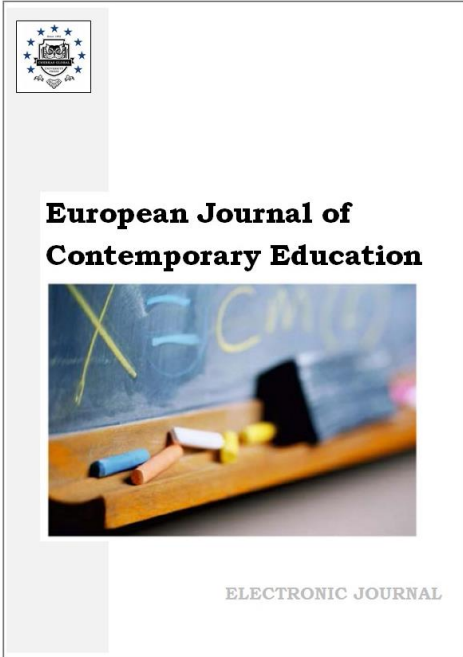




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The Problems of Contemporary Education

Impact of Entrepreneurial Learning on Entrepreneurial Self-Efficacy and Intention: Role of a Design-Based Entrepreneurship Education

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Abstract

The cursory views of several practitioners and academicians have suggested that design-based approaches have inherent features that increase their chances of impacting entrepreneurial intention (EI) and entrepreneurial self-efficacy (ESE). However, minimal empirical enquiries exist to affirm this viewpoint. The current study's overarching objective is to assess the influence of entrepreneurial learning (EL) acquired via a design-based entrepreneurial education (EE) on EI and ESE. We conducted a quantitative cross-sectional analysis of 207 participants' responses. Using stepwise multiple regression analysis, we assessed the relationship and impact of EL indicators on EI and ESE. Though both personal and social emergence learning and contextual learning have a significant positive relationship with ESE, the latter was the most important on the individual level. This relationship further affirms that collaborations, interactive learning, and experiences drawn from team projects are the most critical influencers of a student's ESE. The result of the stepwise multiple regression also affirmed that personal and social EL and ESE work better to influence EI. While the current study presently has implications for EE and entrepreneurship promotion, future studies may assess the impact of design-based EE on entrepreneurial actions rather than mere intentions.

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1. Introduction

A plethora of academic and industry research has emphasised the importance of entrepreneurship to economic development (Owusu-Ansah, Poku, 2012). Notably, several developing economies have specified (entrepreneurship) as the engine of growth and are contemplating strategies to promote the sector (Robb et al., 2014). In most of these countries, entrepreneurial education (EE) has been proffered as one of the suitable tools necessary for developing the requisite entrepreneurial competencies needed to increase venture development post-graduation amidst the burgeoning graduate unemployment (Owusu-Mintah, 2014). Extant literature affirms the impact of EE on intentions to start a business in the future (Entrepreneurial intention-EI) (Piperopoulos, Dimov, 2015; Nowiński et al., 2019). However, the fact that remains inconclusive is whether this is true for every type and model of EE.

Maresch et al. (2016) explain that recent EE studies have only shown general trends and failed to consider specific pedagogical approaches' effectiveness. Scholars like Martin et al. (2013) noted the need for scholars to consider assessing the "reciprocal relationship" between the quality of the entrepreneurial learning (EL) experience, EI, and entrepreneurial self-efficacy (ESE; competencies) in different educational settings. The reciprocal relationship between the quality of EL experience and EI in educational settings suggests a direct or circuitous two-way relationship between EL and EI. Also, the antecedent for such a relationship is often dependent on the nature of the educational system. Thus, different EE models may yield varied results. According to Lynch et al. (2019), EE models focusing on experiential learning methodologies have a higher chance of guaranteeing transformational learning, thereby increasing intention and action. Models that focus on experiential learning methodologies have this result because the practicality of the content allows the participants to experience a situation similar to the real world before they experience it and improves their chances of succeeding in similar circumstances (Von Kortzfleisch, 2013).

