Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/19337
DOI URL: http://dx.doi.org/10.21474/IJAR01/19337

RESEARCH ARTICLE

SKILLS LABORATORY APPROACHES AND ENTREPRENEURSHIP LEARNING ACHIEVEMENT IN UPPER SECONDARY SCHOOLS IN RWANDA A CASE OF NYAGATARE DISTRICT

Jean Francois Regis Hakizimana[1] and Dr. Hesbon Opiyo Andala PhD[2]

1. MED Student, School of Education, Mount Kenya University, Rwanda.
2. Senior Lecturer, School of Education, Mount Kenya University, Rwanda.

Manuscript Info

Manuscript History
Received: 21 June 2024
Final Accepted: 24 July 2024
Published: August 2024

Abstract

The need for entrepreneurial skills impacting the quality of teaching and learning entrepreneurship all over the world. More emphasize have been made in teaching entrepreneurship but entrepreneurial outcome for graduate in upper secondary is still critically. The study aimed to investigate the effect of skills laboratory approaches on learning achievement in entrepreneurship in upper secondary school of Rwanda. Study utilized descriptive research. The study included a total population of 3661 individual consisting of 49 deputy head teachers in charge of studies, 102 entrepreneurship teachers and 3510 upper secondary students from upper secondary schools in Nyagatare district, the researcher determined the sample size of 361 respondents using Yamane formula. structuring questionnaire, interview and observation are employed as tools of data collection. The result indicated that 86% strongly agreed that skills laboratory boast learners 'engagement and confidence in activity presentation, 87.9% strongly agreed that project based assessment enable learner's creation of project in student business clubs, 85.9% of respondents strongly agreed that Students business club helps learners to demonstrate entrepreneurship knowledge or skills learnt in real life, 92.2% strongly agreed that demonstration of skills lab improve pitching skills and creativity of project. Results revealed thatskills laboratory approach have positive significance to learners' performance since the p value is less than 0.005 underpinning the positive relationship between skills laboratory and entrepreneurship learning achievement.The study recommends thatThe study recommends learners to become actively engaged in group discussion, presentation so that improve learners' performance that result in interaction and improve their entrepreneurial skills and entrepreneurship achievement rather than memorizing for purpose of getting marks.entrepreneurship teachers to use skills laboratory approaches in teaching entrepreneurship lesson so as to help learners to solve community problem. School administration for participate in capacity building of entrepreneurship teacher by organizing community of practices and continuous professional development to boost the capacity of in service teachers on using skills laboratory approaches in teaching and learning entrepreneurship. curriculum designer and policy makers due to their role in education, to revise entrepreneurship

Corresponding Author:- Jean Francois Regis Hakizimana
Address:- MED Student, School of Education, Mount Kenya University, Rwanda.

curriculum into another image of teaching-learning activities, techniques, approaches, and assessment methods of entrepreneurship for practice purpose in secondary school of Rwanda.

……

Introduction:-

One of the biggest issues facing the global society today is employment. it will have the world's largest workforce by 2050 where 90% of those youthwill be expected to work in the informal sector (D. Dannalee, K. kamiri & M. Mahoney, 2021)Africa need to create more million jobs to keep pace with labor force growth and for preventing unemployment from that perspective education system in African country intended to produce more job creator as impacted by dynamic pedagogy that enhance students in real life scenarios using group discussion, interactive activities and creativity this support the student to acquire the skills that will help to reach to their own learning milestones (World bank,2018b).

In relation with entrepreneurship and laboratory learning methodology is not a new concept in africa, Africa education systems have generated more job seekers often with inadequate skills than producing entrepreneurs who will create job opportunities for others (Awusu and Blimpo, 2019). Therefore, education system has to be reformed from theoretical oriented approach to practical or active learning pedagogy so as to boost learners to be more innovative and creative in real life situation. Considering Mukute et al (2018) laboratory learning concerning research on economic problem by increasing productivity and improving human capital and deals with the effect of climatic change. Similar to Mudokwali and Mukute(2019) shows that laboratory approach in entrepreneurship learning concerned with issues of enterprise development and sustainability in economic activity, innovation and creativity in secondary school of Zimbabwe.

