Pearson Correlation	.667**	1
	Sig. (2-tailed)	<.001	
	N	384	384

Correlation is significant at the 0.01 level (2-tailed).

Table 4 presents a significant positive correlation between experiential learning (BTOTAL) and entrepreneurship skills (CTOTAL) was revealed by a Pearson's correlation coefficient (r = 0.667, p < 0.001). The manifestation of the result that the students who have higher scores in the experiential learning work have also higher entrepreneurship skills. The p-value < 0.001 indicates that the correlation is statistically significant at almost 100% confidence level. (99% confidence level).

The summary regression model is exhibited by Table 5 to explore the impact of experiential learning (BTOTAL) on entrepreneurial skills (CTOTAL). The generated outcomes show a stronger positive relationship with an R value and an R Square, which is an indication of the magnitude of the relation influenced by experiential learning on the entrepreneurship skills.

Table 5
Regression Model Summary for the Impact of Experiential Learning on Entrepreneurship Skills

Regression Model Summary for the Impact of Experiential Learning on Entrepreneurship Skills									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.667[a]	.445	.444	9.52988	.445	306.798	1	382	<.001

a. Predictors: (Constant), experiential learning (BTOTAL)
b. Dependent Variable: entrepreneurship skills (CTOTAL)

Table 5 presents the regression depicts the relationship between learning from a specific source and the skills of a successful entrepreneur R = 0.667. R^2 = 0.445 shows that the goodness of fit of the model accounts for 44.5% of the entrepreneurship skills variance. Thus the model is actually determinant of 55.5% of the variance in the entrepreneurship skills (CTOTAL), in other words, the variance of 55.5% is explained by other reasons than this model was the result. The difference between the Adjusted R^2 (0.444) and the R^2, i.e. R^2 - 10, may stand for the fact that the model fits very well.

The data below in table 6 represents the outcome of the regression analysis about the dependency between experiential learning (BTOTAL) and entrepreneurship skills (CTOTAL).

The model is represented in such a way that the former is the explanatory variable, while the latter is the response variable.

Table 6
ANOVA Results for the Regression Model Predicting Entrepreneurship Skills from Experiential Learning

ANOVA Results for the Regression Model Predicting Entrepreneurship Skills from Experiential Learning						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27862.922	1	27862.922	306.798	<.001[b]
	Residual	34692.703	382	90.819		
	Total	62555.625	383			

a. Dependent Variable: Entrepreneurship Skills (CTOTAL)

b. Predictors: (Constant), Experiential Learning (BTOTAL)

The information presented in Table 6 of F = 306.798, p < 0.001 means the regression model is significant, which demonstrates that indeed BTOTAL (Experiential Learning) is a significant predictor of CTOTAL (Entrepreneurship Skills).
The data provided in Table 7 gives the history of the regression coefficients to analyze the impact of experiential learning (BTOTAL) on the entrepreneurship skills of (CTOTAL). The estimates are significant in a positive direction and suggest that the ability of experiential learning to improve entrepreneurship skills is tenable.

Table 7
Regression Coefficients Showing the Influence of Experiential Learning on Entrepreneurship Skills

Regression Coefficients Showing the Influence of Experiential Learning on Entrepreneurship Skills							
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	44.160	3.449		12.803	<.001		
	Experiential Learning	.652	.037	.667	17.516	<.001	1.000	1.000

a. Dependent Variable: Entrepreneurship Skills

Table 7 displays Constant (44.160, $p < 0.001$) → If experiential learning = 0, then entrepreneurship skills = 44.16. BTOTAL (0.652, $p < 0.001$) → Each 1-unit increase in experiential learning (BTOTAL) leads to the increase of entrepreneurship skills (CTOTAL) by 0.652 units. Standardized Beta (0.667) verifies the significant impact of BTOTAL on CTOTAL.
Table 8 below displays the collinearity diagnostics for the regression model for the prediction of entrepreneurship skills (CTOTAL) from experiential learning (BTOTAL).