The current study investigates the above assertion as it assesses the relationship between a design-based EE (via EL), EI and ES. The design-based EE focuses on design thinking (Mueller, Thoring, 2012), the lean startup approach (Harms, 2015; Harms et al., 2015) and Customer Development Model (CDM) as its conceptual foundation to impact entrepreneurial knowledge. Though the cursory views of several practitioners and academicians have suggested that design-based approaches have inherent features in themselves that increase their chances of affecting EI and ES, minimal empirical enquiries exist to affirm this viewpoint. Furthermore, we sought to address the research gaps, emphasising its relevance by handling three distinct calls for further studies: firstly, we addressed Martin et al.'s (2013) call for studies to investigate the "reciprocal relationship" between the quality of EL, EI, and ES (competences) in educational settings (EE). Secondly, our study addressed the call by Rauch and Hulsink (2015) and Maresch et al. (2016), who explain that further studies should focus on assessing the impact of specific models of EE on EI. Last but not least, our paper speaks to Maresch et al.'s (2016) call for scholars to consider assessing the relationship between EE models that are design and lean startup-based and EI.

Hence, the study seeks to answer the research question, "what is the relationship between EL acquired via a design-based EE, EI and ES?" Four distinct hypotheses were drawn from this research question, which are discussed in the subsequent paragraphs. Reviews of the topical subjects (EE, EL, EI and ES) are provided, followed by a discussion of the methodological approach adopted for the study. The study results are presented with relevant discussions and implications for further studies.

Entrepreneurial Education

The subject of entrepreneurship remains a topical issue in recent times, though its earliest mention is believed to have been around the fifteenth century (Schumpeter, 1982). Since Schumpeter, different and prominent scholars have discussed several pertinent issues within the entrepreneurial field of study, including and not limited to EI, EE, orientation, growth, SME promotion etc. In recent times, scholars have emphasised EE as a critical subject in the entrepreneurial field of study because of its potential to impact EI and behaviour (Kuehn, 2008).

While scholars like Maresch et al. (2016) suggest the relationship between EE and intention depends on the type of education, and the context, very little empirical evidence exist to explain

how specific EE styles affect EI and how individual-level factors like ESE impact such a relationship. In the current study, the researchers seek to assess the impact of a simulation-based EE that fosters EL through its practical and “Do-Learn-Do” pedagogical approach on entrepreneurial efficacy and intention. Thus, to assess how a simulation-based EE impacts one’s ESE and intentions to undertake an entrepreneurial action.

Entrepreneurial Intention

The subject of EI has increasingly gained immense interest among scholars (Fayolle, Linan, 2014; Maresch et al., 2016). A Plethora of definitions have been postulated for the term and has popularly linked it to psychological theories and concepts like the theory of Planned Behaviour (Yang, 2013). Despite its popularity and progress as a field of study, the subject matter has been circuitously criticised by some scholars as not representing entrepreneurship (Frese, 2009; Engle et al., 2010). For example, Frese (2009) argues that entrepreneurship outcomes result from actions and not mere intentions, hence postulating that entrepreneurial action should be the starting point for theorising in entrepreneurship. In response to these critiques, EI scholars have also explained that intention is the best predictor of planned behaviour (action) (Krueger et al., 2000). In support of the latter, the current study also argues that entrepreneurial actions do not stand in a vacuum and are often the results of a series of cognitive processes (Wood et al., 2012), which includes intention. Similarly, Kautonen et al. (2015) highlight the relationship between EI and Entrepreneurial actions. Hence, the current study argues that the subject of EI is germane to the theorisation of entrepreneurship.