Centebelli&al,(2016) suggest that using active and practical teaching methods in entrepreneurship classroom solve the needs of society, therefore this equip students for entering in business world through providing wide range of entrepreneurial skills, personal quality and innovation so as to engage learners in gaining the ability and mindset of self-employment. In fact, many experiment from different studies shows that entrepreneurship through active learning approach is a productive activity that slows combine theoretical and practical approach in entrepreneurial field (Akhmetsin et al,2019).

According to (Filmer and fox,2014; African economic outlook, 2016; fox, senbet and simbanegavi, 2016) the Education policy priority have to address youth employment challenge in Africa and emphasizing on increasing productive skills that instill self-employment mindset in learners using active pedagogical approach in educational system.Educate Uganda report,2016 shows that approach of skills lab in entrepreneurship teaching and learning impacting Africa education system by preparing students for thriving labor market through innovation and creativity, thus many secondary school graduates in Uganda finish their education with those practical skills results from student centered pedagogy (active learning pedagogy) and gain ability of securing employment by starting their own business and fill the gap in job creation.

In Rwanda, laboratory teaching approaches is higher recommended in teaching social science and sciences as well for improving learning academic achievement and solve the community problem(ESSP,2015) but some teachers believe that laboratory learning are key in teaching science as it boosts student's awareness as well as developing their scientific skills (Dillon,2008), Most of teachers in Rwanda dominate the activities in classroom and mainly relying on lecturing teaching methods but this depend on several reasons such as number of students in classroom , lack of instructional material and lack of teacher training in practical teaching approach(Nzeyimana,2014). Study conducted by (Kigali institute of education ,2014) shows that active learning improves learners understanding and remembering of information and help them to develop problem solving and critical thinking as far as laboratory learning is concerned to make students active in learning especially in science and social science subject, in addition laboratory learning activities involve students directly in experiment by entrepreneurship practical learning in related fields (Angus& Keith,1992).

Problem Statement

Since 2009 Rwanda introduce entrepreneurship as a required subject in secondary school as part of curriculum reform to improve learning achievement the curriculum has revised to move away from knowledge based

learning(KBL) to competency based learning(CBL) so as to develop students independent, lifelong learning and application of skills and knowledge in real life situations (Tabaro,2018). The key aims of this curriculum reform(CBC) was to enable the students to attain a competence level in entrepreneurship subject they learnt and shift from memorization and recalling information to application of learning in real situation. (REB,2015).

However, As far as entrepreneurship education is concern in education system aimed to attain its goals but consequently the frustration experiencing in entrepreneurship education often arise from lack practical skills that enable graduates to start their own job, lack of active learning approaches, lack of collaboration, lack of effective communication, lack of cooperation (Murararaneza & Mtshali, 2018), perhaps this is obvious in the expectation of students in upper secondary school and are not able to apply what they learnt for driving there real life situation. For that case the difficulty is not insufficient of teachers and inadequate learning support given by teacher but are active learning approach which is not in use and inadequate entrepreneurship teacher training that enable teachers to help learners to use active learning approach in teaching and learning process, homework provided consider as if student are familiar with the way of working without giving any guidance for further response to reach milestones and if student asked about the importance of content and homework in real life surprisingly they don't know. Student should be aware about what is to be learned, what expected from lesson learned, haw is to be learned, haw they will know that there learned enough as well and haw learned lesson should be assessed to reach student's milestones. Therefore, Educate Rwanda report 2016 shows that to improve the list of youth through entrepreneurship education is necessary due to 61% of population are youth under age of 25 and 69% of youth in Rwanda are unemployed moreover 72% of youth in Rwanda employed in family business the shows the scarcity of job creator in Rwandan youth population.

