Entrepreneurship Education Methods and Venture Creation Intention: Evidence from a Developing Country Context

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Abstract

The purpose of this paper is to explore the use and impact of entrepreneurship education methods on students' entrepreneurial intentions. The study used a survey design to sample 555 primary data from undergraduate students in one public and one private university in Ghana. We analyzed the data using structural equation modelling, exploratory and confirmatory factor analyses. The results of the structural equation modelling show that active methods of education were more effective in influencing students' entrepreneurial intention, although passive methods of teaching were dominant among most educators. The paper also reveals the influence of gender and personal characteristics on students' venture creation intentions. The findings, recommendations, and limitations are discussed below.

Keywords: entrepreneurship education methods, venture creation intention, developing countries

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INTRODUCTION

Entrepreneurship education programs in higher educational institutions (HEIs) are aimed at motivating venture creation intention among students (Bae *et al.,* 2014). According to Kuratko (2005), the debate about whether entrepreneurship can be taught has become obsolete. The literature shows that entrepreneurship is something that can be taught and learned (Gibb, 1993; Kuratko, 2005). What is important, therefore, is to find out whether the methods used in teaching the subject are achieving the desired outcome. Entrepreneurship education (EE), according to Jones *et al.* (2014:766), is "…. the process of equipping students with the additional knowledge, attributes, and capabilities required to apply abilities in the context of setting up a new venture or business." This paper aims to assess the use and impact of entrepreneurship education methods on students' venture creation intention, which is the primary objective of EE (Jones *et al.,* 2014; Mwasalwiba, 2010), among students in the developing country of Ghana.

A World Bank report has identified EE and training as a catalyst that could stimulate innovation and generate jobs among university graduates, especially in Sub-Saharan Africa where graduate unemployment rates are high (Robb *et al.,* 2014). Although there are inconsistencies in EE research findings (Bae *et al.,* 2014), the positive impact of EE does exist in the literature (Rauch and Hulsink, 2015; Solevik *et al.,* 2013; Bhardwaj, 2014). While many business schools in public and private HEIs in Ghana offer entrepreneurship as a compulsory subject, most students who go through entrepreneurship education programs are still unemployed many years after graduation (Robb *et al.,* 2014). Perhaps the methods used in teaching entrepreneurship in certain parts of the world, including Ghana, should change (McAuley, 2013; Neck and Corbett, 2018). Some previous studies have shown the positive

impact of EE, but other scholars have reported negative results. For example, Piperopoulos (2012) found, in a case study of two public HEIs in Greece, that—ironically—EE stifles entrepreneurship intention (EI). Matlay and Owusu-Mintah (2014) examined EE and venture creation among tourism graduates in Ghana, and it revealed that less than three percent of graduates were engaged in entrepreneurship after graduation. This was confirmed by Robb *et al.* (2014) who found that 50 percent of graduates in Ghana remained unemployed two years after their post-graduation national service. Some recent studies have, however, shown a positive relationship between EE and EI in developing countries (Nunfam *et al.,* Ahmed *et al.,* 2020; Badri and Hachichi, 2019; Ebowo *et al.,* 2017) but findings of EE and EI in developing countries are mixed.

Scholars have argued that course design and methods of teaching tend to influence students' behavior (Neck and Corbett, 2018; Nabi *et al.,* 2017; Bae *et al.,* 2014). There is, however, no conclusion on the most appropriate model or pedagogy for teaching the subject (van Ewijk *et al.,* 2020). While scholars have recommended constructivist or experiential approaches (Nabi *et al*., 2017; Neck and Corbett, 2018; Hagg and Gabrielsson, 2019; Bell, 2020), studies on EE in HEIs have also shown that a constructivism perspective is not common in most HEIs (Nabi *et al.,* 2017; Ahmad and Buchanan, 2015). Although several HEIs continue to implement EE programs in Ghana using both passive and active pedagogy, there have not yet been any studies that examine the impact of each method on students' venture creation intention. The findings of this study, therefore, make significant contributions to the literature.

