Entrepreneurial Pedagogy, Incubator Use and Student Innovative Capability in Institutions of Higher Education, Kenya

Murrey Mercy*, Kibeti B. Nassiuma and Ogada Joash
Department of Entrepreneurship and Project management, School of Business and Economics, Moi University, Eldoret, Kenya

***Corresponding author's email address:** murreymercy@yahoo.com

Abstract

Innovativeness has become one of the most celebrated concepts of our era. The fields of academics are looking into how members of societies and organizations may be inspired and empowered into creation of innovation. Student innovative capability in institutions of higher education is presumed to be anchored on entrepreneurial pedagogy. However, entrepreneurial pedagogical methods have not been exhaustively investigated in terms of contribution to student innovative capability and the paper analyzed the influence of problem-based learning, competence-based learning, direct learning and case study-based learning approaches on student innovative capabilities. The study was guided by the Social cognitive theory, Schumpeterian theory of economics and the componential theory of creativity. An explanatory research design was employed. This study targeted 1545 fourth year finalists taking entrepreneurship as their major discipline in the sampled institutions in Nairobi County. Proportionate stratified sampling and simple random sampling techniques were used to select a sample of 380 respondents. Questionnaires were the main data collection instruments in the study. Results were presented using descriptive and inferential analytical technique. Multiple regression was used to test hypotheses of the study. Results showed that problem-based, case study and direct learning significantly affected students' innovative capabilities. The paper recommends that institutions of higher education, should adopt policies that take into account, case study, problem based, direct and competence-based learning approaches to enhance innovative capability of students.

Keywords: Innovative Capabilities, Entrepreneurial Pedagogy, Higher Learning

INTRODUCTION

Innovation is the act that involves the creation of new products, services, markets, ideas and raw materials for the benefit of an organization. It is considered as a tool essential for positive change. Innovation is similar to mutation which is the biological process that makes species evolve in order to strive better for survival as noted by Hoffman and Holzhuter (2012). Entrepreneurial pedagogy in institutions of higher education and in the world all over emphasizes the realization of the affective, cognitive as well as psychomotor skills of the students. Such skills when fully realized are likely to enhance student's innovative and creative thinking. Entrepreneurial pedagogy is paramount because it promotes creativity and innovativeness of the learners. Creativity and innovativeness on the other hand assist the learners to come up with ideas that can be translated into business opportunities that is; viable and profitable businesses (Timmins and Spinelli, 2003; Kuratko and Hodgetts, 2004; Rwigema and Venter, 2004).

According to Kenya National Bureau of statistics (Mukhwana, 2017), 70 percent of university graduates do not get absorbed in the formal sector of the economy upon graduation. Therefore, the high level of unemployment of Kenyan youths is of great concern to the Kenyan government because of the social, economic and political impacts associated with unemployment. Therefore, the Kenyan government perceives that one of the ways of solving the problem of unemployment facing the country, is to encourage the teaching of entrepreneurship as a discipline in our institutions of higher education so that the graduates of our institutions of higher education can go out into the world with expertise and knowledge that can empower them to initiate growth and manage their own businesses.

LITERATURE REVIEW

According to Carland, (2015), the intents to generate and obtain profit are the essential accelerators of innovativeness seen in entrepreneurs and the strength of these accelerators are advanced in innovative entrepreneurs. Innovation is a device by which entrepreneurs use to seek changes in environment as a chance toward a new-fangled business. Entrepreneurs have the yearning to hunt for innovative resources, environmental variations and the signs indicative of innovation opportunities. According to Drazin, (2016), innovativeness, is the capability of doing something in an inventive and upgraded way. In entrepreneurial setting, innovativeness is the aptitude to alter the corporeal appearance of a product. It has progressively obtained importance in entrepreneurship, leading to additional studies pertaining its role as well as nature.

In the entrepreneurship phase, innovation is a concept that represents the generation of new fangled endeavors and development of existing enterprises. Robinson (2015) pronounces innovation to be the ability to identify opportunities and respond to those opportunities in a creative way, thus giving consumers innovative goods together with services. Farr (2019) describes innovation as "the intentional introduction and application of ideas, process, products or procedures, new to the relevant unit of adoption". Schumpeter (2014) additionally describes innovation as a noteworthy entrepreneurial predecessor and an entrepreneur being an innovator.

