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Tracer study of bachelor of science in entrepreneurship graduates of Kalinga State University

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Abstract

Aim: This paper aimed to assess the practical applicability of Kalinga State University's Bachelor of Science in Entrepreneurship curriculum to the graduates' chosen fields of work or business.

Methodology: The graduates' responses were primarily gathered using a modified version of the Commission on Higher Education's Graduate Tracer Study (GTS) questionnaire. Forty-four (44) grads from batch 2015-2019 filled out the google form questionnaire that was sent out via email and messenger. Microsoft Excel was used to calculate and analyze the numerical data collected via Google Forms.

Findings: The results demonstrated that the skills, knowledge, and experiences gained by students at the University were applicable and beneficial to their current professions. However, few graduates opened their businesses after graduation because of a lack of funding for initial investment. However, most B.S. Entrepreneurship alums unable to launch their own businesses are now gainfully employed at private companies. Furthermore, most recent college graduates who aren't working are doing so for reasons unrelated to their education or family. The study found that alums had overwhelmingly positive impressions of the University's teaching staff, student body, and overall infrastructure. Implications/Novel Contribution: Therefore, this paper's findings will inform Kalinga State University's efforts to enhance the B.S. Entrepreneurship curriculum, learning environment, facilities, and overall services for its students and other Higher Education institutions offering entrepreneurship education.

Keywords: Employability, Curriculum, Tracer study, Entrepreneurship education, Graduates, Facilities, Learning environment

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INTRODUCTION

Because entrepreneurs have a clear impact on economies and societies, many countries are beginning to include entrepreneurship classes in their curricula (Jack & Anderson, 1999; Karimi, Chizari, Biemans, & Mulder, 2010; Bruce, McNally, & Kay, 2013; Thrane, Blenker, Korsgaard, & Neergaard, 2016). According to recent research, entrepreneurship education positively affects students' entrepreneurial intent and motivation to start their own businesses (Abdullah, Mohamad, Bakar, Hashim, & Ooi, 2013; Hattab, 2014). Intriguingly, despite these differences, entrepreneurs in different countries are inspired and discouraged by similar factors (Giacomin et al., 2011).

Entrepreneurship education is a newer field of study in the Philippines. There are currently 288 universities and colleges in the Philippines that provide entrepreneurship-focused baccalaureate and master's degree programs (Ronda, 2017). According to Gatchalian (2010), entrepreneurship education is characterized by a strong emphasis on hands-on learning and group collaboration. The program's ultimate objective is to foster the next generation of business leaders who will go on to drive economic growth and social progress. After completing an entrepreneurship program, graduates should launch their own businesses or find employment. The curriculum includes theoretical background and practical experience with entrepreneurship (El-Den, Adikhari, & Adikhari, 2017; Neck & Greene, 2011). Because of the heavy emphasis on practical exercises, projects, and other forms of assessment in this course, I will need to closely monitor how the students are doing.

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Quality graduates result from a comprehensive curriculum that provides practical experiences for students (Ahmad, Zainal, Idris, & Rahmat, 2012; Ismail & Mohammed, 2015). Graduates who are marketable in their field can find work anywhere in the world. Graduates with a Bachelor of Science in Entrepreneurship are expected to launch their own companies. It is because of this that providing entrepreneurship education in universities is problematic. The curriculum should be well-organized, covering the various aspects of managing a business, and, more importantly, it should integrate subjects that develop students' entrepreneurial competencies and moral values (Jack & Anderson, 1999; Janet & Akinde, 2020). Aspiring business owners need to learn the importance of being good citizens if they want to see the economy and business world thrive for the long haul. According to Seikkula-Leino (2011), entrepreneurship curriculum development could be done based on practice-oriented terms to achieve the goals cited in (Cincera et al., 2018). When teaching, it's important to consider students' cultural identities so they can develop a sense of belonging to their community as entrepreneurs.