THEORETICAL BACKGROUND, LITERATURE REVIEW, AND HYPOTHESES

Theories of Entrepreneurship Education

Theories supporting entrepreneurship education, according to Dickson *et al.* (2008), are drawn from economic, psychology, and strategic foundations. These include human capital theory (Becker, 2009; Bosma *et al.,* 2004), institutional theory (Lynskey, 2004), signaling theory (Van der Sluis *et al,* 2004), outside assistance theory (Chrisman and McMullan, 2004), and knowledge spillover theory (Audretsch and Lehmann, 2005). However, two models that have been used extensively to measure EE and EI are the Entrepreneurial Event Model developed by Shapero and Sokol (1982) and the Theory of Planned Behavior (TPB) developed by Ajzen (1991). This study is informed by the TPB (Ajzen, 1991, 2005), which has become influential in EE research (Rauch and Hulsink, 2015). The theory states that entrepreneurial behaviors are determined by EI, which is also influenced by three antecedents including (1) attitude toward a new venture, (2) subjective norms, and (3) perceived behavioral control. Although the TPB extends intention to behavior, this study is focused on intention because of the delay between education and actual entrepreneurial behavior in venture creation (Rauch and Hulsink, 2015). As suggested by prior researchers, the most appropriate measure of the behavior of these students is their intention of venture creation, hence the measure of behavior through intention (Ajzen, 2005; Kolvereid and Isaksen, 2006). Several studies (Souitaris *et al.* 2007; Athayde, 2009; Basu, 2010; Packham *et al.,* 2010; Engle *et al.,* 2010) have confirmed that EE is positively associated with all three antecedents of intention.

Entrepreneurship Education Methods and Venture Creation Intention

The effect of EE on students' venture creation intention depends on the pedagogy used in educating students (Bae *et al.,* 2014). In the entrepreneurship education literature, methods used to educate students have been classified differently (van Ewijk *et al.,* 2020). While some scholars look at it as an entrepreneurship model or process (Nabi *et al.,* 2017; Neck and Greene, 2011), some see entrepreneurship pedagogy as a dichotomous approach. For example, Cope

and Watts (2000) referred to it as a formal versus non-formal approach. Others call it traditional versus non-traditional (Fiet, 2001), passive versus active (Fayolle and Gailly, 2008; Pardede, 2015), and theoretical versus practical (Piperopoulos and Dimov, 2015). EE methods have also been classified as a positivist approach (formal, traditional, and passive) and a constructivist approach (non-formal, non-traditional, active, and experiential). The positivist approach is seen as a teaching approach that is expected to influence students' entrepreneurial behavior—students are considered consumers or recipients of knowledge using methods such as classroom lectures, reading textbooks, case studies, and group discussions (Skinner, 1953). On the other hand, the constructivist approach sees students as owners of knowledge who should take control of their learning processes, which become part of their entrepreneurial behavior through experiences, networking, and apprenticeship (Von Glasersfeld, 1995).

In this study, teaching pedagogies are classified as passive versus active approaches, where passive refers to the positivist approach and active refers to the constructivist approach. Studies have suggested that the constructivist approach to learning is more effective in influencing students' entrepreneurial behavior (Rideout and Gray, 2013; Nabi *et al.,* 2017). It is believed that constructivist learning is experiential, engenders creativity, and creates problem-solving skills among students (Jones and Iredale, 2010). Although the constructivist approach is recommended as a contemporary approach to EE (Nabi *et al.,* 2017; Bell, 2020), it is not common among many entrepreneurship educators in most HEI. (Ahmad and Buchanan, 2015; van Ewijk *et al.,* 2020). This could be attributed to the fact that entrepreneurship educators themselves lack the correct approach to educating students. That is why Neck and Corbett (2018) suggested that there is an urgent need for entrepreneurship educators to move from a passive (positivist) approach to an active (constructivist) approach; by acting as coaches (rather than lecturers) to ensure that students develop an entrepreneurial mindset (Bell and Liu, 2019).

Rauch and Hulsink (2015) argued that both approaches are relevant. While passive methods can teach students different skills (Fayolle and Gailly, 2015) it is through experiential or active learning approaches that students learn to take risks, practice, and be creative (Mueller, 2011). Piperopoulos and Dimov (2015) observed that active-oriented courses establish a higher positive relationship between students' entrepreneurial self-efficacy and venture creation intention than theoretically oriented (passive) courses do. Bell (2020) also confirmed that active teaching methods have a better impact on Chinese HEIs. Ruškytė and Navickas (2017) examined the efficiency of teaching and learning methods for the development of learner entrepreneurship by collecting data from both teachers and learners. Their study shows that active teaching methods are more effective in developing students' entrepreneurial behavior.

These conclusions may hold in many jurisdictions; however, in Ghana and other developing countries, research has yet to establish the efficacy of different pedagogies on students' entrepreneurial behavior. Therefore, it is hypothesized that:

H1: Passive methods of entrepreneurial education will have a positive impact on students' venture creation intentions.

