

THE INFLUENCE OF TEAM-BASED LEARNING ON ENTREPRENEURIAL SELF-EFFICACY OF STUDENTS IN UNIVERSITIES

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ABSTRACT

The rapid expansion of universities in Africa necessitates an interrogation of the appropriateness of the training approaches being used. The study investigated the influence of Team Based Learning (TBL) on Entrepreneurial Self-Efficacy (ESE) of university students in Kenya. The measure of TBL was group work, peer review, cooperative learning, collaboration and learning games. The measure of ESE was skills, knowledge, traits, attitude and confidence. The target population was 147 fourth year students specializing in entrepreneurship comprising those from private and public universities in Nairobi and Kiambu Counties out of which 109 respondents were sampled. Data was collected using a structured Likert-type questionnaire which was self-administered. The researcher employed a survey design and multinomial logistic regression was used to analyse data. The findings revealed that TBL contributed positively towards ESE. High levels of ESE accelerate entrepreneurship activities, creativity and innovation resulting in economic growth. It is recommended that peer review mechanism and playing games related to entrepreneurship should be encouraged because they enhance team spirit, good interrelationship and networking which enhance lifelong learning. The study recommends further research to identify suitable TBL games and how they can be integrated in the curriculum.

Key words: Team based learning, innovation and Entrepreneurship Self-Efficacy

Team-based learning (TBL) offers students an exciting and creative opportunity to apply theories learned in a practical way. It allows students to utilize their abilities while the instructor focuses their attention on important issues. Ohlsson (2013), defined TBL as a collective learning process through which team members create knowledge, understanding and develops collective competence to solve their tasks. It is one of the processes of developing the skills, traits, knowledge, attitude and competence of the team members to create results leading to entrepreneurial self-efficacy.

The ever dynamic environment and the diverse learning needs require a change in the existing training approaches in entrepreneurship education (Mistree et al., 2014). It is paramount to adopt flexible, learners centered approach that develops confidence and competence of the learners (Ifenthaler, 2012). The effective use of TBL to improve team performance is well documented (Entrekin, 2003), but little research has been done on TBL and entrepreneurial self-efficacy.

TBL incorporates collaboration where students acquire teamwork skills which are critical in solving difficult issues in entrepreneurship (Stokols et al., 2008). It also develops a process of providing constructive feedback on team contribution (Michaelsen and Sweet, 2008) (Michaelsen, 2008). The approach also demonstrates that learners can address documented problems and challenges faced by students participating in this learning style which allows course content and delivery to be fine-tuned to the specific needs of the group (Restall, 2015).

Learners working in teams also promote independence in the learning process because minimum support is required due to their collective efforts which can lead to Lifelong learning. (West, 2002), found that external demands have a significant impact on individual, team and organizational innovation. Decuyper (2010), also found that team interactions increase efficiency and innovation through networking, knowledge sharing and communication with stakeholders which brings about team proactivity that initiates change.

However, despite the fact that TBL has several benefits, not all teams can take full advantage of those benefits. There is a tendency for those involved in the process to be defensive. The approach imposes on learners to pre-study of training material which can lead to discomfort, unease, or even hostility to students who are used to passive learning (Restall, 2015). Educators, on the other hand, are faced with the challenge of contending with learners resistance to this approach since literature provide little guidance on how to adequately prepare them (Restall, 2015). It has also been found that some students still felt confused despite their introduction to the approach (Hunt et al., 2003). There is also the problem of joy riders within the teams who have no motivation to learn who can be a source of conflict and have no desire to cooperate (Fink, 2004; Michaelsen and Richards, 2005). Learners' dissatisfaction may affect the team output and its diversity may affect the performance (Alge et al., 2003; Koppenhaver and Shrader, 2003). There might also be different levels of experiences within the members which may demonstrate an imbalance in the task accomplished between the high achievers and procrastinators (Brooks and Ammons, 2003).