Furthermore, due to the vast diversity of entrepreneurship education, different teaching models and practices need to be applied in other contexts (Achtenhagen & Johannisson, 2013). This will equip them to make an impact as successful business owners. Students, graduates, parents, faculty, local business owners, and representatives from federal government agencies should all have input into the curriculum development process. Together, we can build an ecosystem that supports entrepreneurs and helps them succeed.

An important step in determining whether or not a curriculum is successful and useful to graduates in the workplace is to conduct a tracer study. In addition, a graduate tracer study can help institutions figure out what they're doing right and where they can enhance facilities with a high-quality education (Cañizares, 2015; Gines, 2014). The Bachelor of Science in Entrepreneurship at Kalinga State University was not represented well in a tracer study conducted by Marcos, Dawaton, Belandres, and Aquino (2017), which looked at all of the business degree programs at the university. This research filled in the blanks in the Graduate Tracer Study for B. S. Entrepreneurship graduates and offered a more complete picture of the program's benefits and drawbacks. Educators, policymakers, graduates, students, and others with a stake in the future of entrepreneurship education in the Philippine educational system will also find helpful information in this study.

Objectives of the Study

- 1. To determine the reason (s) for taking the B.S. Entrepreneurship degree;
- 2. To determine the employment status of the graduates in if they are employed in terms of
- 2.1 Status of employment
- 2.2 Type of agency being employed at
- 2.3 Job level position
- 2.4 Length of time to land a job
- 2.5 Initial gross monthly earning
- 2.6 Difficulties Encountered in Looking for a Job.
- 3. To determine the reason graduates for being unemployed.
- 4. To determine the business profile of the graduates' businesses in terms of:
- 4.1 Year established
- 4.2 Type of business
- 4.3 Annual gross income
- 5. To determine the rate of contribution of the program in the graduate's current employment; and
- 6. To determine the level of satisfaction of the graduate with the University as follows:
- 6.1 Learning environment and faculties
- 6.2 Facilities

LITERATURE REVIEW

The importance of conducting tracer study is recognized globally by Higher Education Institutions as the quality of any nations human capital is linked to the effectiveness of academic institutions. Tracer studies are a form of practical research that can evaluate the outcomes of the institutions delivery of instruction and training



programs for its students (Evangelista & Morales, 2017). It provides data on graduate employment status and information on the relevance of the curriculum in their first and current jobs and, more specifically, the relationship between educational qualifications and requisite work skills (Cuadra, Aure, & Gonzaga, 2019; Cañizares, 2015; Gonzales, 2019; Jingnan, Yunus, & Kamal, 2018). Also, graduate tracer studies provide valuable data that can be used to determine how well educational institutions are meeting their vision, mission, and objectives for their program offerings. Moreover, a tracer study is a valuable source of information as a basis for conducting curriculum reviews. This process will help align the curriculum content to address the emerging demands of the industry (Reusia, Danilo Jr, & Andres, 2020), especially for entrepreneurship education as a very dynamic discipline.

Entrepreneurship education is becoming more significant worldwide, but some critical educational and didactical issues are still to be addressed. According to Fayolle (2018), there is a need for strong intellectual and conceptual frameworks for education and entrepreneurship. Moreover, activities and approaches must be critically examined. Entrepreneurship education has a shared aim of strengthening entrepreneurs with a value focus towards a prosperous society. All future entrepreneurs are in school now, and their value-oriented education and ability to participate are influenced by what they learn today. Moreover, it is a challenge for academic institutions to equip students with entrepreneurial competencies. The development of these competencies does not begin after graduation but rather earlier in our socialization. According to the European Commission (2016), entrepreneurial competence is defined as an individual's ability to put ideas into action. To achieve specific goals necessitates imagination, ingenuity, willingness to take risks, and the ability to plan and execute projects. It improves an individual's personal and social life daily and allows workers to be more aware of their working environment and grab opportunities.

According to Duyan (2019), the Personal Entrepreneurial Competencies of Kalinga State University Students were moderate. Thus, more effort is required to strengthen students entrepreneurial competencies to become more competitive and increase their success as future entrepreneurs or professionals. Moreover, Kaur, Awasthi, and Grzybowska (2020) postulates that the core competencies in decision-making, teamwork, leadership and general aptitude combined with technical skills and general aptitude are considered top skills in todays business world. Therefore, this study aims to assess the experiences of Entrepreneurship graduates in their transition from school to the corporate world. It also aims to assess the graduates' perception of the quality of the University services, learning environment, and facilities to address existing areas of improvement in the delivery of entrepreneurship education.