There is a gap existing between the entrepreneurship knowledge students acquire from classroom and entrepreneurial skills and competencies are able to possess in real life situation so as to achieve learner's achievement. This study recommends skills laboratory approaches as a key factor for improving learning achievement in entrepreneurship subject.

Theoretical Literature Review

This theoretical literature reviewed theories, the authors 'views, ideas and thoughts on skills laboratory approaches on entrepreneurship learner's achievement. The researcher has discussed around the theories and overviews of skills laboratory and how it influences learners' achievement in entrepreneurship.

Skills laboratory approaches overview

Skills lab act as active learning pedagogy where student develop active engagement in learning, learning by doing, problem solving and learning through experience. Schmidgen(2021), this approach of "skills lab " originated in USA initially it was not a teaching method but was an instrument used to change science theory into real phenomena thus was based on question on current development in scientific practice especially in university of Geneva and Chicago during the last third of 19^{th} century skills lab have been introduced and applied for the purpose of increasing professional and enhance methods for creating innovation in science and in social science. K.heikken(2016) shows that entrepreneurial mindset, skills and creativity need in future work will require laboratory approach in entrepreneurship teaching and learning so as to develop connection between work life based problem and initiating a new business this increase professional educators who gain skills and attitude to work.

Therefore, in expansive learning conducted in skills laboratory in entrepreneurship shows that learner thought skills lab were able to learn through experience, practice and learn by doing this enable learners to come up with innovative solution to real life problem and form new possibility for work, additionally this learner also were learning to think entrepreneurial(Shumar &Robinson, 2019) agreeing to Guerrero et al(2020) in process of fostering innovation by forming new product within existing organization or new organization skills laboratory(skills lab) play big roles in changing learner's entrepreneurial mindset and become dynamic such as taking risks, sensing opportunities and transforming routines to become more innovative and proactive.

Smith and Patton (2014) argues that entrepreneurial education underpinning by constructive and collaborative development of a creative, critical and problem solving mindset comes as result of practical learning approach which is oriented into real work. Therefore, skills lab approach in learning process develop both psychomotor, cognitive and affective domains which helps to develop competencies used in application of knowledge, skills, attitude and values in entrepreneurial field (Chan,2002). Additionally, Successful laboratory education increase self-confidence,

motivation and help to boast competencies in learners (Lofmark et al,2012). Furthermore, the development of learner's capacity to understand and respond to the physical demands of daily life in an intelligent manner, require motor competency and daily activities for learners who learned by active learning pedagogy (davis and Chieh fu,2015)

Educate uganda report 2019 describe skills lab as a dynamic pedagogy that engages learners in real life situation, providing interactive activities, group collaboration and enhance problem solving skills as well as other soft skills like critical thinking, communication which combined together with hard skills like business plan, budgeting, market research this shows haw people learn by brain, thoughts, experience. Additionally, Loprinzi (2015) define skills laboratory learning as a change of performance, behavior resulted from practice to means that learning makes changes in performance from training process .

Skills laboratory approach and entrepreneurship achievement

There are different ways of learn entrepreneurship but skills laboratory has proven effectiveness in entrepreneurship teaching and learning. According to(Di Paola et al,2023) there is an increment knowledge and skills about entrepreneurship education within business schools due to curriculum designed to address a variety of issues such as laboratory approaches and improve the learners capacity to exhibit what their learnt. In a similar vein, learning with laboratories in entrepreneurship provide the range of service and educational program designed to make environment very conducive for innovation and creativity (Merguei, 2022; Ndou et al, 2018).