Table 8
Collinearity Diagnostics for the Regression Model Predicting Entrepreneurship Skills

Collinearity Diagnostics for the Regression Model Predicting Entrepreneurship Skills					
				Variance Proportions	
Model	Dimension	Eigenvalue	Condition Index	(Constant)	BTOTAL Experiential Learning
1	1	1.990	1.000	.00	.00
	2	.010	14.113	1.00	1.00

a. Dependent Variable: Entrepreneurship Skills (CTOTAL)

Table 8 shows the outcome of a Tolerance of 1.000 and a VIF of 1.000 indicates that there is no multicollinearity problem. This is a solid proof that BTOTAL is a good statistical predictor in the model and that it is independent and valid.

Table 9 shows Residual analysis for the regression equation used to forecast entrepreneurial skills (CTOTAL). The statistics enable a proper test of the assumptions of linearity, normality, and homoscedasticity. These standardized values are in the acceptable ranges, and the mean residual of the whole set is near zero, which suggests the model meets the major assumptions for the linear regression.

Table 9
Residuals Analysis for the Regression Model Predicting Entrepreneurship Skills

Residuals Statistics or the Regression Model Predicting Entrepreneurship Skills					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	83.2853	125.6711	103.9687	8.52931	384
Residual	-26.80424	17.32502	.00000	9.51743	384
Std. Predicted Value	-2.425	2.544	.000	1.000	384
Std. Residual	-2.813	1.818	.000	.999	384

a. Dependent Variable: entrepreneurship skills (CTOTAL)

Table 9 outlines how the regression model was analyzed to forecast entrepreneurship skills (CTOTAL). Projected scores differ from 83.29 through 125.67, have an average of 103.97 and a spread of 8.53, which is a broad range of scores. The plot of residuals demonstrates that the differences between the predicted values and the actual values are symmetrically distributed around 0. The dispersion is from -26.80 (minimum) to 17.33 (maximum), and the arithmetic mean of the distribution is 0.000. It is, therefore, the situation where biases are produced systematically not indicated. The standardized predicted values and standardized residuals, however, indicate that the model has the desired properties of linearity, error normality, and homoscedasticity (all points are close to the line and have nearly equal standard deviations).

Figure 1 is a histogram that shows the standardized residuals of the model of the incorporation of entrepreneurial skills in the society. The graph represents the normality of the residuals, which is one of the main assumptions of linear regression. The almost normal collection usually suggests that the residuals in the model do not have any issues and they are ready for linear regression.

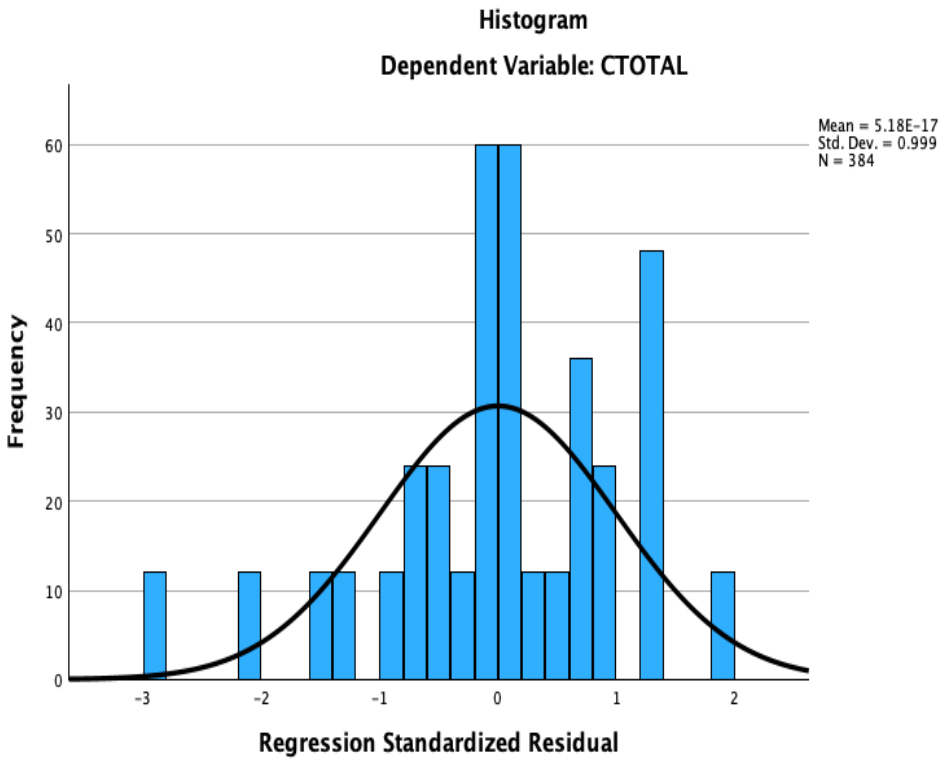

Figure 1
Histogram of Regression Standardized Residuals for Entrepreneurship Skills Model