Entrepreneurial Learning

Globally, EL is beginning to attract attention among scholars, practitioners and policymakers (Minniti, Bygrave, 2001). Additionally, the popularity of the subject in recent literature has sparked its importance in EE (Rae, 2004). Learning theories have been at the fulcrum of EL and offer an understanding of the probable role learning as a consequence or antecedent may play in entrepreneurship. According to Kolb (1984), learning is an experiential process through which principles and ideas are derived and modified by experience. From the cognitive perspective, effective EL is defined as a problem-solving process focusing on acquiring, storing and using EL knowledge in the long-term memory (Young, Sexton, 1997). The present study suggests an aggregated learning theory that captures both cognitive and experiential views. From the tip of the Iceberg analogy, the current study alludes to a cognitive process of acquiring, storing and structuring knowledge as the base process beneath the tip of the iceberg. In contrast, the ‘tip’ reveals the modified experiences.

Additionally, an aggregated view of learning should be considered in light of the recent paradigm shift to a socially constructed sense of meaning and identity, which is currently shaping how people learn (Gergen, 1994; Rae, 2004). Thus, such a consideration allows researchers to understand how people learn, act, experiment, and redefine their sense of work in a dynamic development process. Furthermore, a review for social constructivism suggests that such learning is considered in the context of perceived, simulated, or actual environments.

Simulating the entrepreneurial environment is at the heart of the current study. We argue that a design-focused EE offers a platform for practising or testing the business startup processes through the aggregated perspective (cognitive and experiential), where the modified experience will be socially constructed and drawn from contextualised learning. This is because such a program offers a practical simulation-based approach that allows the participant to have first-hand entrepreneurial experiences, work with business teams and engage with the support environment.

2. Method

The current study focuses on three main factors: EI, ESE, and EL. We considered EL from the point of view of a design thinking-based EE at the tertiary level. The study population was first-year university students in Ghana taking a design-focused entrepreneurship course. The study was a cross-sectional analysis of participants’ responses (Saunders et al., 2003). The study seeks to address the following hypotheses:

1. There is a positive relationship between personal and social emergence learning and ESE.
2. There is a positive relationship between negotiated enterprise learning and ESE.
3. There is a positive relationship between contextual learning and ESE.
4. ESE moderates the relationship between EL and EI.

Participants

With a study population of 280 students, the current research had responses from 207 participants, suggesting a response rate of 75 %. Table 1 shows the participants' demographic features. According to the result of the study, 106 (51.2 %) participants were male, while 101 (48.8 %) were female. Concerning the age distribution, 170 (82.1 %) respondents, representing the majority, were between 18 and 20 years. This group was followed by those between the ages of 21 and 23, numbering 27 (13 %). Respondents aged between 15 and 17 and 24 and above were in the minority. They numbered 8 (3.9 %) and 2 (1 %).

Additionally, 83 (40.1 %) of the respondents were also enrolled in business administration, while computer science was the least populated major, with only 25 students (12.1 %). Engineering and MIS recorded 61 (29.5 %) and 38 (18.4 %) respondents respectively. To contextualise the study's results for the variance in the demographic features of the respondents, an analysis of variance was conducted to assess how the differences may affect the dependent variables.

Table 1. Demographic characteristics of Interview participants (N = 207)

Category	No. of respondents	Percentage %
Gender		
Male	106	51.2
Female	101	48.8
Age		
15-17	8	3.9
18-20	170	82.1
21-23	27	13.0
24 and above	2	1.0
Major		
MIS	38	18.4
Engineering	61	29.5
Business Administration	83	40.1
Computer Science	25	12.1

Measures

The study questionnaire initially had 33 items adopted from extant literature (Deakins, Freel, 1998; Rae, Carswell, 2000). These instruments were pretested on 10 students to assess reliability and validity. The questions in the study were mainly close-ended questions grouped under specific sub-scales. The questions were administered with a five-point Likert-type rating scale. The endpoints of the scale were labelled "completely unsure" to "completely sure". The scale rating points were: completely unsure = 1; relatively unsure = 2; neither unsure nor sure = 3; relatively sure = 4; completely sure = 5. The survey questionnaire was used to collect primary data on five subscales, namely, personal and social emergence, contextual learning, negotiated enterprise learning, EI and ESE.