Mueller and Thomas (2017) have the same explanation of innovation capability as a noteworthy predecessor of entrepreneurial deeds. It has also been suggested by Carland (2015) that the greatest vital component of the character of an entrepreneur is innovativeness. The present literature advocates that innovativeness is absolutely linked with entrepreneurial intent. An entrepreneur has been stated by Covin and Miles (2018) as an innovator aiming at market requirements by bestowing new approaches, utilities as well as products. In correspondence with this, the existing literature advocates that entrepreneurial people are extra innovative as compared to those who are not.

A study by Ahmed, (2019) examined the determining factors of entrepreneurial intention, and verified that innovativeness was part of the aspects with a constructive impact on entrepreneurial conduct and intentions. There exist numerous studies that investigate the link between entrepreneurship and innovation. Carland, (2015) carried out a study with double groups to examine differences in selecting innovation, and established that entrepreneurs having advanced innovativeness are mostly intended for profit as well as development, while those who were less innovative regarded business as an approach to uphold individual goals and/or to offer income for family.

Higher education institutions are the drivers of nations' growth as well as development due to the innovations they are nurturing (Vaithilingam, 2014). Universities forms manufacturers of innovation, generating new and better-quality goods and services, as well as availing knowhow, training together with potential innovators (i.e., human resources), to organizations and societies. Actually, innovation in the workroom has obtained acknowledgement as a vital performance yield over the past decades. It is critical to point out that innovation may fail to essentially at all times be useful and can occasionally even be counterproductive to additional facets of performance in the workroom (Zhou 2014). Nevertheless, the deliberate introduction of better ways of undertaking things that innovation suggests, ought to allow organizations to respond and familiarize with quick changes in market, and to work efficiently in their broader business environment.

Such organizations' innovation capability depends chiefly on individuals working across all organizational levels. Present day's apprentices are tomorrow's workforces; they are a main source for upcoming innovations in an organizational setting. Before they get into the labor market, it is in the framework of higher education to begin creating lasting attitudes, morals as well as behaviors as evolving adults, together with innovative behaviors. Furthermore, graduate outcomes or competences can be extensively described as the ultimate product or result of the entire university knowledge while innovation is a single of the anticipated graduate products.

However, as Chen et al. (2013) suggest, there is a lack of feasible means and methods to promote undergraduates' innovation capability. This could be because of the predominant motivation of the research on learner innovation, chiefly anxious with the study of innovativeness of university learners. Nevertheless, innovation by individuals might likewise be viewed as a behavior that indicates new fangled approaches of undertaking things, nurtured, amongst other resources, through having self-sufficiency in doing one's own duties along with assignments. In this setting, the current study aimed at investigating individual innovation behaviors amid university scholars from a longitudinal opinion, attempting to point out its key influences, which include autonomy as well as cognitive demands. Therefore, this study can possibly communicate to a comprehensive academic listener in respect to designing curricula in higher education institutions that aims at fostering student innovative behavior/s. This is the main determinant of innovativeness and innovation by university students: An up-to-date literature review has been attentive largely to innovativeness of university students, predominantly in the entrepreneurship context.

Innovativeness, normally connected with potential of an entrepreneur according to Mueller and Thomas (2017) can be considered as a personality trait that indicates a readiness to change. Regardless of the reality that studies undertaken in this context have gained interesting as well as applicable outcomes (Mueller et.al 2017), individual innovation is more than only the inclination to think with creativity. It can likewise be considered as a behavior involving the intended introduction as well as utilization inside a job, of thoughts, goods, procedures and processes that are novel to that job and those which are intended to benefit it. Earlier research reflecting personal innovation from a behavioral view point established that innovation may be adopted by a number of job enterprise physiognomies, for instance autonomy as reported by Janssen (2017) and can be employed by workforces either as a method of alteration to work changes (Schein ,2019) or as a vigorous surviving approach to achieve a high job demands volume. Even though innovation could not inevitably result in positive yields, research has advocated that innovation results in a wide spread variety of benefits, which include advanced mental welfare. For example, numerous studies have noted that

individuals might acquaint new fangled ways of performing things so as to handle job demands well and hence decrease stress. Likewise, there exist experimental indication that sustains the optimistic connection between individual innovation and welfare.