Effective entrepreneurship through skills laboratory boost learning process through different laboratory concept like gamification, group activity and collaborative discussion which improve student learning outcomes like learners become more attentive in lesson through gamification and collaboration together with communication become more real and allow learners to drive real life situation (Wangi et al, 2021)

Project based assessment and business creation

Project-based assessment evaluates students through the completion of projects that require applying knowledge and skills to real-world problems, Unlike traditional assessments, PBA emphasizes process over memorization, collaboration over isolation and creativity over memorization learning.(Botha, 2010) therefore Combining project-based assessment with entrepreneurship education offers a dynamic approach to learning that prepares students for the complexities of the modern world and By engaging in meaningful projects that reflect real entrepreneurial challenges, students develop the knowledge, skills, and attitudes necessary for success in both their personal and professional lives also This integration not only enhances academic achievement but also boost the entrepreneurial spirit essential for innovation and economic growth(Affandi et al., 2021).According to(Garraway et al., 2022)project based learning taken as learning model which use projects as a tools to achieve competency, knowledge and skills and this method of assessment lies down the activities to the learners that address the real life problems, researching and analysis so as to present learning products based on real life experience.

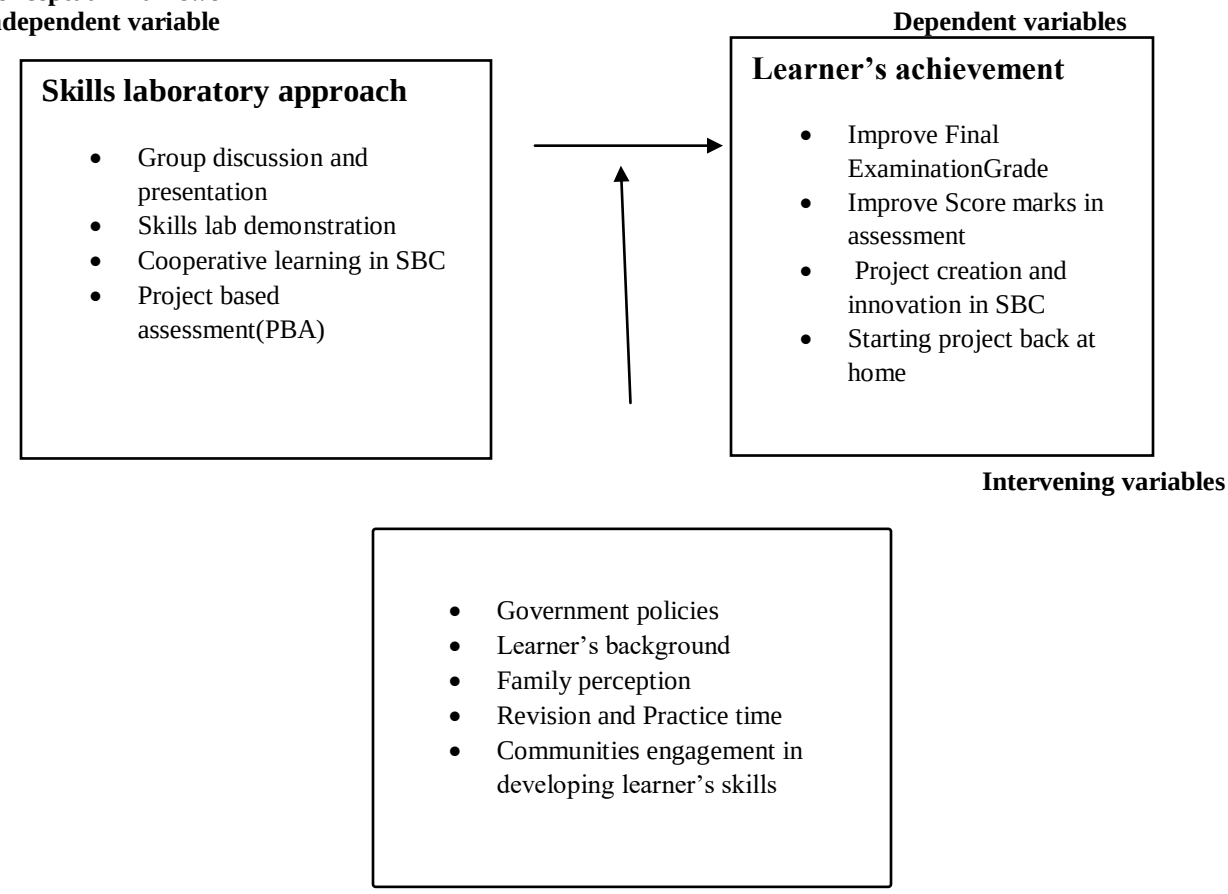
Experiential learning theory

David Kolb (1984) experiential learning theory state that the best way of learning things is actually by having experience. As stated by (David A et Robert, 2001; cliff,E ; Hall,P,2006) experiential learning pointing on the idea that taken as best way to learn things by actual concrete experience, reflective observation, abstract conceptualization and active experimentation this comes from experiences in doing particular skills or competencies and laboratory teaching aligns in this theory,by providing students with direct experiences that they can reflect up on and learnt from through giving learners platform to practice especially in group and practice based curriculum.

Social learning theory

Bandula (1973) suggest that learners learnt from observing other's behavior, attitudes and outcomes of those behavior. Thought skills laboratory approach learners learnt by social interaction, lesson model and positive reinforcement in learning process whichincreased student participation and engagement in entrepreneurship lesson (Graham, 2014). In a skills laboratory, students learnt not only from their own experiences but also from observing and collaborating with peers, instructors, and experts in that context Social learning theory highlights the importance social reinforcement in skills acquisition and development so as to develop entrepreneurial skills and make business project in classroom assessment and student business club(Daniels & Billingsley, 2014).