The challenges can be mitigated by the approach being based on current issues to capture the attention of learners. It is also paramount for instructors to explore pre-learning sessions and the different learning cultures that may be required (Restall, 2015). Sometimes, it is inevitable to give students contract which contains written learning agreement on rules of how to work in groups (Mahler, 2012). This secures the commitments of members towards their participation and conduct.

The success of TBL should be hinged on the premise that allows all team members to contribute. The divergent views should be allowed to flourish before a convergence of the most important points. The students should be sensitized of the learning outcomes and the significance of effective communication. This way, the approach was found to improve the learners' performance (Stanger-Hall et al., 2011). It is also important to initiate mechanisms that can help team members to reflect and manage their emotions through a facilitator and structured reflection sessions (Sparrow, 2006). Listening to one another and having positive attitudes about teamwork is also necessary to promote TBL (Watson, 2011). Effective application of TBL in entrepreneurship education can therefore contribute immensely in the development of Entrepreneurship Self-Efficacy (ESE).

Entrepreneurship Self-Efficacy

Entrepreneurs perform their activities in a dynamic environment full of turbulence like in technology, legal requirements and other several uncertainties. It requires them to have a high level of need for achievement to manipulate and rapidly change the prevailing dynamism. Entrepreneurship self-efficacy (ESE) is a major contributor to high need of achievement (Urassa, 2015). The rigors of entrepreneurship can be demystified by enhancing ESE of individuals. Entrepreneurship education that utilizes the appropriate pedagogies can go a long way in bolstering the skills, knowledge, traits, attitude and competence of learners. The study, therefore, hypothesizes that; Team-Based Learning in Entrepreneurship education has no significant influence on ESE of final year students in Kenya universities.

Methodology

Correlational field study design was used because it examines relationship between concepts (Walliman, 2011). The design was used to investigate the association between EE pedagogy and ESE and the influence on each other. The researcher's role in the design was to assess the variation of variables so that the degree of relationship between them can be determined and find out the patterns and interrelationships that exist among the variables. The design allowed measurement of EE pedagogy, training context, ESE and enable the assessment of the extent to which they are related. The design allowed for generalization of the findings since a large sample was chosen to be representative of the entire population. Randomization was used to minimize the unknown variables since the sample size was picked at random from the target population. The target population was the final year students undertaking bachelor degree specializing in entrepreneurship in public and private universities. The information was obtained from the website of all universities based or will campuses in Nairobi County. The period of interest was 2015/2016 academic year.

The sample size was determined by application of Yamane (1967), formula which states that;

$$n = \frac{N}{1 + N(e)^2}$$

The sample size was depicted by n, population size by N, and the level of precision e which in this case is 5%. When the formula was applied to the target population size, we got;

$$n = \frac{147}{1 + 147(0.05)^2} = 107$$

Proportionate representation from university with over thirty students was derived from the sample size per university while universities with less than 30, all the students were respondents. Proportionate representation was determined by total target respondent per university divided by the total number of students in all university offering EE in Nairobi County and then the resultant number multiplied by the total sample size.

The sampling design used was systematic sampling which is a probability technique. The design was used because it also allows for every item of the population to have an equal chance of inclusion in the sample (Kothari 2004). The list of student's admission numbers for the target population was generated, arranged in ascending order and then serialized. Admission numbers are normally given randomly by first come first registered and there are no chances of bias in their allocation. The Sample interval was then determined by dividing the total population in a class by the sample size and the resultant integer rounded off to the nearest whole because the serial number in the list of index numbers can only be a whole number. A table of serial numbers based on sampling interval classification was drawn and random numbers was picked from the classification.

The researcher utilized primary data. Quantitative and qualitative data from the final year undergraduate student from both public and private universities was collected to investigate whether there is a relationship between EE and ESE. This allowed the researcher to compensate for the weakness of one approach with the strength of the other to achieve the best result (Creswell and Clark 2011). The quantitative method of data collection provide information based on quantified measures and enable researchers to investigate a large number of cases and can be generalized to the wider population (Veal, 2005). However, it ignores the fact that human beings behave and interpret the world around them differently and may restrict participant's responses and may not facilitate detailed description of a social phenomenon (Bryman and Bell, 2011).