H2: Active methods of entrepreneurial education will have a positive impact on students' venture creation intentions.

Gender and Entrepreneurial Intention

Gender issues have become important in employment creation and participation in leadership and governance, and it is becoming an important area in entrepreneurship research (Jennings and Brush, 2013). Research has also suggested that there are gender differences in the entrepreneurship founding activities (Kelley *et al.,* 2012) and in intentions to engage in entrepreneurship among students (Wilson *et al.,* 2007; de la Cruz Sánchez-Escobedo *et al.,* 2014). Smith *et al.* (2016), however, argue that gender does not have any direct impact on

entrepreneurial intention; they found that EE has the potential to strengthen the entrepreneurial intention of women and make a difference in individual students' lives as well as influence national economic prosperity. Other scholars suggested that women have lower entrepreneurship intentions than men (Zhao *et al.,* 2005), indicating that men are more likely to become entrepreneurs than women. This supports Wilson *et al.* (2007), who found that the EE of MBA students has a greater entrepreneurial efficacy on female MBA students than their male counterparts. Joensuu (2013) also found that female students' EI decreases as they progress in their studies.

Scholars in Ghana have varying views about male versus female students' attitudes toward entrepreneurship education. For example, Amanamah (2017) found a positive correlation between EE and students' venture creation intention but did not find any significant difference between male and female students' attitudes. According to the MasterCard Index of Women Entrepreneurs Report 2018, 46% of business owners in Ghana were women, and women are at par with their male counterparts in entrepreneurial activity rating (Tan, 2018: 26). What is not known is whether these women were influenced by entrepreneurship education or other factors. Most women engaging in entrepreneurship in Ghana are necessity-driven entrepreneurs; they engage in self-employment as a means of economic survival due to a lack of education and to coordinate their domestic duties and work life (Adom and Asare-Yeboah, 2016; Kuada, 2009). Studies have also shown that education and training are critical to enhancing the performance of women entrepreneurs (Adom and Asare-Yeboah, 2016), but whether EE has the same influence on male and female students' intention to start their businesses remains inconclusive in Ghana. Gender is, therefore, considered a potentially moderating influence in determining venture creation intention in this study, which leads to the third hypothesis:

H3: There is a significant gender difference in male and female students' attitudes toward entrepreneurial education approaches.

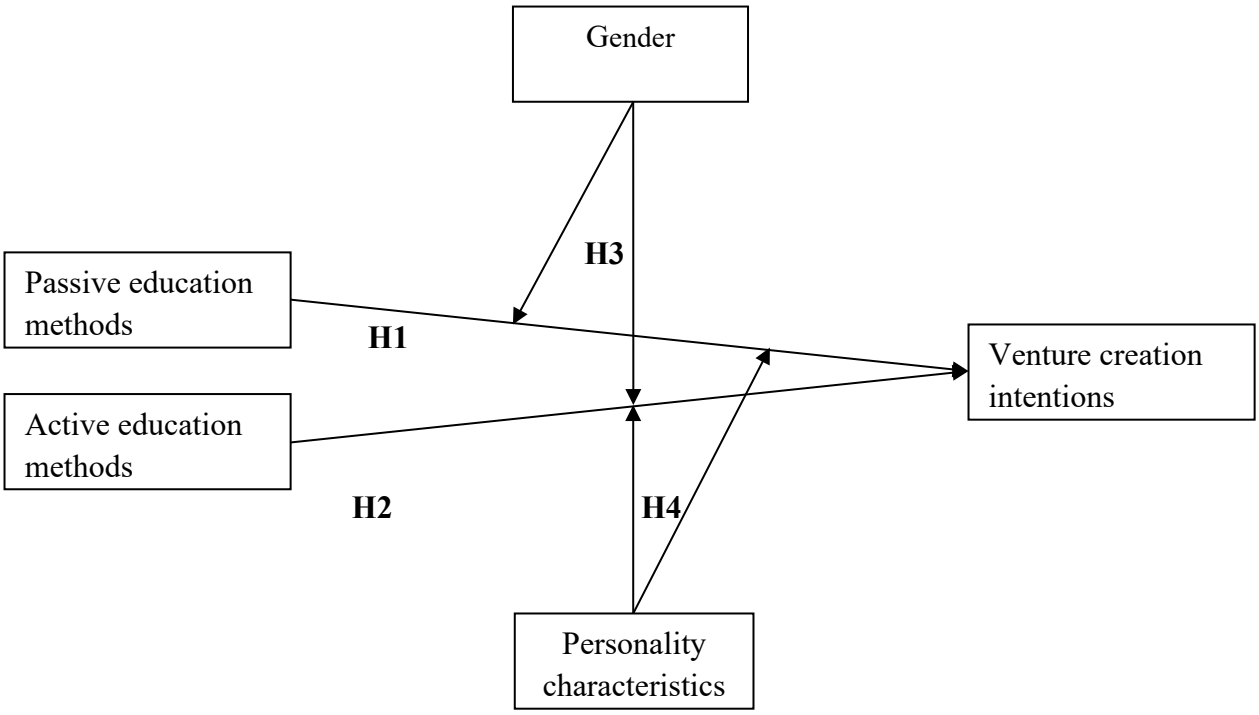
Personal Characteristics and Entrepreneurship Intention