Conceptual Framework



Research Methodology:-

The descriptive survey approach was used for this study because it allows variables or the observable condition of a phenomenon to be described. It also facilitates the process of drawing conclusions on the behavior of a particular occurrence or the relationship between variables. Using this methodology, the study described the effect of skills laboratory approaches on entrepreneurship learning achievement in upper secondary schools in Rwanda. In order to determine the relationship between learners' achievement in entrepreneurship and skills laboratory approaches utilized in Rwanda's upper secondary schools.

The target population of this study comprised of Deputy Head teachers in charge of studies, entrepreneurship teachers and Learners from upper secondary schools located in Nyagatare district. This study focused on fifty-one (51) schools from Nyagatare district. The target population were three thousand six hundred and sixty-one (3661).

According to Mugenda (2008) suggests that sampling the population is advisable when the population exceeds 100 individuals. The population of nyagatare upper secondary schools is 3661 and then the researcher used Yamane's formula to compute the sample size. The investigator took 95% confidence interval equivalent to 0.05 error margin

It is computed as $n = \frac{N}{1+N(e)^2}$ Whereas, n = sample size, N = total population , e = error margin, N=3661 e=0.05 n=? Therefore, n=3661/1+3661(0.05^2)=361

Simple random sampling method were used to select respondents and collect data from the deputy head-teachers in charge of studies. The researcher utilized the purposive sampling technique to choose among the teachers and stratified sampling were used to select learners from upper secondary school. All responses were chosen based on their knowledge of entrepreneurship Teaching and learning approaches and experience.

Table 3.1:- Targeted population and sample size.

Respondents	Population	Sample
Deputy head teacher in charges of studies	49	4
Entrepreneurship teachers	102	8
Upper secondary students	3510	349
Total	3661	361

Source researcher (2024)

Data were gathered by using different instrument includes questionnaire, interview and observation, students were asked by questionnaires, which combine closed-ended questions. Since questionnaires are quick and simple for respondents to understand, they are an efficient way to gather data while also saving time. Furthermore, surveys are an efficient way to gather a lot of data quickly.

In order to get information from entrepreneurship teachers and Deputy Head teachers in charge of studies, the researcher also employed interview guides. Each entrepreneurship teacher and deputy head teacher had a face to face conversation about this. The interview method of data collecting is crucial since it yields more information about the study region, enhancing the precision of the recommendations and conclusions.