Qualitative method was appropriate for studying and gaining a deeper understanding of the participant's personal experience (Veal 2005) which provided a rich and complex description of subjects being investigated. It also enhanced closer collaboration with participants in the process of data collection which ensured the credibility of data (Creswell and Miller 2000). However, it was difficult to generalize findings. Data on EE pedagogy, learning context and on ESE utilized categorical variable having ordered scales. These are variables for which the measurement scales consists of a set of categories.

Structured questionnaires were used to collect data from the field through a survey on the variables. Questionnaires were also suitable for generating quantitative data from a large sample to test hypotheses. They are commonly associated with correlational field study. Likert scales were used to measure unobservable constructs.

The questionnaires were taken physically to the respondents in the universities. The instruments and the purpose of the study were explained. The respondents were then requested to fill the questionnaires to the best of their ability in an honest manner.

Validity was determined by construct validity which entailed drawing hypotheses about the likely connection between the EE pedagogy approach and ESE. Reliability is the extent of the consistency or stability of the measuring instrument. This was tested using an internal constituency technique. Several similar but not identical questions were administered. Multiple dataset from the various variables tested the conceptual model which made it possible to test for the stability of results. All aspects of the questionnaire will undergo a pilot test to identify and eliminate any problems that may exist.

Categorical data collected was coded and analyzed with statistical package for social science software. Descriptive statistics were used to analyse demographic factors while multinomial logistic regression analysed how EEP and ESE were related and to test for relationship between them.

Multinomial logistic regression was used because data on independent variables and dependent variable were measured in ordinal scale. Whereas binary logistic regression model is used in nominal data where

variables have only a binary choice, multinomial logistic regression model is used in ordinal data with different categories. Unordered scales are used in nominal variables with binary data. Categorical data are variable for which the measurement scales consists of a set of categories.

Results and discussions

The objective of the study was to determine the extent to which Team based learning (TBL) in Entrepreneurship Education Pedagogy (EEP) influences Entrepreneurship self-efficacy (ESE) of final year students in Kenya universities. Both the TBL and ESE were measured differently and their relationship was later sought.

Entrepreneurship Self-Efficacy

The dependent variable for the study was Entrepreneurship Self-Efficacy (ESE). The parameters for measuring ESE in this study were entrepreneurial skills, knowledge, traits, attitude and competence. The majority respondents which were 84 representing 80.8% affirmed that the Entrepreneurship Education (EE) had provided a range of entrepreneurial skills. There were 85 respondents representing 81.7% who confirmed that EE had led to construction of new knowledge. Seventy four respondents representing 71.2% asserted that entrepreneurial traits were developed in the learning process. Shaping attitude towards entrepreneurship in EE had the highest respondents of 86 representing 82.7% while competency to start entrepreneurial venture had the lowest respondents of 77 representing 74%. The majority respondents also agreed that EE had provided them with skills (75.9%), knowledge (77.9%), traits (65.4%), attitude (81.7%) and competence (64.5%).

The measure for ESE was delivered from aggregating the total score of each of the respondent in the Likert scale. This was done by transforming the respondents' score, counting the variables, identifying the target variable and then labeling the target as ESE.

Team based learning

The antecedents of Entrepreneurship Education Pedagogy (EEP) in this study were Team-Based Learning (TBL), Project-Based Learning (PBL) and Blended Learning (BL). Team-based learning was measured in terms of collaboration among students and lecturers, group work activities, peer review exercises, playing games related to entrepreneurship and cooperation between the students and lecturers.

The majority respondents which were 88 representing 84.6% affirmed that collaboration took place. Group work activities were confirmed to have taken place by 89 respondents which represent 85.6%. Peer review mechanism also took place with 72 respondents representing 69.2% assertion rate, while 82 respondents representing 78.8% confirmed that there was cooperation between the students and lecturers. However, 64 respondents representing 61.5% stated that playing games related to entrepreneurship did not take place.