In line with the above view, individual innovation acts as a vigorous surviving approach which could shield the harmful effect of demands faced by undergraduates, including cognitive ability, on their mental agony, eventually resulting in better mental welfare. It is crucial to note that mental well-being of undergraduate is never a negligible matter. Undeniably, it has been advocated as vital to meet the learning results and additionally for their fruitful adaptation to life in university as noted by Bowman (2010). University life is frequently considered as a critical, and a possibly traumatic period in a learner life particularly in the 1st year, when changeover is taking place. This period can bring with it an over abundance of new-fangled anxieties on undergraduates, which sequentially could have a negative impact on their performance, welfare as well as adjustment. Beginning a university may possibly be regarded as double sides of the similar coin. According to Mudhovozi, (2015), for particularly 1st-year students, it might be an enthusiastic period, filled with novel learning, relationships and experiences, as well as a fresh established personal freedom far away from home.

METHODOLOGY

Target population

The target population comprised of 1545 Fourth Year Entrepreneurship Finalists in selected private and public universities within Nairobi. Stratified and simple random sampling techniques were used. Structured questionnaire was the main tool for data collection. The sample size comprised of 385 respondents.

Validity and Reliability of the Research Instrument

This paper also employed the factor analysis technique to test for construct validity. Predictive validity of scores was employed to test the validity of the research instruments. It was scrutinized to determine the level at which a measure is an upright predictor of a dissimilar variable and the extent to which a measure is a good predictor of another variable. Nomological validity was employed to test the extent to which the instrument assesses the specific constructs that it is designed to assess. Convergent validity was also employed to test the degree of relatedness between the constructs. Content validity was ensured by doing a thorough literature review study on which the content of the questionnaire was based. Face validity was ascertained by pre-testing of the data collection tool and scrutiny of the instruments by the research supervisor. External validity of a study is said to exist when the results obtained in a study can be generalized to other people and other settings.

Factor analysis is a method that permits for the reduction of large numbers of variables or questions to smaller number of variables.

In statistics, reliability is described as the proportion of the discrepancy in the replies to the survey that is the outcome of divergences in the respondents. This means that replies/feedbacks to a dependable survey varies due to varying views which respondents have but not for the reason of unclear or vague questionnaire items. Cronbach alpha was in addition utilized in assessing the instrument's reliability. Reliability values of at least 0.70 and over were deliberated and according to several researchers, it is adequate as noted by Cooper and Schindler (2006); Malhotra and Birks (2006).

Model Estimation

Standard multiple regression was used to test the study hypotheses

After estimating the association, it was possible to adopt the following equation:

$$Y = \beta 0 + \beta 1X1 + \beta 2\,X2 + \beta 3\,X3 + \beta 4\,X4 + \varepsilon$$

……..……1

Where: Y= the dependent variable (student innovative capability), $X1$ =Problem based Learning, $X2$ =Competence based Learning, $X3$ =Direct Learning, $X4$ = Case Study Learning

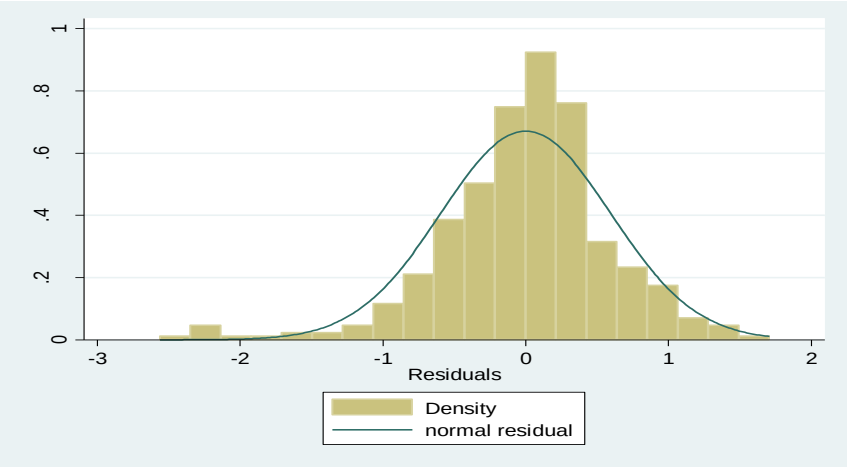
While: $\beta 1, \beta 2, \beta 3, \beta 4$ are model estimates or coefficients, α= the constant, ε = is the error term assumed to have zero mean and independent.