After the researcher had collected adequate data to meet sampling requirements, the researcher assigned codes, as well as, summarized and analyzed data using SPSS factor analysis. All data gathered were analyzed using IBM SPSS 21 statistical packages for social sciences. The creation of descriptive statistics, primarily frequencies and percentages, means, and standard deviations, affecting to the study variables skills laboratory approaches and learners' academic achievement in entrepreneurship in upper secondary schools in Rwanda and all demographic information were employed. Furthermore, to determine the effect of skills laboratory approaches on Learners' achievement in entrepreneurship in upper Secondary Schools of Rwanda, inferential statistics were generated, Pearson correlation coefficient, T-test coefficients, p values and regression coefficients.

Research Findings Interpretation and Discussion:-

The objective of this research was to investigate the effect of skills laboratory approaches on entrepreneurship learning achievement in upper secondary schools. Findings identified that skills laboratory approaches have improved learning achievement in entrepreneurship among learners in upper secondary schools, the descriptive statistics findings are presented in the table below. The findings after analyzing the data from the respondents on the use of skills laboratory approaches were summarized in the table below:

Effect of skills laboratory approaches on entrepreneurship learning achievement

Effect of skills laboratory approach on entrepreneurship learning achievement	SD	D	N	A	SA	Mean	Std. Deviation
Group discussion boast our engagement and confidence in presentation of findings in our classroom		3%	10.5%	38.5%	47.5%	4.38	0.686
Project based assessment enable us to create new project/business in SBCs in our school		6%	10%	34.3%	53.6%	4.42	0.697
Students business club help us to demonstrate entrepreneurship knowledge or skills learnt in real life scenario	8%	4.4%	5.5%	36.6%	49.3%	4.34	0.847
Skills lab demonstration improve pitching skills and creativity of project in our classroom		8%	3.6%	42.9%	49.3%	4.46	0.613

Source: primary data 2024

The findings in the above Table 1 show that majority of the respondents confirmed the use of skills laboratory approach improve entrepreneurship learning achievement. The table indicated that 86% of the respondents agreed that the use of group discussion boast learners' engagement and confidence in classroom's activities presentation and 13.5% opposed the above agreement. 87.9% of respondents confirmedthe contribution of project based assessment in creating the new product in student business club and 16% of respondents denied.Followed by 85.9% of respondents agreed to the contribution of student business club improving entrepreneurship skills appliedin real life scenario while 12% denied and 92.1% of respondents accept that skills lab demonstration improve pitching skills and creativity of project while 11.6% refused. The data shows that a majority of learners agreed that group discussions boost their engagement and confidence in presenting findings as shown by the mean score of 4.38 which is significance indicator of positive acceptance and the standard deviation of 0.686 indicates moderate variability in responses. This indicates significance positive relationship between skills laboratory approaches and entrepreneurship learning achievement.From the interview the researcher had with the entrepreneurship teacher and deputy head teachers in charge of studies, 9 of 13 respondents' equivalent to 77.8% indicated that learners' achievement and performance depend on the approaches used while teaching-learning Entrepreneurship, they were more improved learners achievement when the teachers used skills laboratory, group discussion and presentation, project-based assessment approaches in teaching Entrepreneurship and 23.2% disagreed with this variable.

Table 2:- Regression analysis between independent variable and learning achievement in entrepreneurship.

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
	(Constant)	4.539	.343		13.243	.000
	Skills lab Demonstration	.191	.044	.223	4.315	.000
	Project based assessment	.092	.047	.099	1.947	.052
	Student business club	.257	.043	.302	5.954	.000
	Group discussion and presentation	.060	.038	.078	1.561	.019

Dependent Variable: Learning achievement in entrepreneurship
Source: Primary data 2024

Findings from respondents to this study show the regression analysis between the dependent variable as entrepreneurship learning achievement and the independent variable as group discussion and presentation, skills lab demonstration, student business club, project based assessment. The above shows skills lab demonstration was positively statistically significant with entrepreneurship learning achievement (B = .223, p-value =.000), project based assessment was positively statistically significant with entrepreneurship learning achievement (B =.099, p-value =.052), student business club were positively significant affecting learning performance in entrepreneurship (B =-.302, p-value =.000),group discussion and presentation was positively affecting learning achievement in entrepreneurship (B =-.078, pvalue =.019).