Figure 1 demonstrates the histogram of standard regression residuals that can be used to test the assumption of normality of regression analysis. The histogram gives information about the distribution of the residuals, which is one of the vital assumptions in regression analysis. The graph presented in the figure is the Histogram of Regression Standardized Residuals for entrepreneurship skills (CTOTAL). The residuals are mostly symmetric but the existence of some deviations from the ideal normal distribution is quite vivid. As it is a perfectly fitted regression model, the mean of the residual is around zero (5.18E-17). The distribution of the residuals is equivalent to one. That means the scatter of the residuals around the fitted regression line is the spread of the standard deviation of the residuals = 0.999. Despite the black normal curve covers the histogram, some kernels are visible, and some high and low points with deviation from the line of normality. Basically, the residuals resemble a normal distribution although there is some deviation from normality. To fully examine the assumption of normality for the regression analysis, the researcher should also perform additional statistical tests such as Kolmogorov-Smirnov test, Shapiro-Wilk test, and Q-Q plots to be analyzed.

Figure 2 clearly depicts the Normal P-P Plot of the regression standardized residuals for the entrepreneurship skills model. This kind of a chart is used to check the normality assumption of the residuals. The plot shows the points are pretty close to the diagonal line hence the residuals are almost normal, and the regression model is properally.