Elali and Al-Yacoub (2016) suggested that personal characteristics can have a significant impact on an individual's entrepreneurial intention and can differ from person to person. However, the current study focused on risk tolerance, stress tolerance, and a fear of failure (Sandhu *et al.,* 2011). Arenius and Minniti (2005) asserted that fear of failure is a negative predictor of the likelihood of being a potential entrepreneur. Equally relevant is the risk tolerance level. As pointed out by Hamidi *et al.* (2008), the ability and willingness to take and tolerate risk after going through an EE program is a major distinguishing characteristic of a would-be successful entrepreneur. Other studies have shown that risk tolerance has a significant impact on the entrepreneurial intention of students (and particularly female students) (Gurel *et al.,* 2021; Sandhu *et al.,* 2011). Sandhu *et al.* (2011) also found that stress tolerance is among the factors that influence entrepreneurial inclination.

In Ghana, entrepreneurs are generally considered to be risk averse, although men are found to be more risk-averse than women (Asravor and Acheampong, 2021). In line with Scarborough (2016), most Ghanaians see stress tolerance and fear of failure as other challenges that prevent them from engaging in entrepreneurship (Amankwah-Amoah, 2018; Quartey *et al.*, 2018). These three tendencies were, therefore, used as personal characteristics to determine their influence on students' venture creation intention through EE methods. This has resulted in this paper's fourth hypothesis:

H4: *An individual with low-risk tolerance, low-stress tolerance, and high fear of failure will be less inclined to start a new venture, regardless of the entrepreneurship education approach.*

Figure I Conceptual Model



METHOD

Approach, Sample, and Data Collection

In this study, a deductive approach with survey design was adopted in collecting quantitative data from 600 undergraduate students in two universities in Ghana; 300 students were selected from Ghana Institute of Management and Public Administration (a public university), and 300 students were selected from Knutsford University College (a private university). The students comprised business students majoring in various courses including marketing, accounting, human resource, management information system, procurement, general management, and finance. Business students were selected because the propensity to engage in entrepreneurship after graduation was found to be higher among business students (Ertuna and Gurel, 2011). These universities were selected because of the importance they place

on entrepreneurship education and the fact that they used similar course outlines (Malhotra and Birks, 2007). The selection of the students was based on a purposive sampling technique to ensure that only business students who took part in entrepreneurship programs participated in the study. Before the actual survey and based on the recommendation of Zikmund *et al.* (2010), Johanson and Brooks (2010), and Quinlan *et al.* (2015), a pilot study of 30 students from the two universities was conducted to ensure the reliability of the data collection instrument.

In the actual survey, 600 students were selected based on similar numbers used in other studies (Farashah, 2013) as recommended by Zikmund *et al.* (2010). Self-administered questionnaires developed from literature review and based on the theory of planned behavior (Ajzen, 1991) were given to the students at the end of their entrepreneurship programs with permission from the course lecturers. Students were allowed to spend about 20 minutes completing the questionnaires. The data were collected from 12 classes taught by seven educators over four semesters in the two universities. Students were not coerced to complete the questionnaires, but the response rate was high because of the involvement of the course lecturers. Six hundred questionnaires were retrieved and 555 of those were found usable for the analysis after screening them, representing a 92.5 percent response rate. From the total sample analyzed, 264 (48 percent) were male while 291 (52 percent) were female.

Measures

Dependent Variables. The entrepreneurial intention was measured by five statements: "I intend to start my own business"; "I will start my own business within the next five years"; "I intend to start my business one day"; and "I intend to start my business because I have the knowledge, skill, and experience required to start a new business." A five-point Likert scale was employed for each statement where 1 represented "strongly disagree," 2 represented "disagree," 3 represented "neutral," 4 represented "agree," and 5 represented "strongly agree."