RESEARCH METHOD

The study applied a descriptive research design using a survey questionnaire as a primary tool to gather the data about the current employability of graduates. The survey questionnaire was patterned from the GTS of the Commission on Higher Education and the tools used by Gines (2014). It was modified based on the study's objectives. There were forty-four (44) B.S. Entrepreneurship graduates from Batch 2015-2019 who participated in the study as shown in Table 1. The 60 percent basis of computing number of respondents was used in conducting tracer studies was used to compute the number of graduates to represent the overall population. The list of graduates was gathered from the University Registrar Office with permission, and their profile is shown in Table 2.

The questionnaire consists of five parts: demographic profile of graduates, educational background, training, and advanced studies attended after college, employment data, and assessment of the University services. Before administering the questionnaire, the researcher followed the process of the University in the approval of research. First, the proposal with the questionnaire was submitted to the college coordinator and college dean. Then, the College Dean endorsed the proposal to the Vice President of Research and Extension Services for checking. Upon approval of the research committee, the questionnaire was administered to the respondents. The numerical summary of responses was extracted from the google form then computed and analyzed using Microsoft Excel. The researcher enlisted the help of a statistician to ensure the accuracy of the computation and analysis. More significantly, the researcher maintained the highest level of confidentiality in graduates' profiles to prevent prejudices in data analysis.



Table 1: The population of the study

	I I	····
School Year	Total No. of B.S. Entrepreneurship	Number of Respondents
	Graduates including summer	
2015-2016	18	11
2016-2017	13	8
2017-2018	22	13
2018-2019	20	12
Total	73	44

Table 2: Profile of respondents

Profile Variables	Frequency	Percentage
Age		
18-24	23	52%
25-34	21	48%
Gender		
Male	9	20%
Female	35	80%
Civil Status		
Single	36	82%
Married	8	18%

Table 3: Scale and qualitative description to assess the program's contribution to current employment

Arbitrary Values	Limits	Description	Symbol
5	4.21-5.0	To a great extent	GE
4	3.41-4.20	To some extent	SE
3	2.61-3.40	Limited	L
2	1.81-2.60	Very limited	VL
1	1.00-1.80	Not at all	NA

Table 4: Scale and qualitative description to assess the university services

Arbitrary Values	Limits	Description	Symbol
5	4.21-5.0	Very High Satisfac-	VHS
		tion	
4	3.41-4.20	High Satisfaction	HS
3	2.61-3.40	Moderate satisfaction	MS
2	1.81-2.60	Low Satisfaction	LS
1	1.00-1.80	Very low satisfaction	VLS

Table 1 shows the total population of the respondents and the number of graduates who responded from each batch. Table 2 presents the profiles of graduates in frequency and percentage. Table 3 shows the scale and qualitative description used in evaluating the contribution of the curriculum to the current occupations of graduates. Lastly, Table 4 presents the scale and qualitative description in the assessment of the University services.

RESULTS AND DISCUSSION

This section presents whether the Bachelor of Science in Entrepreneurship curriculum was relevant and valuable to the current employment of graduates. Also, it shows how the graduates assess the services and facilities of the University.



Table 5: Primary reasons for taking up B.S. entrepreneurship degree

	Primary Reas	sons for taking up B.S. Entrep	reneurship Degree $(N = 44)$
Reasons for Enrolling Bachelor of Sci-	f	%	Rank
ence in Entrepreneurship			
High Grades in the course or subject	5	6	6.5
area (s) related to the course			
Influence of parents or relatives	10	13	4
Peer Influence	2	3	8
Inspired by a role model	16	21	2
Strong passion for engaging in business	22	29	1
Prospect for immediate employment	7	9	3
Status or prestige of the profession	3	4	7
Prospect of career advancement	5	6	6.5
Affordable for the family	7	9	5
Total	77	100	

Table 5 discloses that strong passion for engaging in business (29%) and inspired by a role model (21%) are the main reasons the respondents took up B.S. Entrepreneurship program..