Majority respondents which were 81 representing 77.9% agreed that there was adequacy of collaboration among students and lecturers, 90 respondents representing 86.5% agreed that cooperation between teachers and lecturers provided motivation in the learning process and 86 respondents representing 86.5% agreed that group work activities were effective in the learning process. However, 55 respondents representing 52.9% disagreed that peer review exercises enriched the learning process and 64 respondents representing 61.5% also disagreed that playing games related to entrepreneurship was an appropriate learning strategy.

The measure for TBL was delivered from aggregating the total score of each of the respondent in the Likert scale. This was done by transforming the respondents' score, summation of the scores and then labeling the target variable as TBL.

Relationship between team based learning and Entrepreneurship Self-Efficacy

The relationship between the various measures of TBL and ESE was derived after running the score on each variable in a multinomial logistic regression. This was done at 5% level of significance are shown in table 1.

Table 1 : Relationship between TBL and ESE

Effect	Model Fitting Criteria		Likelihood Ratio Tests		
	-2 Log Likelihood	Reduced Model	of Chi-Square	df	Sig.
Intercept	357.906		42.876	13	.000
Collaboration	329.568		14.538	13	.337
Group work	332.432		17.403	13	.182
Preview review	357.180		42.150	13	.000
Related games	347.296		32.267	13	.002
Cooperation	336.746		21.717	13	.060

The test of statistics is such that if the hypothesis is tested at 5 per cent level of significance which is equivalent to 0.05 and the observed set of results has a probability less than 0.05, the null hypothesis is rejected and the difference between the sample statistic and the hypothetical population parameter is considered to be significant. The P value of collaboration is 0.337 which is greater than 0.05, hence the acceptance of null hypothesis. This implies that there is no significant influence of collaboration in TBL on ESE. It can therefore be concluded that Collaboration between students and lecturers does not significantly influence ESE.

The p value for group work is 0.182 which is also greater than 0.05 hence the acceptance of null hypothesis. This implies that there is no significant influence of group work in TBL on ESE. It can therefore be concluded that group work does not significantly influence ESE.

The P value for peer review is 0.000 which is less than 0.05; hence the null hypothesis is rejected. This means that there is a significant influence of peer review in TBL on ESE. It can therefore be concluded that peer review significantly influence ESE.

The P value for playing games related with entrepreneurship is 0.002 which is less than 0.05; hence the null hypothesis is rejected. This means that there is a significant influence of entrepreneurial games in TBL on ESE. It can therefore be concluded that entrepreneurial games significantly influence ESE.

The P value for cooperation is 0.060 which is greater than 0.05, hence the null hypothesis is accepted. This means that there is no significant influence of cooperation in TBL on ESE. It can therefore be concluded that cooperation among students and lecturers does not significantly influence ESE. The combined effect of TBL was obtained by aggregating the total parameters therein and regressing against the total score for ESE. This is shown in table 2

Table 2: Combined measure for TBL and ESE

Effect	Model Fitting Criteria		Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.	
Intercept	297.253	73.578	13	.000	
TBL	308.143	84.468	13	.000	

The overall p value for the TBL in EEP is 0.000 which is less than 0.05; hence the null hypothesis is rejected. This means that there is a significant influence of TBL on ESE. It can therefore be concluded that TBL in EEP significantly influence ESE of final year students in Kenya universities. Hypothesis one is therefore rejected and the alternative hypothesis accepted.

Discussions of findings

The study found that peer review mechanism and playing games related to entrepreneurship have a significant influence on ESE of the students. This concurs with Michaelsen and Sweet's (2008) who found that peer review enhanced learning. Peer review mechanism and playing games related to entrepreneurship is therefore likely to encourage team interactions, productive teamwork and communication. These activities are crucial in development of essential entrepreneurship skills and traits such as customer relationship, human resource management networking and strategic alliances.

However, the study found that collaboration among students and lecturers, group work activities and cooperation between the students and lecturers have no significant influence on ESE of the students. This is contrary to Metcalfe (2012), who found that group work activities, collaboration and cooperation among students and lecturers increases learner's engagement. This implies that whereas group work, collaboration and cooperation are important in the learning process, it is the right training approach that has significant influence on the learning outcomes.