Data Analysis

Owing to the study's goal to develop a model, the variables and constructs considered in the study were put through rigorous structural analysis to assess their reliability. In this respect, the study adopted a one-sample t-test, KMO and Bartlett's Test. Furthermore, the reliability of the constructs was further examined using exploratory factor analysis and Cronbach's alpha of the sub-scales (Gliem, Gliem, 2003). Variables and constructs with Cronbach's alpha values below the accepted standards were excluded from the study. In addition, the Pearson correlation matrix was done to identify the relationship between and among the predictors and dependent variables (Sherry, Henson, 2005) and possible signs of probable multicollinearity (Abor, 2008).

T-Test and Reliability Analysis

Table 2 shows the result of the t-test analysis, which displays the means and standard deviations of the variables used in the study. The mean scores suggest the extent to which the respondents are sure or unsure about the statements in the questionnaire. Thus, these scores show how each item performed from the respondents' viewpoint.

As shown in Table 2, the highest means were 4.31 (Develop new ideas), 4.23 (My future aspirations affect my entrepreneurial attitude), and 4.14 (Develop new products and services). These means suggest that the respondents were completely sure the design-focused EE had influenced EL and their ability to develop new ideas, products and services. They show that they agree that their future aspirations affect their entrepreneurial attitude. On the other hand, the lowest mean were 3.06 (How society sees me influences my entrepreneurial attitude); 3.23 (I am willing to start a business in the midst of several constraints and difficulties) and 3.30 (My entrepreneurial attitude has been affected by others perception of setting up a business). The two extreme sides (which are the highest and lowest mean) go to show that though the students completely agree their EL has influenced their ability to develop new ideas, products and services, they also opined that they are not clear if their entrepreneurial attitude is influenced by how society sees them.

Table 2. T-test of the statements in the questionnaires

Items	Mean	Std	t	df	ρ
My family plays a major role in my entrepreneurial attitude	3.45	1.205	41.228	207	000***
My previous experience influences my entrepreneurial attitude	3.41	1.174	41.739	207	000***
My future aspirations influence my entrepreneurial attitude	4.23	.941	64.644	207	000***
How society sees me influences my entrepreneurial attitude	3.06	1.276	34.485	207	000***
My entrepreneurial attitude has been affected by others' perceptions of setting up a business	3.30	1.169	40.615	207	000***
I believe the experience I've gained with my team will influence my entrepreneurial attitude	3.99	1.005	57.137	207	000***
I will be able to recognise opportunities in line with my team's simulation experience	3.95	.951	59.694	207	000***
I can say I have practical experience that can help me to know what to do in a future entrepreneurial endeavour	4.06	.964	60.585	207	000***
I am likely to start a business before I complete school	3.61	1.160	44.750	207	000***
I am likely to start a business immediately	3.60	1.148	45.164	207	000***

after school (at most one year)					
I am willing to start a business in the midst of several constraints and difficulty	3.25	1.212	38.548	207	000***
Develop new ideas	4.31	.690	89.505	207	000***
Perform financial analysis	3.91	.888	63.401	207	000***
Set and meet sales goals	4.05	.813	71.469	207	000***
Conduct market analysis	4.07	.818	71.409	207	000***
Develop new markets	3.94	.844	66.868	207	000***
Develop new products and services	4.14	.756	78.911	207	000***
Reduce risk and uncertainty	3.89	.781	41.228	207	000***
Conduct strategic planning	4.13	.809	41.739	207	000***

Notes. ***p < 0.001, **p < 0.01, *p < 0.05.

Table 3 shows the Bartlett test of Sphericity (Approx: Chi-square = 2651.102, df = 325, p < 0.000) and the KMO measure of sampling adequacy (Value of .888). This confirms a significant correlation among the variables, warranting the exploratory factor analysis (EFA) application. The table illustrates the results of the KMO test run for the data collected. The KMO statistic of .888 for the variables considered in the study suggests a higher possibility of inter-correlation between the variables, thereby affirming their validity for further analysis.