Table 6: Employment status of the graduates

		Table	6: Employment	status of the g	raduates		
	Frequency ar	nd Percentage I	Distribution of F	Respondents Ac	ecording to Em	ployment $(N = 44)$	
Batch	Employed		Unemployed		Self-employed		
	f	%	f	%	f	%	
2015- 2016	7	15.91	2	4.55	2	4.55	
2016-2017	4	9.09	4	9.09		0	
2017-2018	10	22.73	2	4.55	1	2.27	
2018-2019	9	20.45	2	4.55	1	2.27	
Total	30	68.18	10	22.73	4	9.09	
	Frequency ar	nd Percentage I	Distribution of F	Respondents Ac	ecording to Stat	tus of Employment $(N = 30)$	
Batch	Regular		Contractual		Job Order		
	f	%	f	%	f	%	
2015- 2016	3	10	3	10	1	3.33	
2016-2017	2	6.67	2	6.67	-	-	
2017-2018	3	10	6	20	1	3.33	
2018-2019		-	6	20	3	10	
Total	8	26.67	17	56.67	4	16.67	
	Frequency ar	nd Percentage I	Distribution of I	Employed Grad	luates Accordin	g to Type of Agency $(N = 30)$	
Batch	Private		Public				
	f	%	f	%			
2015- 2016	4	13.33	3	10			
2016-2017	4	13.33	-	-			
2017-2018	6	20	4	13.33			
2018-2019	5	16.67	4	13.33			
Total	19	63.33	11	36.67			



	Employed Graduates According to Type of Agency $(N = 30)$									
Batch	Private		Public							
	f	%	f	%						
2015- 2016	6	20	1	3.33						
2016-2017	3	10	1	3.33						
2017-2018	8	26.67	2	6.67						
2018-2019	9	30	-	-						
Total	26	86.67	4	13.33						
	Respondent	s Looking for a Jo	b after Graduat	ion (N = 30)						
Batch	Less than a	Month	1 to 6 Mon	ths	7 to	o 11 Months				
	f	%	f	%						
2015- 2016	-	-	6	20	1	3.33				
2016-2017	-	-	3	10	1	3.33				
2017-2018	1	3.33	3	10	5	16.67				
2018-2019	-	0	7	23	2	6.67				
Total	1	3.33	19	63.33	9	26.67				
	Gross Monthly Earning $(N = 30)$									
Batch	5,000 to les	s than 10,000	10,000 to le	ess than 15,000						
	f	%	f	%						
2015- 2016	6	20	2	6.67						
2016-2017	3	10	1	3.33						
2017-2018	8	26.67	2	6.67						
2018-2019	8	26.67	-	-						
Total	25	83.33	5	16.67						
Difficulties in looking for a Job	Respondent	s having problem	s Looking for a	Job						
	f	%	Rank							
Few job vacancies/lack of position or item	24	53	1							
Inadequate experience	5	11	2							
Mismatch of education qualifications	4	9	3.5							
Passing the pre-employment interview	2	4	6.5							
Passing the pre-employment exam	2	4	6.5							
Not meeting paper requirements	1	2	8							
Inadequate knowledge or skills	4	9	3.5							
Others, Health-related problem	3	7	5							
Total	45	100%								

It can be gleaned in Table 6 that there is a high employment rate of B.S. Entrepreneurship graduates (68.18%) and most of them are employed in private entities (63.33%) on a contractual basis (56.67%). This suggests that Entrepreneurship graduates are in demand in the business industry, and graduates prefer to work in the private sector than in the public sector. The findings suggests that business graduate students choose to work in the private sector for their first job experience. However, the table also shows that only a few graduates established their enterprises after graduation (9.09%). The common reason for graduates not starting their businesses upon graduation was the lack of capital. This suggests that the graduates have difficulty securing finance for their start-ups.