Even though five statements were presented to measure intention, a principal component analysis (PCA) found that only three of them were loaded under the intention construct.

Independent Variables. Entrepreneurship education was classified into two categories: passive and active methods of education (Bennett, 2006). The passive methods were represented by four methods and the active methods were represented by nine methods based on the works of Mwasalwiba (2010), McAulley (2013), and Scarborough (2016). All four items under the passive method (lectures, case studies, articles, and group discussions) were loaded as a single construct when the PCA was done. However, five out of the nine items (research projects, business start-ups, business simulation, small business consulting, and business games) in the "active methods" group were dropped due to poor loading, leaving only four methods (business plan, guest speakers, video/DVD, and field trips).

Moderating Variables. Gender (male and female) was used as a moderating variable between entrepreneurship education (passive and active methods) and venture creation intention where male was coded as 1 and female was coded as 2. Based on Elali and Al-Yacoub's (2016) research, three personal characteristics (risk tolerance, stress tolerance, and fear of failure) were used separately as moderating variables between passive and active methods and venture creation intention. Dichotomous variables—high and low—were used to measure all three personal characteristics where 1 was coded as low and 2 as high.

RESULTS

The results (Table 1) indicate that the dominant method used to educate undergraduate students in Ghana was lecturing (mean = 4.16, standard deviation = 0.94), followed by the business plan (mean= 3.94, standard deviation = 1.11). The least-used method was field trips (mean = 2.55, standard deviation = 1.33).

Table 1
Methods of Entrepreneurial Education

Methods	Mean	Standard deviation
Lectures (PassM1)	4.1607	0.94342
Textbooks (PassM2)	3.8007	1.12301
Business Plan (ActM1)	3.9410	1.10963
Small Business Consulting (ActM2)	3.4147	1.42763
Articles Reading (PassM3)	3.5558	1.15569
Group Discussions (PassM4)	3.5143	1.21140
Video/DVD (ActM3)	3.8530	1.40323
Actual Business Start-ups (ActM4)	3.6272	1.09846
Simulation (Models) (ActM5)	2.9768	1.16652
Business Games (ActM6)	2.6887	1.30881
Projects and Internships (ActM7)	3.0850	1.34259
Field Trips (ActM8)	2.5520	1.33452
Guest Speakers (ActM9)	3.3375	1.23538

Exploratory Factor Analysis

Exploratory factor analysis using maximum likelihood with Promax rotation was performed to see if the observed variables loaded together and as expected. The result shows they were adequately correlated and met the criteria of reliability and validity. Each of these is addressed for the three-factor model depicted in the pattern matrix below (Table 2).

Adequacy. Kaiser-Meyer-Olkin and Bartlett's test for sampling adequacy were significant, and the commonalities for each variable were sufficiently high (all above 0.300 and most above 0.600), thus indicating the chosen variables were adequately correlated for factor analysis. Additionally, the reproduced matrix had only three percent non-redundant residuals greater than 0.05, further confirming the adequacy of the variables and the three-factor model.

Table 2
Pattern Matrix[a]

Variables	Factor		
	1	**2**	**3**
ActM3_1		0.637	
ActM8_1		0.706	
ActM9_1		0.751	
ActM1_1		0.640	
Pass4_1	0.715		
Pass1_1	0.871		
Pass2_1	0.598		
Pass3_1	0.603		
Int1_1			0.658
Int4_1			0.636
Int5_1			0.577

Extraction Method: Maximum likelihood
Rotation Method: Promax with Kaiser normalization
a. Rotation convergent in five iterations

Confirmatory Factor Analysis and Model Fit

In the confirmatory factor analysis, several of the active variables (ActM 2, ActM 4, ActM 5, ActM 6, ActM 7) and two of the intention variables (Int2 and Int3) were removed due to poor loading. Common method bias was checked using Harma's single text and there was no issue because none of the factors account for more than 50 percent. Modification indices were consulted to determine if there was an opportunity to improve the model; the result was that the model was fit and there was no need to covary the variables. Table 3 indicates that the goodness of fit for the measurement model was sufficient.