Table 3. KMO and Bartlett’s Test of the questionnaire

Test	Score
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.888
Bartlett’s Test of Sphericity Approx. Chi-Square	2651.102
df	325
ρ	.000***

Source: Field research (2017). ***p < 0.001

According to scholars like Velicer and Fava (1998), a factor loading for EFA is considered “high” if it is 0.8 or greater – however, this rarely is the case in real data. Hair et al. (2010) explain variables with factor loadings of 0.5 and above are ideal and should be considered for further analysis. They also explain that a commonly-held rule of thumb in the social sciences is that low to moderate variable loadings above 0.40 is often acceptable. Some social science researchers explain that rather than deleting and exempting scores because they have factor loading below 0.4, scholars may join such factors to other related factors or explore other additional factors that may strengthen the factor loading of the original factor (Henson, 2001). For example, Costello and Osborne (2005) explain that researchers may consider the item’s purpose in the data and decide whether to drop it or add similar items for future research.

Furthermore, 14 of the 33 constructs were deleted because of their extremely low factor loading (items with factor loading below 0.3). Some constructs with factor loadings between 0.3 and 0.4 were maintained for further analysis because of their unique relevance in the study (e.g. the construct for negotiated enterprise). In contrast, others were kept in the study because other related constructs complemented them with high factor loadings. Notably, Cronbach alpha loading is primarily correlation coefficients; hence, a high loading only suggests variables are related to each other and further affirms the variables’ validity. Table 4 reveals high loading, as well as strong Cronbach’s alphas for the independent variables, which strongly affirms the reliability of the variables and the relevance and validity of the extracted constructs used to measure them.

The Cronbach's alpha coefficient results reveal clearly that all the scales for the predictor variables (EL) exceeded the minimum acceptable value of 0.6 (Kuss et al., 2012; Moss et al., 1998; Ogden, Flanagan, 2008). This goes to prove that the variables are reliable for multiple regression analysis.

Table 4. Reliability of Outcome Variables

Variables	Communalities	Item total Correlation	Loading	Cron. alpha
Personal and Social Emergence	-	-	-	0.630
My family plays a major role in my entrepreneurial attitude	.711	.369	.819	
My previous experience influences my entrepreneurial attitude	.675	.391	.744	
My future aspirations influence my entrepreneurial attitude	.655	.435	.340	
How society sees me influences my entrepreneurial attitude	.481	.309	.367	
Negotiated Enterprise	-	-	-	0.722
My entrepreneurial attitude has been affected by others' perception of setting up a business	.562	.315	.319	
Contextual Learning	-	-	-	0.606
I believe the experience I've gained with my team will influence my entrepreneurial attitude	.834	.575	.858	
I will be able to recognise opportunities in line with my team's simulation experience	.697	.608	.727	
I can say I have practical experience that can help me to know what to do in a future entrepreneurial endeavour	.792	.525	.845	

Additionally, Table 5 shows the reliability of the scales (EI and ESE) used for the dependent variables. The reliability scores were high, with Cronbach's alphas of 0.663 and 0.661 for EI and ESE, respectively. The reliability scores show that the constructs used to measure the outcome variables were able to describe EI and ESE. See Table 5 for more information on the reliability and validity test.

Table 5. Reliability of Outcome Variables

Variables	Communalities	Item total Correlation	Loading	Cronbach's alpha
Entrepreneurial Intention	-	-	-	0.663
I am likely to start a business before I complete school	.687	.458	.797	

I am likely to start a business immediately after school (at most one year)	.744	.490	.829	
I am willing to start a business in the midst of several constraints and difficulty	.544	.445	.665	
Entrepreneurial Self Efficacy	-	-	-	0.661
Develop new ideas	.613	.442	.459	
Perform financial analysis	.625	.503	.731	
Set and meet sales goals	.681	.596	.793	
Conduct market analysis	.645	.566	.771	
Develop new markets	.590	.617	.643	
Develop new products and services	.574	.580	.594	
Reduce risk and uncertainty	.566	.628	.633	
Conduct strategic planning	.582	.633	.618	

3. Results

A multiple regression analysis was employed to assess the impact of the independent variables on the outcome variables. Thus, to ascertain the independent variables that best explain the dependent variables. The EI and ESE were used as the dependent variables, while ESE served as an independent variable to correlate with EIs. The overall independent variable was EL, which was sectioned into three subscales (personal and social emergence, negotiated and contextual learning). Table 6 illustrates a summary of the multiple regression least squares results for the variables.