Further, the table shows that most employed graduates occupy rank and file positions (86.67%) and earn an average of 5,000 to less than 10,000 in a month (83.33%). The table also reveals that most of the graduates landed in their jobs in 1 to 6 months (63.33%) after graduation. This suggests that B.S. Entrepreneurship graduates meet the minimum qualifications of private entities; however, they lack job opportunities for higher positions. This further implies that graduates lack confidence in applying for more relevant and good-paying jobs outside the Province. This confirms Marcos et al. (2017) findings that business graduate students at Kalinga State University prefer to work locally than to look for jobs in other cities.



Table 7: Frequency and percentage distribution of respondents as to their reasons for being unemployed

Reasons for Unemployment	Reasons for b	eing unemployed (N = 10)		
	f	%	Rank	
Advanced or further study	3	30	1.5	
Family concerns and decided not to find	3	30	1.5	
a job				
Lack of work experience	2	20	3	
Did not look for a job	2	20	4	
Total	10	100		

Table 8 reveals that most unemployed graduates' reasons for being unemployed are further advanced study (10%) and family concerns (30%). This implies that graduates prefer to focus on their studies first. It further means that family issues influence the decisions of graduates in their career decisions.

Table 8: Frequency and percentage distribution of respondents as to their reasons for being unemployed

	Est	ablish	ment	Bus	iness Types	Ann	ual Income							
Batch	201	17	2018	3	2019		Retailing		Fo	od Processing	< 5	0,000 Pesos	50,	,000-100,000 Pesos
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
2015- 2016	2	50							1	25	1	25	2	50
2016-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2017-2018	-	-	1	25			1	25	-	-	-	-	1	25
2018-2019	-	-	-	-	1	25	1	25	-	-	1	25	-	-
Total	2	50		25	1	25	3	75	1	25	3	75	1	25

Table 9 shows that the four businesses established by the graduates are still in a critical stage of business operations. Among the four businesses, three are in retailing, and one is in food processing. Most of them are earning less than 50,000 pesos annually.

Table 9: The extent of contribution of the program to current employment

	TPI	, , c	. 11		1 0		, 1	·// (N. 20)
	The e	xtent of	contrib	ution of	the prog	gram to curre	nt empl	oyment/business operations (N = 30)
Skill/Competency	5	4	3	2	1	Wtd Ave	D.E	Rank
Enhanced academic knowledge	1.5	2.13	0.4	0.07	0	4.1	S.E.	2
Developed entrepreneurial competencies	0.83	1.87	0.8	0.13	0.03	3.67	S.E.	7
Improved problem-solving skill	1.17	1.87	0.6	0.13	0.03	3.8	L	6
Improved learning efficiency	1.83	1.87	0.2	0.13	0.03	4.07	S.E.	3
Improved communication skills	2.5	1.33	0.2	0.13	0.03	4.2	S.E.	1
Improved information technology skills	0.67	1.2	1.3	0.2	0.03	3.4	L	8
Enhanced team spirit	2.33	0.93	0.6	0.13	0.03	4.03	SE	4.5
Improved managerial skills	2.17	1.2	0.5	0.13	0.03	4.03	SE	4.6
Total						3.91		

Table 10 shows the contribution of the program to the graduates' current employment. It reveals that improved communication skills rank first among the eight indicators, followed by enhanced academic knowledge and improved learning efficiency. This implies that the curriculum helped develop the communicative competence of graduates that they find helpful in their current jobs. This supports Martin, McNally, and Kay (2013) claim that communication skills are beneficial for graduates regardless of their job. Also, Khiri (2014) postulates that character and soft skills are essential in enculturating entrepreneurship among graduates in which for soft skills, communication skills are highlighted.

The lowest rank, however, is the improvement in information technology skills. This could imply that one of the curriculum's weaknesses is enhancing the technical skills of students. The overall weighted average of the eight indicators is 3.91 with a qualitative interpretation of S.E. This means that the program has contributed to some extent to the graduates' current job/business operations.