Therefore 1% usage of teaching methodologies in implementing group discussion, SBCs and project based assessment approaches leads to significance improvement in learners' achievement in entrepreneurship in upper secondary schools. Hence, the implementation of skills laboratory approaches while teaching Entrepreneurship affect learners' speaking skills. Since the p values are all less than 0.05, it implies that there are positive effects in using skills laboratory approaches on learners' academic achievement are significant.

The researcher had open interview with entrepreneurship teachers and deputy head teachers in charge of studies among the selected schools and from the interview, they mostly indicated that skills laboratory approaches used in teaching Entrepreneurship help learners to improve their academic achievement through group discussion and

presentation, students business clubs, project based assessment approaches learners improve their entrepreneurial skills and enable learners to acquire knowledge that helps them to start innovative and creative project.

Conclusion:-

The study concluded that there is positive effect of skills laboratory approaches on learning achievement in entrepreneurship. The 87.9% of the respondents about the influence of skills laboratory approaches and learner's academic achievement in entrepreneurship and confirmed the effect of skills laboratory approaches on learners' achievement in entrepreneurship. The mean for all indicators is equivalent to 4.3 and standard deviation is approximate to 0.68 which indicate that the respondents agreed that skills laboratory approaches used in teaching entrepreneurship have an effect on learners' academic performance in entrepreneurship in upper secondary schools of Nyagatare district of Rwanda. Whenever group discussion and presentation, student business clubs, project based assessment and skills lab demonstration approaches are used in school and classroom setting in teaching and learning of entrepreneurship its highly improve learners' academic performance, engagement in presentation, business pitching skills, innovative and creative project thus improve entrepreneurial competencies and score performance in entrepreneurship in upper secondary schools in Nyagatare District Rwanda.

Recommendations:-

The study recommends learners to become actively engaged in group discussion, presentation and other classroom activities that activate their learners' achievement that result in interaction and improve their entrepreneurial skills and entrepreneurship achievement rather than memorizing for purpose of getting marks.

This study recommends learners to improve learners' achievement in entrepreneurship lesson not only for getting marks but also to have insight in practicing the skills learnt. Basing on findings this study gives learners the room to practice the skills learnt in business clubs and improve interactive participation in entrepreneurship lesson through group activities and project based assessment involves in skills laboratory approaches.

This study recommends entrepreneurship teachers to use skills laboratory approaches in teaching entrepreneurship lesson so as to help learners to solve community problem. Also the findings of this study recommends the school participate in capacity building of teacher by organizing community of practices(COPS) and continuous professional development(CPD) to boost the capacity of in service teachers on using skills laboratory approaches in teaching and learning entrepreneurship.

Lastly, this study recommends curriculum designer and policy makers due to their role in education, to revise entrepreneurship curriculum into another image of teaching-learning activities, techniques, approaches, and assessment methods of entrepreneurship for practice purpose in secondary school in Rwanda and curriculum designer is expected to design/review new teaching and learning materials and syllabus as well as curriculum so as to overcome the barrier to entrepreneurship practical skills acquired by learners.