Diagnostic Tests

The following assumptions were assessed under the multiple regression model of analysis;

Normality

The normality of the data was tested using degrees of skewness and kurtosis of the study variable. Normality in this study was checked through histograms and standardized residuals.



Test for Linearity

Linearity is that amount of change or rate of change, between scores on two variables which is constant for the entire range of scores for the variables. Scatter plots was used to examine the relationship existing in the study variables. Scatter plots were used to examine the relationship existing in the study variables. It showed that the relationship between standardized values of the dependent variable and the residuals of the independent variable exhibited a linear relationship.

Homoscedasticity

The assumption of Homoscedasticity refers to equal variance of errors across all levels of independent variables. The present study reduced the chances of violating this assumption by ensuring that the data utilized in testing is normally distributed. In this regard Breusch-Pagan test was employed. The test statistics had a P-value above an appropriate threshold (P<0.05). Thus, null hypothesis was rejected and Homoscedasticity assumed.

Table 1: Test for Homoscedasticity

Ho: Constant variance (Homoscedasticity)
Variables: Fitted values of (standardized SIC)
Chi2(1) = 1.34
Prob >Chi2 = 0.0509

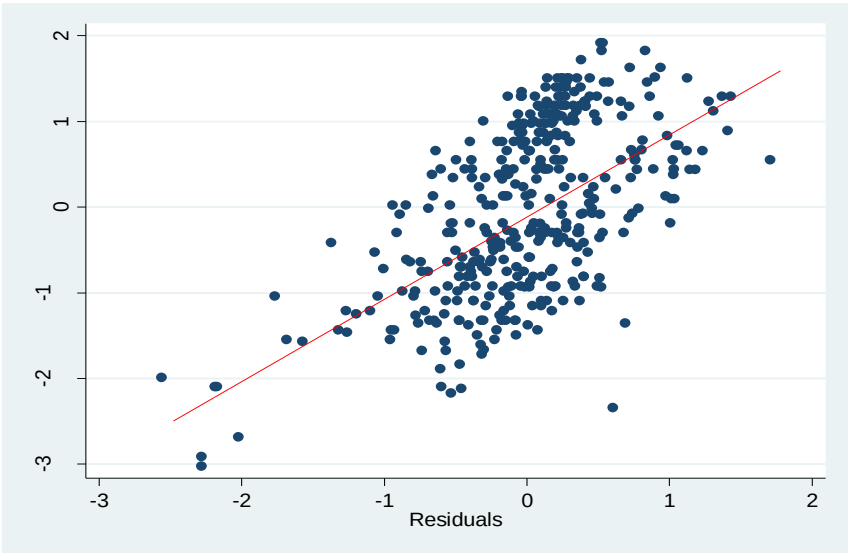
Multicollinearity

A multicollinearity test was undertaken to determine if two or more variables were highly correlated (not independent of each other) thus affecting the estimation of the regression parameters. The study used VIF to check for multicollinearity among the explanatory variables. The results on inspection of the VIF showed that multicollinearity was not a concern. No variable was observed to have VIF value above 5 and no tolerance statistics was below 0.100. This hence led to a conclusion that no predictor variable had a strong collinear relationship with any of the predictor(s).