Table 10: Level of satisfaction with the Facilities at KSU

Facilities	Level	of satisf	action w	Wtd. Ave.	D.E.	Rank		
	5	4	3	2	1			
1. Library	1.82	1.27	0.82	0.09	0	4	H.S.	1
2. Science Laboratories	1.02	1	0.95	0.45	0	3.43	HS	4.5
3. Computer Laboratories	1.14	0.91	1.02	0.36	0.02	3.45	H.S.	3
4. Equipment	0.45	1	1.23	0.45	0.02	3.16	MS	9
5. Classroom	0.68	1.45	0.89	0.41	0	3.43	HS	4.5
6. Clinic	1.14	1.18	0.82	0.32	0.05	3.5	H.S.	2
7. Canteen/Food Stalls	0.57	1.45	0.82	0.32	0.09	3.25	MS	8
8. Recreational Facilities	0.57	1.55	0.89	0.27	0.07	3.34	MS	6
9. Audio-Visual Room	0.8	1.45	0.82	0.09	0.16	3.32	MS	7
10. Innovation center/Entrep Lab	0.68	0.91	0.89	0.45	0.11	3.05	MS	10
Total						3.39		

Table 10 reveals the level of satisfaction of the respondents to the facilities of the University. Among the ten areas assessed, the library ranked first with a weighted average of 4.0. The clinic ranked second with a weighted average of 3.50; computer laboratories ranked third. The innovation center ranked the lowest with a 3.05 weighted average. The overall weighted average of the indicators is 3.39, which means that the respondents were moderately satisfied with Kalinga State University's facilities. This suggests that the facilities affect students' overall academic satisfaction.

This supports the claim of some studies that school facilities' adequacy impacts the performance and achievement of students (Earthman, 2002; McGowen, 2007; Murillo & Román, 2011). They explained that design features that make for a flexible and responsive environment could create a sense of comfort and invite occupants to experience school life actively. Moreover, when students feel comfortable moving within and beyond their classrooms, chances are they will engage more actively in their own and each other's learning. Further, when students, teachers, parents, and community members have access to common areas, they have more opportunities to interact, encouraging an extended sense of engagement with the school's community of learners.

CONCLUSION

Based on the results, it can be concluded that the Bachelor of Science in Entrepreneurship curriculum is relevant and useful to the present employment of graduates. Most graduates are employed related to their course and land in their jobs shortly after graduation. Very few graduates established their businesses due to a lack of capital. On the other hand, pursuing advanced studies and family issues were primary reasons for graduates' being unemployed. As to the level of satisfaction with the University's services, learning environment, and facilities, the graduates were generally highly satisfied.

RECOMMENDATIONS

Based on the findings and conclusions of this study, recommendations are as follows:

- 1. In enhancing the Bachelor of Science in Entrepreneurship curriculum, adding subjects that can provide more practical training skills on product development is encouraged.
- 2. As communication skills were vital to graduates in their work and in doing business, English subjects applicable to business students may be added to the curriculum.
- 3. As e-commerce becomes a way for businesses to survive in this new normal, computer-related subjects may be added to equip students with technical skills.
- 4. While most of the graduates were generally very satisfied with the services, learning environment, and facilities, continuous improvement of the delivery of University services and upgrading of facilities, particularly the entrepreneurship laboratory/innovation center, may be done to be at par with international and national standards in the delivery of entrepreneurship education.



- 5. The University Continuing Education Intervention Program Continuing Education Intervention Program for Bachelor of Science in Entrepreneurship Graduates in partnership with government and private entities to support graduates in establishing their business enterprises after graduation.
- 6. Further research is encouraged focusing on graduates' challenges in establishing and managing their business enterprises and factors that affect their business performance.