Table 6. Multiple regression analysis of student EL and EI and ESE

Variables	OV1	OV2
Constant	0.276*** (11.802)	0.275*** (12.502)
Personal and Social emergence	0.368*** (5.354)	0.195*** (2.870)
Negotiated learning	-0.026 (-0.376)	-0.097 (-1.411)
Contextual learning	0.096 (1.244)	0.443*** (6.254)
Entrepreneurial Self-efficacy	0.212*** (2.981)	-
Std. Error of the Estimate	0.81310	0.84903
R Square	0.280	0.263
F-stats	19.648	23.243
Prob.(F-stats)	.000	.000
Adjusted R Square	0.265	0.252
N	207	

Notes.

1. ov1: outcome variables 1 (EI)

2. ov2: outcome variables 2 (ESE)
3. Figures in Parenthesis: T-values
4. *** p = 0.000
5. Contextual learning: this variable is significant ($\beta = 0.184$, $p < 0.05$, t-value = 0.2605) only when ESE is excluded.
6. ESE: Was added stepwise – it increased the R Square from 0.225 to 0.280. However, the step makes contextual learning insignificant and reduces the significant beta coefficient of Personal and Social emergence learning to 0.368.

The predictor variables were assessed on two outcome variables (ov1 and ov2). In the first instance, the regression analysis was between the EL variables and EI. Here, ESE was also considered as one of the independent variables (stepwise regression) to assess its impact on EI. Prior to the addition of ESE, two of the predictor variables were found to have significant association with the dependent variable (EI) namely, contextual learning ($\beta = 0.184$, $p < 0.05$, t-value = 0.2605) and personal and social emergence learning ($\beta = 0.368$, $p < 0.05$, t-value = 5.354). Nonetheless, contextual learning ceased to significantly impact EI after the stepwise addition of ESE. The addition of the aforementioned stepwise variable increased the R Square value from 0.225 to 0.280. Thus, with the addition of the ESE variable, the model explains approximately 28 % of the changes in the dependent variable.

In addition, the study also examined the impact of the predictor variables on ESE. The results showed that personal and social emergence learning ($\beta = 0.195$, $p < 0.05$, t-value = 0.2870) and contextual learning ($\beta = 0.443$, $p < 0.05$, t-value = 6.254) had a significant positive impact on the ESE of the respondents. On the individual level, contextual learning was found to be the most important predictor of ESE because it had the highest beta coefficient ($\beta = 0.443$, $p < 0.05$, t-value = 6.254). This result shows that peer-to-peer collaborations, interactive learning and experiences drawn from teamwork are the most important influencers of a student's ESE. This was followed by Personal and social emergence learning. The R-square value for the model was 0.263, suggesting that the predictors explain 26.3 % of the changes in the dependent variable.

The F-ratio, illustrating the goodness of fit of the model, was found to be significant for both models; OV1 ($F = 19.648$, $p < 0.01$) and OV2 ($F = 23.243$, $p < 0.01$). Hence, affirming that the model was reliable and valid.