Table 3
Goodness of Fit

Metric	Observed value	Recommended

Cmin/df	2.506	Between 1 and 3
CFI	0.964	>0.950
RMSEA	0.052	<0.060
PCLOSE	0.371	>0.050
SRMR	0.054	<0.090

Validity and Reliability

To test for convergent validity, the average variance extracted (AVE) was calculated. For the active construct, the AVE was above 0.50 thresholds (See Table 4). However, AVE values for passive and intention were approximately 0.5, indicating that it was on the borderline. Because the reliability scores (0.741 and 0.714) were greater than 0.700, the authors felt this was admissible (that is, while it is not especially strong internally, it is, at least, a reliable and distinct construct within the model). To test for discriminant validity, the square root of the AVE (on the diagonal in the matrix below) was compared to all interfactor correlations. All factors demonstrated adequate discriminant validity because the diagonal values were greater than the correlations. The Cronbach's alphas for the latent variables show that all alphas were above 0.70 except for intention, which was close at 0.641. The factors are all reflective because their indicators were highly correlated and are largely interchangeable (Jarvis *et al.,* 2003). The three-factor model had a total variance explained of 63 percent, with all extracted factors having eigenvalues above 1.0.

Composite reliability was also computed for each factor. In all cases, the CR was above the minimum threshold of 0.70, indicating that reliability was achieved in the factors.

Table 4
Validity and Reliability

Latent variable	**CA**	**CR**	**AVE**	**Discriminant validity**		
				1	2	3

PASSIVE	0.804	0.741	0.498	**0.688**		
ACTIVE	0.778	0.712	0.508	0.551	**0.713**	
INTENTION	0.641	0.714	0.492	0.448	0.246	**0.620**

Note: CA=Crombach alpha; CR= Composite reliability; AVE=Average variance extracted

The model (Figure II) and table 5 show that the first hypothesis was not supported by the model. That is, the model shows that the path for passive EE does not lead to venture creation, and it was not statistically significant (p = 0.981). However, the second hypothesis was confirmed; that is, the path for active education methods lead to venture creation intention. This is because it was statistically significant with a 99 percent confidence interval (Table 5).

Appendix 1 shows that there was a significant difference between males and females as moderating variables between education and venture creation intention. The result was also statistically significant.

In the case of personal characteristics, (risk tolerance, stress tolerance, and fear of failure) the results were not statistically significant for risk tolerance and fear of failure, but they were significant for stress tolerance (Appendix 2).

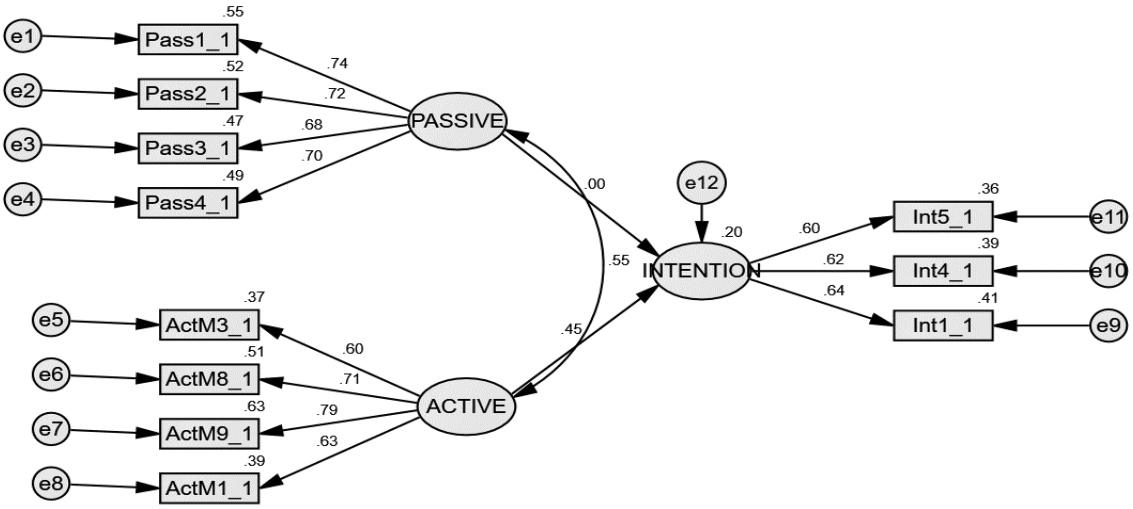
Table 5
Regression Weights

Regression Weights: (All – Default model)