REFERENCES

- Abdullah, S., Mohamad, A., Bakar, H., Hashim, N., & Ooi, Y. K. (2013). Tracer study of bachelor in entrepreneurship program: The case of Universiti Utara Malaysia. *International Journal of Education and Research*, 1(9), 1-10.
- Achtenhagen, L., & Johannisson, B. (2013). The making of an intercultural learning context for entrepreneuring. International Journal of Entrepreneurial Venturing, 5(1), 48-67. doi:https://doi.org/10.1504/IJEV.2013 .051671
- Ahmad, K., Zainal, N. F. A., Idris, S., & Rahmat, M. (2012). Relationship between employability and program outcomes achievement. *Procedia-Social and Behavioral Sciences*, *59*, 254-263. doi:https://doi.org/10.1016/j.sbspro.2012.09.273
- Bruce, M., McNally, J., & Kay, M. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcome. *Journal of Business Venturing*, 28(2), 211-224. doi:https://doi.org/10.1016/j.jbusvent.2012.03.002
- Cañizares, M. J. F. (2015). Tracing university of san carlos science and mathematics education graduates: How well are we in developing teacher professionals. *International Journal of Research Studies in Education*, 4(2), 69-86. doi:https://doi.org/10.5861/ijrse.2015.985
- Cincera, J., Biberhofer, P., Binka, B., Boman, J., Mindt, L., & Rieckmann, M. (2018). Designing a sustainability-driven entrepreneurship curriculum as a social learning process: A case study from an international knowledge alliance project. *Journal of Cleaner Production*, 172, 4357-4366. doi:https://doi.org/10.1016/j.jclepro.2017.05.051
- Cuadra, L. J., Aure, M. R. K. L., & Gonzaga, G. L. (2019). The use of tracer study in improving undergraduate programs in the university. *Asia Pacific Higher Education Research Journal (APHERJ)*, 6(1), 56-89.
- Duyan, K. R. M. (2019). Personal entrepreneurial competencies of the business students at Kalinga State University: A basis for enhancement of teaching strategies and development of program structure. *Indian Journal of Science and Technology*, 12(44), 44-67. doi:https://doi.org/10.17485/ijst/2019/v12i44/146913
- Earthman, G. I. (2002). School facility conditions and student academic achievement. Retrieved from https://bit.ly/311pRXP
- El-Den, J., Adikhari, P., & Adikhari, P. (2017). Social media in the service of social entrepreneurship: Identifying factors for better services. *Journal of Advances in Humanities and Social Sciences*, 3(2), 105-114. doi: https://doi.org/10.20474/jahss-3.2.4
- European Commission. (2016). *Entrepreneurship education at school in Europe*. Retrieved from https://bit.ly/3lgktjP
- Evangelista, E. V., & Morales, M. P. E. (2017). Tracing the science education graduates. *International Journal of Research Studies in Education*, 6(2), 69-80.
- Fayolle, A. (2008). From craftto science. *Journal of European Industrial Training*, 32(7), 569-593. doi:https://doi.org/10.1108/03090590810899838
- Fayolle, A. (2018). Personal views on the future of entrepreneurship education. In *A research agenda for entrepreneurship education*. London UK: Edward Elgar Publishing.
- Gatchalian, M. L. B. (2010). An in-depth analysis of the entrepreneurship education in the philippines: An initiative towards the development of a framework for a professional teaching competency program for entrepreneurship educators. *International Journal of Research*, 5(7), 56-70.