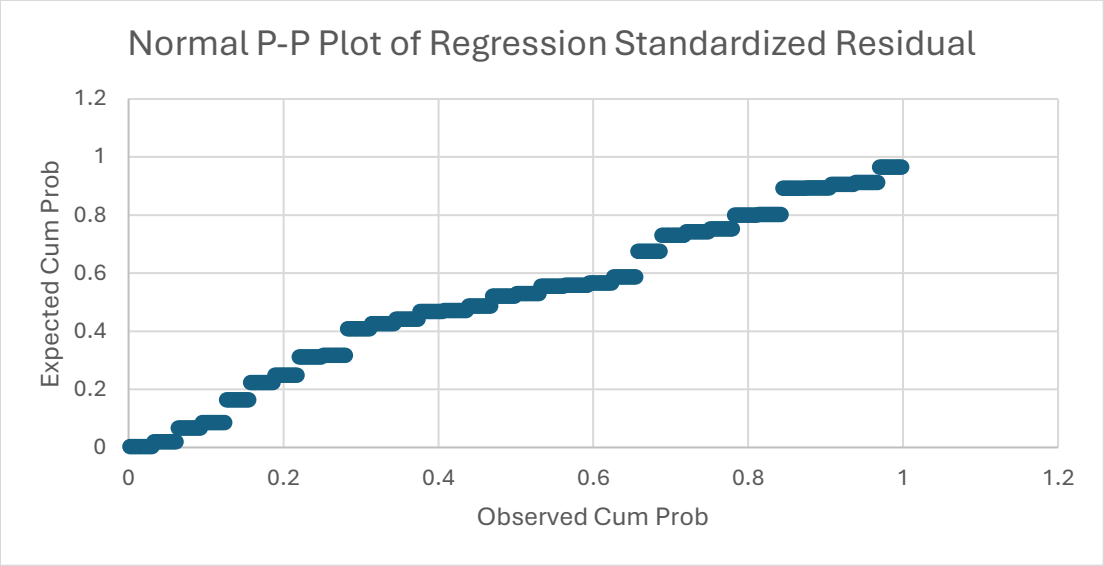

Figure 2
Normal P-P Plot Analysis of Regression Standardized Residuals

Figure 2 shows a normal probability-probability (P-P) plot for 2 was also drawn to test the normality of the regression model's residuals. By visualizing the estimated and actual cumulative probabilities, the diagnostic graph serves as a visual tool the tester would use to confirm that residuals are normally distributed, i.e., $\varepsilon \sim N(0, \sigma 2)$. The Normal P-P Plot of Regression Standardized Residuals for entrepreneurial skills (CTOTAL) demonstrates that a large number of the data points exhibit a good agreement with the diagonal reference line so that the assumption of near normality is quite acceptable. The presence of small erratic movements from the diagonal line, particularly at the extreme ends (lower and upper tails), shows that actual residuals may not have undergone perfect normality. Although the majority of the residuals conform to the expected normal cumulative probability line, some deviations from normality actually support the reasonable resumption of normality in regression analysis. The P-P plot represents almost perfect normality for the residuals, with just slight deviations on the sides. Besides a generally more correct assumption of normality, it is always a good practice to check whether the assumption of normality, for example, the Shapiro-Wilk test, the Kolmogorov-Smirnov test, and also the respective Q-Q plots, still holds with the regression model.

Figure 3 is a visual representation of the standardized predicted values against the standardized residuals in the form of a scatterplot.Such a chart is a great tool for checking if the regression model's assumptions about linearity and the homoscedasticity of the errors are met. The spread of the observed points across the graph suggests that the mistakes' size follows a particular pattern, and the requirement of homoscedasticity is unsatisfied, as a result, the model does not represent the population accurately.

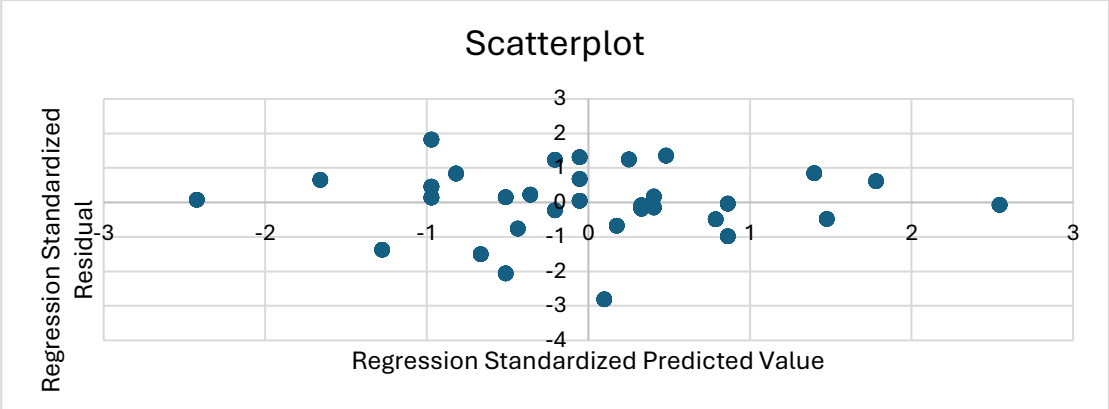

Figure 3

Scatterplot of Standardized Residuals vs. Standardized Predicted Values

Figure 3 presents the scatterplot above shows no clear pattern, suggesting homoscedasticity (equal variance of residuals). The conclusion for the regression, ANNOVA, P-P plots, and Scatterplots shows there is a strong, significant positive correlation ($r = 0.667$, $p < 0.001$) between experiential learning and entrepreneurship skills. Regression analysis confirms that experiential learning significantly predicts entrepreneurship skills ($p < 0.001$), explaining 44.5% of the variation. No multicollinearity issues, and residual analysis supports model assumptions.

Discussion

This study examined the correlation between undergraduate students' experiential learning and entrepreneurship skills. The research was done employing data gathering from 384 students (Table 1) on both experiential learning (BTOTAL) and entrepreneurship skills (CTOTAL) to ensure more reliable results. According to (Table 2), the descriptive statistics show that the students' scores were on a higher level for entrepreneurship skills ($M = 103.97$) than for experiential learning ($M = 91.72$) with a medium variability demonstrating differences in levels of experience and skill.