Variable			Estimate	S.E.	C.R.	P	status
INTENTION	<---	PASSIVE	-0.001	0.035	-0.024	0.981	ns
INTENTION	<---	ACTIVE	0.306	0.056	5.43	***	supported
Pass2_1	<---	PASSIVE	0.931	0.063	14.788	***	supported
Pass3_1	<---	PASSIVE	0.95	0.067	14.123	***	supported
Pass4_1	<---	PASSIVE	0.962	0.067	14.419	***	supported
ActM8_1	<---	ACTIVE	1.167	0.095	12.324	***	supported
ActM9_1	<---	ACTIVE	1.27	0.098	12.911	***	supported
ActM1_1	<---	ACTIVE	1.092	0.096	11.342	***	supported
Int4_1	<---		1.202	0.136	8.842	***	supported
INTENTION							
Int5_1	<---		1.274	0.145	8.782	***	supported
INTENTION							

Notes: *** p-value<0.01; ** p-value <0.05; * p-value < 0.10

Figure II Structural Equation Model



DISCUSSION AND CONCLUSIONS

This study assessed the impact of EE methods on venture creation intention from a developing country context, which is the primary objective of EE (Mwasalwiba, 2010; Jones *et al.,* 2014). Different scholars have examined EE and venture creation intention in different contexts; however, this study's point of difference occurred in two ways: by examining the impact of active and passive EE methods on venture creation intention and demonstrating the moderating effect of gender and personal characteristics in a developing country context (Ghana).

Regarding the dominant EE method (Table 1), the result shows through a descriptive statistics analysis that lectures, a passive method (mean score = 4.16) are the main teaching

method used by most entrepreneurship educators in Ghana. The least-used method was field trips (mean score = 2.66). This result supports the assertion that a constructivist approach to education is not common among entrepreneurship educators in most HEIs (Ahmad and Buchanan, 2015). The result was also consistent with the findings of Bennett (2006) that the three most used passive methods are lectures, case studies, and group discussions. These methods can easily accommodate the syllabus and require minimum or no investment (Fiet, 2001). The result, therefore, re-echoed the urgent need for entrepreneurship educators (in general, but particularly in developing parts of the world) to be educated about how to use constructivist (active) methods to achieve the benefits of EE (Neck and Corbett, 2018).

The relationship between the method of education and venture creation intention that was evaluated using the structural equation model (Figure II and Table 5) revealed that education contributes to venture creation intention as found by other scholars (Ebowo *et al,* 2017; Badri and Hachicha, 2019; Mukesh *et al.,* 2020). However, the results indicate that active methods of education are more effective. This supports the call for entrepreneurship educators to move from a positivist (passive) approach to a constructivist (active) approach in educating students (Nabi *et al.,* 2017; van Ewijk *et al.,* 2020). While passive methods such as lectures, group discussions, and presentations might not be completely abolished (Piperopoulos and Dimov, 2015; Badri and Hachicha, 2019), more emphasis should be placed on active or experiential methods (McAuley, 2013; Nabi *et al.,* 2017). As Atherton (2007) recommended, education that will impact students' venture creation intention should be less book based. Personalized acquisition of knowledge and insight through experiential learning will determine whether students (who acquire entrepreneurial knowledge) start a business and how long it takes to move to that point.

Concerning the moderating variables, gender has been found (Smith, 2016; Kelley *et al.,* 2012) to moderate the relationship between entrepreneurship education methods and

venture creation intention. The findings support the views of those who argue that the propensity to engage in entrepreneurial behavior is higher among male students than their female counterparts (Zhao *et al.,* 2005). This, however, contradicts Wilson *et al.* (2007) who found that at higher levels of education, entrepreneurial intention was higher among female students than their male counterparts. Concerted efforts must be made to motivate female students. This could be accomplished by inviting female entrepreneurs to be guest speakers and providing site visits to businesses owned by female entrepreneurs.

Regarding personal characteristics as moderating variables (Elali and Al-Yacoub, 2016), the results (Appendix 2) indicate that risk tolerance and fear of failure were not significant moderators of the relationship between education and venture creation intention among undergraduate students in Ghana. The findings did not support Hamidi *et al.* (2008), who argued that the ability and willingness to take and tolerate risk after going through an EE program is a major distinguishing characteristic of a would-be successful entrepreneur. However, the findings do show that stress levels can influence a student's venture creation intention if the student's stress tolerance is low. Entrepreneurship educators must, therefore, sensitize their students about the need for stress tolerance if they are to become successful entrepreneurs. This supports the views of Scarborough (2016) that stress is one of the challenges would-be entrepreneurs must be aware of and develop coping mechanisms to embrace the challenge.