- Giacomin, O., Janssen, F., Pruett, M., Shinnar, R. S., Llopis, F., & Toney, B. (2011). Entrepreneurial intentions, motivations and barriers: Differences among American, Asian and European students. *International Entrepreneurship and Management Journal*, 7(2), 219-238. doi:https://doi.org/10.1007/s11365-010-0155-y
- Gines, A. C. (2014). Tracer study of PNU graduates. *American International Journal of Contemporary Research*, 4(3), 81-98.
- Gonzales, A. A. (2019). Tracer study of maritime graduates of one private academic institution in the Philippines from 2012-2017. *Asia Pacific Journal of Maritime Education*, *5*, 22-33.
- Hattab, H. W. (2014). Impact of entrepreneurship education on entrepreneurial intentions of university students in Egypt. *The Journal of Entrepreneurship*, 23(1), 1-18. doi:https://doi.org/10.1177/0971355713513346
- Ismail, S., & Mohammed, D. S. (2015). Employability skills in TVET curriculum in Nigeria federal universities of technology. *Procedia-Social and Behavioral Sciences*, 204, 73-80. doi:https://doi.org/10.1016/j.sbspro.2015 .08.111
- Jack, S. L., & Anderson, A. R. (1999). Entrepreneurship education within the enterprise culture: Producing reflective practitioners. *International Journal of Entrepreneurial Behavior & Research*, *3*(5), 45-90. doi: https://doi.org/10.1108/13552559910284074
- Janet, S. J., & Akinde, . J. M. D., S. I. (2020). Modeling industrial sociology as in the discourse of entrepreneurship development. *International Journal of Humanities, Arts and Social Sciences*, 6(5), 177-185. doi:https://doi.org/10.20469/ijhss.6.20001-5
- Jingnan, W., Yunus, N., & Kamal, Y. (2018). The relationship between corporate entrepreneurship and innovation in manufacturing companies in perak. *International Journal of Business and Economic Affairs*, *3*(1), 33-39. doi:https://doi.org/10.24088/ijbea-2018-31004
- Karimi, S., Chizari, M., Biemans, H. J., & Mulder, M. (2010). Entrepreneurship education in Iranian higher education: The current state and challenges. *European Journal of Scientific Research*, 48(1), 35-50.
- Kaur, R., Awasthi, A., & Grzybowska, K. (2020). Evaluation of key skills supporting industry 4.0a review of literature and practice. Sustainable Logistics and Production in Industry 4.0, 6(3), 19-29. doi:https://doi.org/ 10.1007/978-3-030-33369-0_2
- Khiri, M. J. A. (2014). Personality dimensions towards entrepreneurship enculturation among graduates in Malaysia. *International Journal of Arts and Commerce*, *3*(6), 85-93.
- Marcos, M., Dawaton, G., Belandres, J., & Aquino, R. (2017). Graduate tracer study in the college of business, accountancy, public administration and entrepreneurship for batch 2015-2017. *KSU Research Journal*, *14*(1), 117-139.
- Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, 28(2), 211-224. doi:https://doi.org/10.1016/j.jbusvent.2012.03.002
- McGowen, R. S. (2007). The impact of school facilities on student achievement, attendance, behavior, completion rate and teacher turnover rate in selected Texas high schools. Boston, MA: Texas A&M University.
- Murillo, F. J., & Román, M. (2011). School infrastructure and resources do matter: Analysis of the incidence of school resources on the performance of Latin American students. *School Effectiveness and School Improvement*, 22(1), 29-50. doi:https://doi.org/10.1080/09243453.2010.543538
- Neck, H. M., & Greene, P. G. (2011). Entrepreneurship education: Known worlds and new frontiers. *Journal of Small Business Management*, 49(1), 55-70.
- Reusia, D. H. R., Danilo Jr, V. R., & Andres, K. P. (2020). Science education graduates of a state university from 2008-2018: A tracer study. *The Normal Lights*, 14(1), 45-60.
- Ronda, R. (2017). More filipinos take up entrepreneurship courses. Retrieved from https://bit.ly/3npe8oS
- Rusk, M., & McGowan, P. (2015). Entrepreneurial learning in context: An exploration of learning models in different domains. In *European Conference on Innovation and Entrepreneurship*, California, CA.
- Seikkula-Leino, J. (2011). The implementation of entrepreneurship education through curriculum reform in Finnish comprehensive schools. *Journal of Curriculum Studies*, 43(1), 69-85. doi:https://doi.org/10.1080/00220270903544685



Thrane, C., Blenker, P., Korsgaard, S., & Neergaard, H. (2016). The promise of entrepreneurship education: Reconceptualizing the individual opportunity nexus as a conceptual framework for entrepreneurship education. *International Small Business Journal*, *34*(7), 905-924. doi:https://doi.org/10.1177/0266242616638422

Wadee, A. A., & Padayachee, A. (2017). Higher education: catalysts for the development of an entrepreneurial ecosystem, or are we the weakest link? *Science, Technology and Society*, 22(2), 284-309. doi:https://doi.org/10.1177/0971721817702290