Table 2: Variance Inflation Factors test for Multicollinearity

Variable (Standardized)	**VIF**	**Tolerance (1/VIF)**
Problem-Based Learning	2.54	0.3930
Competence-Based Learning	3.16	0.3162
Direct Learning	2.96	0.3369
Case Study Learning	2.59	0.3859
Incubator Use	1.23	0.8110
Mean VIF	**2.50**	**0.45**

Source: Survey Data, 2020



RESULTS

It was important to determine reliability of the constructs used to measure the variables in question. All the items should reflect similar basic constructs so that people's scores should be correlated with each other.

Table 3: Cronbach Reliability Test

Variables	Average inter-item covariance	Number of items in the scale	Cronbach's Alpha coefficient
Students Innovativeness	0.3990	14	0.8555
Problem-Based Learning	0.3511	19	0.8749
Competence-Based Learning	0.3683	14	0.8424
Direct Learning	0.3936	15	0.8577
Case Study Learning	0.4109	15	0.8742

Source: Survey Data, 2020

If the feedback of the people to dissimilar items fail to be the same or are not associated with one another, then it could not make intellect to advocate that all are gauging similar basic constructs. Internal consistency can be judged by assembling and analyzing the data. To do this, Cronbach's alpha was used which is a measure of internal consistency. It is a measure of scale reliability. The results shown in Table 3 revealed that all the coefficients were within the accepted thresholds of 0.7 as postulated by Lee *Cronbach* in 1951. Therefore, it was concluded that the constructs used were reliable.

Inferentially, problem-based learning (ZAPBL), direct learning (ZADL) and case study learning (ZACSL) positively significantly influenced the innovative capability of the students in Kenya institutions of higher learning as shown in Table 3 below. Students or undergraduate students become more skilled at both the content and thinking strategies when they can learn through experience. Problem based learning helps learners to develop several skills among them are supple knowledge, actual problem expertise, effective teamwork skills and inherent motivation. Problem based learning is a training method that gives the potential to assists learners build up a supple understanding and enduring skills of learning. The results showed that learners in a project-based or problem-based, learning scenery may fail to inevitably approach learning at a deep level.

Table 4: Regression Results

Source	SS	Df	MS	Number of Observations	= 385
Model	257.7428	4	64.4357	F (4,395)	= 180.18
Residuals	141.2573	395	0.3576	Prob > F	= 0.000
Total	399.0000	399	1.0000	R-squared	= 0.6460
				Adj-R squared	= 0.6424
				Root MSE	= 0.5980

SI	Coefficient	Standard Error	t	P > t	[95%Confidence Interval]	
ZAPBL	0.1871	0.0478	3.92	0.000	0.0932	0.2810
ZACBL	0.1002	0.0532	1.89	0.060	-0.0043	0.2048
ZADL	0.2970	0.0514	5.77	0.000	0.1959	0.3981
ZACSL	0.3185	0.0473	6.74	0.000	0.2256	0.4115
Constant	7.16e-10	0.0299	0.00	1.000	-0.0588	0.0588

Source: Survey Data, 2020

CONCLUSION

It is paramount for institutions of higher learning and trainers to spot and contemplate the factors that may impact on learning by student in their specific problem-based setting and to offer the necessary apparatus and continuous training that will assist students in using deep learning methods in a team and hearten student teams to implement a collaborative culture of learning.

Direct learning is an indication that when students are encouraged to ask questions when learning in class ensures they grasp concepts, teachers appearing in class for every lesson, when they are required to attend all the classes, allowed to create own questions to test their ability makes them to be more innovative.

Case study learning signifies that if students are taught to have the ability to think through a problem and argue, have the ability to understand the relationship between the concepts, have the ability to apply previous knowledge gained even more, and having the ability to articulate the real-life issues based on the cases done in classroom setting the ability to innovate new ideas is enhanced. Case study learning helps students to learn entrepreneurship content in a more comprehensive ways and case study improves learning efficiency.

On the overall, the study concluded that entrepreneurial pedagogy approaches are an important facet as it enhances student innovative capability in institutions of higher education in Kenya.

RECOMMENDATION

In order to promote the students' innovative capabilities of students of higher learning in Kenya, the study recommended that institutions of higher education, should adopt policies that take into account, case study, problem based, direct and competence-based learning approaches to enhance innovative capability of students

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