Conclusion

The findings on the different parameters in the study variables had different relationships. Peer review mechanism and playing games related to entrepreneurship has a significant influence on ESE of final year students in Kenya universities while collaboration among students and lecturers, group work activities and cooperation between the students and lecturers has no significant influence on ESE of the students. However, team based learning has an overall a significant influence on ESE of the students.

Recommendations

It is recommended that peer review mechanism and playing games related to entrepreneurship should be encouraged in the team based learning. This is because these activities develop essential entrepreneurial skills and traits such as team work, good interrelationship and networking which increases the ESE of the students.

The study recommends further research on entrepreneurship related games which can be integrated in the learning process and their effectiveness in promoting entrepreneurship self-efficacy. Entrepreneurship related games are not common training approach yet they have significant influence on ESE. It would be imperative to identify these games and find out how they can be integrated in the curriculum.

REFERENCES

1. Cooper, W. A. (2014). *Enhancing self-efficacy to enable entrepreneurship*. Scotland: MIT Sloan School of Management.
2. Cuyper, H. v. (2011). Social capital, team efficacy and team potency. *Career Development International, Vol. 16 Iss. , 82 - 99.*
3. Decuyper, S. D. (2010). "Grasping the dynamic complexity of team learning: an integrative model for effective team learning in organizations". *Educational Research Review, Vol. 5 No. 2., 111-133.*
4. Entrekin, C. C. (2003). "Examining the effects of internal and external team learning on team performance". *Team Performance Management: An International Journal, Vol. 9 Iss 7/8, 174 - 181.*
5. Janz, B. a. (2003). "Understanding the antecedents of effective knowledge management: the importance of a knowledge-centered culture". *Decision Sciences, Vol. 34 No. 2., 351-84.*
6. Kothari, C. R. (2004). *Research methodology; Methods and techniques*. New Delhi: New Age International (P) Ltd.
7. Metcalfe, P. B. (2012). "Identifying teaching methods that engage entrepreneurship students". *Education and Training, 54, 368 - 384.*
8. Michaelsen, L. a. (2008). "The essential elements of team-based learning". *New directions for Teaching and Learning, Vol. 2008 No. 116, pp., 7-27.*
9. Miglietti, C. (2002). "Using cooperative small groups in introductory accounting classes: a practical approach". *Journal of Education for Business, Vol. 78 No.2, 111-115.*
10. Ohlsson, J. (2013). "Team learning: collective reflection processes in teacher teams". *Journal of Workplace Learning, Vol.25 Iss. , 296 - 309.*
11. Prater, E. a. (2003). "The impact of coordination methods on the enhancement of business writing". *Decision Sciences Journal of Innovative Education, Vol. 1 No. 1., 57-71.*
12. Restall, P. B. (2015). "Preparing students for Flipped or Team-Based Learning methods". *Education + Training, Vol. 57 Iss., 639 - 657.*
13. Sparrow, J. a. (2006). "Fostering team learning development". *Reflective Practice, Vol. 7, 151-62.*
14. Urassa, E. A. (2015). "Students' entrepreneurial self-efficacy: does the teaching method matter?". *Education and Training , 57 (8/9) .*
15. Walliman, N. (2011). *Research methods; The basics*. London and New York: Routledge.
16. Watson, D. C. (2011). "Conflict and performance in US and Mexican learning teams". *Cross Cultural Management: An International Journal, Vol. 18 Iss 4. , 426 - 442.*
17. West, M. (2002). "Sparkling fountains or stagnant ponds: an integrative model of creativity and innovation implementation in work groups". *Applied Psychology: An international Review, Vol. 51 No. 3., 355-387.*
18. West, M. H. (2004). "Twelve steps to heaven: successfully managing change through developing innovative teams". *European Journal of Work and Organizational Psychology, Vol. 13 No. 2., 269-299.*