4. Discussion

The current study sought the relationship between EL acquired via a design-based EE, EI and ESE. The issue of graduate unemployment remains a canker in most developing countries, with Ghana, not an exception ([Baah-Boateng, 2013](#)). The situation is particularly typical in Sub-Saharan Africa and raises concerns over the future of the youth in these areas. While governments have employed several policy actions like promoting EE, the rising unemployment seems to suggest the policies are failing drastically. In terms of methodology, five distinct hypotheses were tested using a stepwise regression approach. This included three and four independent variables on outcome variables 1 (EI) and 2 (ESE), respectively. We discussed the relevant outcomes as follows:

H₁. There is a positive relationship between personal and social emergence learning and ESE

The results show that personal and social emergence learning ($\beta = 0.195$, $p < 0.05$, t-value = 0.2870) significantly impacted the ESE of the respondents. This supports the view that family entrepreneurial background, previous experience, future aspirations and society's perception of a person positively impact one's belief in their ability to accomplish important entrepreneurial actions. Our finding supports Donnellon et al.'s (2014) study on forming an entrepreneurial identity. Their findings explain that personal and social emergence contributes immensely to the development and testing of entrepreneurial identity, which in effect goes to affect their belief in ESE.

H₂. There is a positive relationship between negotiated enterprise learning and ESE.

The findings show that negotiated enterprise learning ($\beta = 0.195$, $p < 0.05$, t-value = 0.2870) had a negative impact on ESE. However, we observed this relationship not to be significant. Nonetheless, Martin et al. (2013) also indicated a possible "reciprocal relationship" between the

quality of the EL experience, EI, and ESE. Barakat et al. (2014) noted that ESE tools help appreciate creative activities' influence on learning innovation.

H₃. There is a positive relationship between contextual learning and ESE.

The results show that contextual learning ($\beta = 0.443$, $p < 0.05$, $t\text{-value} = 6.254$) had a significant positive impact on the ESE of the respondents. On the individual level, contextual learning was the most important predictor of ESE because it had the highest beta coefficient ($\beta = 0.443$, $p < 0.05$, $t\text{-value} = 6.254$) compared with other predictor variables. This shows that the collaborations, interactive learning and experiences drawn from the project teams are the most critical influencers of a student's ESE. This view is accentuated by Rae (2004), who explains that people develop skills and expert knowledge from their work as employees and team members. Consequently, he explains that they earn the requisite experience, understanding and know-how they require to survive in an industry, enhancing their self-belief that they can undertake such entrepreneurial actions to succeed in that industry.

H₄. ESE moderates the relationship between EL and EI

Two of the predictor variables were found to have significant association with the dependent variable (EI) namely, contextual learning ($\beta = 0.184$, $p < 0.05$, $t\text{-value} = 0.2605$) and personal and social emergence learning ($\beta = 0.368$, $p < 0.05$, $t\text{-value} = 5.354$). After the stepwise addition of the ESE variable as a moderating factor, contextual learning ceased to impact EI significantly. However, adding the moderating factor also improved the R Square value from 0.225 to 0.280. Thus, with the addition of the ESE variable, the model explained approximately 28 % of the changes in the dependent variable, meaning that personal and social emergence learning and ESE work better to explain the change in the outcome variable (EI). This goes to affirm the point that family entrepreneurial background, previous experience, future aspiration, and society's perception of a person (which is a component of EL) have the greatest impact on a person's EI, if one develops self-belief in their ability to accomplish important entrepreneurial actions (ESE).

5. Conclusion and Recommendations

Using stepwise multiple regression analysis, we assessed the relationship and impact of EL indicators on EI and ESE first-year university students in Ghana (See [Figure 1](#)). Though both personal and social emergence learning and contextual learning have a significant positive relationship with ESE, the latter was the most important on the individual level. Design-focused EE is important to develop this attribute (ESE), as it encourages collaborations, interactive learning and experiences drawn from the project teams. The result of the study has implications for EE and entrepreneurship promotion in Ghanaian tertiary education. It affirms that factors such as family background and society's perception of a person aid the intention to establish a business in future. However, an EE that promotes collaborations, interactive learning and experiential learning are crucial for developing the competencies needed to believe one can accomplish entrepreneurial action. Future studies may further assess the impact of design-based EE on ESE and entrepreneurial activities rather than mere intentions.

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7. Declaration of Competing Interest

The manuscript's authors declare that there is no interest in conflict, and all reference materials were dully acknowledged.

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