Implications

This is one of the few studies that has examined the impact of positivist and constructivist approaches to entrepreneurship education in a developing country. This is particularly important because most universities in Ghana teach entrepreneurship as a compulsory paper (especially in business schools). However, there is no evidence of a reduction

in unemployment rates, which is a challenge to many developing countries (Robb *et al.,* 2014). This study, therefore, reveals the weakness of the teaching approaches used and the need for entrepreneurship educators to be trained in contemporary methods of teaching and move from a passive approach to an active approach (Nabi *et al.,* 2017; van Ewijk *et al.,* 2020). The practical implication is that the teaching approaches of entrepreneurship educators need to change to increase the number of entrepreneurs, which will, in turn, reduce Ghana's high rate of unemployment. Traditional universities aside, other institutions such as the National Youth Authority (NYA), which offers training programs for youth, could benefit from the findings of this study.

Furthermore, the use of gender and negative personal characteristics as moderating variables in EE and venture creation intention relationships is novel in this part of the world. As indicated earlier, teaching methods and training programs can be tailored to female students to encourage them to start entrepreneurship ventures, which will ultimately reduce graduate unemployment. According to the Ghana Statistical Service (2021), the female population is greater than that of males, which is confirmed by the response rate in this study. Again, the findings on the negative personal characteristics will guide educators to develop their curricula to support students.

Limitations of the Study and Future Research

First, the study would have been more representative of Ghanaian undergraduate students if additional institutions were asked to participate. Furthermore, the study focused on business students, even though other departments also offer entrepreneurship courses. Future studies should consider using more than two HEIs and extend the study to include students from other departments. Second, a longitudinal study would help identify students who have an entrepreneurial intention and those who go into entrepreneurship to confirm the assertion that

entrepreneurial intention actually leads to entrepreneurial behavior (Rauch and Hulsink, 2015). Again, the convergent validity for the dependent variable (intention), which is on the borderline of the minimum threshold (Hair *et al.,* 2010), could be attributed to the difficulty of data collection in this part of the world, where the commitment to providing information for research is generally low. This study focused on only three negative personal characteristics (risk tolerance, stress tolerance, and fear of failure). Future studies could consider using positive personal characteristics such as self-confidence and perception of self-efficacy, the locus of control, and a need for achievement as moderating variables between EE and venture creation intention. Finally, a second study could have been done to confirm the results of the first study; however, it was practically impossible in the current study. Future studies should consider a two-stage data collection by collecting data from a different group of business students to confirm the results of the first group.

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Appendix 1
Gender

	Male		Female		
	Estimate	P	Estimate	P	z-score

INTENTION	<---	ACTIVE	-0.123	0.041	0.073	0.061	2.734***
INTENTION	<---	PASSIVE	0.671	0.000	0.077	0.110	-4.553***
ActM12_1	<---	ACTIVE	1.052	0.000	1.017	0.000	-0.244
ActM13_1	<---	ACTIVE	0.968	0.000	0.954	0.000	-0.103
ActM14_1	<---	ACTIVE	0.957	0.000	1.008	0.000	0.355
ActM8_1	<---	PASSIVE	1.283	0.000	1.079	0.000	-1.063
ActM9_1	<---	PASSIVE	1.369	0.000	1.185	0.000	-0.926
ActM1_1	<---	PASSIVE	1.101	0.000	1.092	0.000	-0.046
Int4_1	<---	INTENTION	0.925	0.000	1.803	0.000	2.637***
Int5_1	<---	INTENTION	1.177	0.000	1.496	0.000	1.084

Appendix 2
Stress tolerance

			SHigh		Slow		
			Estimate	P	Estimate	P	z-score
INTENTION	<---	ACTIVE	-0.127	0.108	0.061	0.116	2.138**
INTENTION	<---	PASSIVE	0.900	0.004	0.192	0.000	-2.267**
ActM12_1	<---	ACTIVE	0.980	0.000	1.077	0.000	0.734
ActM13_1	<---	ACTIVE	0.713	0.000	1.097	0.000	2.94***
ActM14_1	<---	ACTIVE	0.775	0.000	1.066	0.000	2.14**
ActM8_1	<---	PASSIVE	1.835	0.000	1.051	0.000	-1.712*
ActM9_1	<---	PASSIVE	1.836	0.000	1.166	0.000	-1.450
ActM1_1	<---	PASSIVE	2.048	0.000	0.936	0.000	-2.181**
Int4_1	<---	INTENTION	1.106	0.000	1.223	0.000	0.408
Int5_1	<---	INTENTION	0.841	0.000	1.616	0.000	2.627***

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10