References:-

1. Akhmetshin, E.M., Mueller, J.E., Chikunov, S.O., Fedchenko, E.A., &amli; lironskaya, O.N. (2019). Innovative technologies in entrelireneurshili education: The case of Euroliean and Asian countries. Journal of Entrelireneurshili Education, 22(1).
2. Affandi, M., Mitsuru, T., Kamil, M., & Suryadi, A. (2021). The Effect of Project Based Learning Models on Improving Student Learning Results on Entrepreneurship Education. Proceedings of the First Transnational Webinar on Adult and Continuing Education (TRACED 2020), 548(Traced 2020), 122–128. https://doi.org/10.2991/assehr.k.210508.023
3. Botha, M. (2010). A project-based learning approach as a method of teaching entrepreneurship to a large group of undergraduate students in South Africa. Education as Change, 14(2), 213–232. https://doi.org/10.1080/16823206.2010.522059
4. Di Paola, N., Meglio, O., & Vona, R. (2023). Entrepreneurship education in entrepreneurship laboratories. International Journal of Management Education, 21(2), 100793. https://doi.org/10.1016/j.ijme.2023.100793
5. Garraway, J., Friedrich-Nel, H., & Dippenaar, H. (2022). Learning to become entrepreneurial through a change laboratory methodology. Critical Studies in Teaching and Learning, 10(1), 116–135. https://doi.org/10.14426/cristal.v10i1.527

6. Hamidu, M. Y., Ibrahim, A. I., & Mohammed, A. (2014). The Use of Laboratory Method in Teaching Secondary School Students: a key to Improving the Quality of Education. International Journal of Scientific & Engineering Research,5(9), 81–86. http://www.ijser.org/researchpaper%5CThe-Use-of-Laboratory-Method-in-Teaching-Secondary-School-Students-a-key-to-Improving-the-Quality-of-Education.pdf
7. Ingebjørg Strand, RN, MNSc, Assistant Professor – Dagfinn Nåden, RN, MNSc, Cand.mag, HVD, Professor – Åshild Slettebø, RN, MNSc, PhD, P. (2009). Jurnal students learning laboratory. PUBL. NO.
8. Isozaki, T. (2017). Laboratory work as a teaching method: A historical case study of the institutionalization of laboratory science in Japan. Espacio, Tiempo y Educación, 4(2), 101. https://doi.org/10.14516/ete.177
9. Kovalenko, K.E., Utyuzh, A.S., Iusupova, I.I., Plisova, A.B., Panchenko, N.B., & Kuznetsova, N.V. (2019).Practice-oriented approach in teaching entrepreneurship. Journal of Entrepreneurship Education, 22(5).
10. Centobelli, li., Cerchione, R., Esliosito, E., &amli; Raffa, M. (2016). The revolution of crowdfunding in social knowledge economy: Literature review and identification of business models. Advanced Science Letters, 22(5-6), 1666-1669.
11. MINEDUC (2016e). Education Sector Strategic Plan 2013/14 to 2017/18 Mid-Term Review. March 2016. Kigali: Republic of Rwanda.
12. MINEDUC (2015a). The Competence-Based Curriculum Framework. Kigali: Republic of Rwanda
13. Manjunatha. N. (2021). Quantitative Methods: Descriptive Research. Journal of Emerging Technologies and Innovative Research, 6(6), 863–867. www.jetir.org
14. Mentari, N. (2021). The Using of Laboratory Social Studies as a Learning Resources in Junior High School. International Journal Pedagogy of Social Studies, 6(2), 71–80. https://doi.org/10.17509/ijposs.v6i2.28582
15. Murararaneza, C., & Mtshali, G. N. (2018). Implementation of competency based curriculum in pre-service nursing education: Middle range theory. International Journal of Africa Nursing Sciences, 8(February), 53–58. https://doi.org/10.1016/j.ijans.2018.02.006 No Title. (2019).
16. N. Zeng, M. Ayyub, H. Sun, X. Wen, P. Xiang, & Z. Gao,(2017) Effects of physical activity on motor skills and cognitive development in early childhood: A systematic review. BioMed,
17. Wangi, N. B. S., Setyosari, P., Kuswandi, D., & Dwiyogo, W. D. (2021). Integrating gamification in a blended learning entrepreneurship course: Discussing student learning and achievement motivation. International Journal of Innovation and Learning, 30(1), 91–113. https://doi.org/10.1504/IJIL.2021.116574.