Checks for normality of data (Table 3) pointed out to the fact that BTOTAL and CTOTAL distributions have a bit of skewness, and a moderate level of kurtosis. The results showed that these distributions are appropriate for the Pearson's correlation test. Other scholars confirmed that verifying these assumptions is a crucial step in guaranteeing the educational research study is valid and trustworthy (Tabachnick & Fidell, 2019). Upon conducting the normality tests, it was found that both BTOTAL and CTOTAL followed approximately symmetric distributions, but CTOTAL was left-skewed and BTOTAL right-skewed. Therefore, the shape of the distribution was characterized by a medium kurtosis. These results validate the adoption of Pearson's correlation method, and hence allow the use of any other statistical method.

In table 4, Pearson's correlation demonstrates a strongly significant positive relationship between experiential learning and entrepreneurial skills at the 0.001 level of significance ($r = 0.667$, $p < 0.001$). This supports the claim that the more students use experiential learning methods, the great their entrepreneurial skills are. This is in line with the Babson College study and the University of Maryland study in that both studies illustrate, through example, the relationship between experiential learning and student and teacher cognitive flexibility, leadership, and innovation (Babson College, 2023; University of Maryland, 2023).

R^2 = 0.445 and R = 0.667 in the regression analysis (Table 5) further strengthen the earlier findings mentioned above. This finding makes it clear that 44.5% of the change in entrepreneurship skills in students may be directly related to their exposure to experiential learning and the other 55.5% being other factors such as their own motivation, past experiences, or the competency of the teacher. The F statistic of 306.798 ($p < 0.001$) in the (Table 6) ANOVA table implies that the regression model is significant. The result is also consistent with a study by Vankov and Wang (2024) that the results of empirical analysis found that the intentional activities of such programs led to significant increases in the self-efficacy and entrepreneurial intentions of Chinese students.

Regression analysis (Table 7) statistics showed that experiential learning had a positive significant influence on entrepreneurship skills ($\beta = 0.667$, $p < 0.001$). With each 1-unit increment in the experiential learning score, the entrepreneurship skills were improved by 0.652 units. The power of the effect, to some extent, confirms the evidence from Wang (2025).

Residuals analysis (Table 10) and collinearity diagnostics (Table 9) even served as the strongest support for the model. It was observed that tolerance and VIF values (1.000) indicated the absence of multicollinearity. According to the residual statistics, clearly, no significant regression assumptions were violated. The use of histogram (Figure 1), P-P plot (Figure 2), and scatterplot (Figure 3) with residual statistics clearly showed the residuals to be nearly normally and evenly distributed, confirming further the model's validity. Such results of this study also indicate that experiential education became more visible in the context of entrepreneurship education.

Conclusion

In sum, the findings validate the existence of a large, positive and statistically significant link between students' entrepreneurial skills and their exposure to experiential learning. This contributes to the theory of Kolb (1984) that experiential learning fosters the development of applied competence. The research offers support for the idea that experiential learning not only is beneficial but also necessary for undergraduates to be endowed with entrepreneurial competences. In cultural areas with a large population like Shandong, educational institutions should really maximize experiential programs to make the connection between practice and theory clearer. This will not only lead to the better performance of the students but the graduates will also be better equipped to contribute to the innovation-based economy. As universities in China continue to make efforts in entrepreneurship education, the introduction of experiential learning features into a curriculum would most especially in those culturally dense regions like Shandong be considered a primary strategy for improving entrepreneurial performance and narrowing the gap between theory and practice.

Implication and Suggestion

The study results underline the significance of experiential learning in the process of entrepreneurial skills development among undergraduate students. The combination of experiential and reflective types of education is the most important factor in providing the students with the necessary skills to confront the business challenges of the real world. This is a call for the universities in the region, especially those in Shandong, to move away from

the traditional lecture method and adopt a practice, experiential education that encourages innovativeness, taking risks, and being resilient.

For learning to be effective, universities are responsible for involving the educational process not only through the inclusion of internships, simulations, and entrepreneurial projects in the curriculum but as well faculty training in the applied principles of experiential learning, technological advancement, and the integration of the 4H model in the culturally responsive program design can be supportive of entrepreneurship education on the one hand. Such programs will not only reduce the gap between theory and practice but will also lead to the production of self-assured, capable, and employable graduates.

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