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DEVELOPMENT AND VALIDATION OF AN INVENTORY TO EVALUATE THE ENTREPRENEURSHIP CURRICULUM IN COMMUNITY COLLEGES

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Abstract: *In order to evaluate the implementation of a program, one needs a valid, reliable and practical instrument. The purpose of this study is to develop and assess the validity and reliability of an inventory which is used to evaluate the implementation of entrepreneurship curriculum in community colleges around Selangor and Perak. The inventory is developed by the researcher, and it is in the form of a questionnaire with a 5-Likert scale. The conceptual framework of this study follows the CIPP Model developed by Daniel Stufflebeam. The initial instrument consists of 76 items which are divided into four main constructs – context, input, process, and product evaluation dimension. The sample of this pilot study were 50 students who are studying in semester three and above in the community colleges in Selangor and Perak. The content validity is assessed by the experts, and the construct validity is measured by Exploratory Factor Analysis. The reliability of the instrument is measured using internal consistency reliability, which is alpha coefficient reliability or Cronbach Alpha. Results of Exploratory Factor Analysis suggest that 16 items need to be removed due to their non-dimensionality as they have more or less equal loadings on several factors. The instrument developed yielded high values of internal consistency as reflected by the Cronbach alpha values after deleting another 2 items. Thus, the final draft of the instrument contains 58 items which are valid and reliable. Even though the validity and reliability of the instrument are within the acceptable range, more data need to be gathered using a bigger sample size, and further analysis using confirmatory factor analysis could be used to explore deeper into the psychometric characteristics of the items before the instrument can be finalized.*

Keywords: *Entrepreneurship Curriculum, Community Colleges, Exploratory Factor Analysis, The CIPP Model*

Introduction

The success of human capital is crucial in helping the country's economic growth, especially in the process of Malaysia achieving a developed nation status. In mobilizing efforts to achieve the nation's vision, an innovative, creative and knowledgeable human capital is an important asset that needs to be focused. The first step that needs to be started is to develop a world-class humanity model through the education system. In education, without improving the existing educational curriculum, it is unlikely that we can compete in the current globalization competition. The government will ensure that no one is left out of the education system and every student who go through this system will not only meet the needs of the domestic market but also the international market. Based on this importance, the government will continue to work with various stakeholders for the development of human capital which not only has excellence in academia, but has high quality values. Entrepreneurship skills are the skills that one needs to have to work effectively while doing the job according to the specific skills they possess (Mohd Salleh et al, 2010). Having good entrepreneurial skills, the teaching and learning process is assumed to be effectively implemented especially in achieving the goals and objectives of education. Entrepreneurship has received tremendous attention around the world. Many factors contribute to the growing interest in entrepreneurship. In emerging economies, entrepreneurship activities and the development of new companies have rebounded the weak economy (Nor Hasnida Che Md Ghazali, 2015). In improving and developing the economy, entrepreneurship has an important role in creating job opportunities.

Entrepreneurship skills are among the most important soft skills either from the level of primary or tertiary education (Norasmah et al, 2003). The field of entrepreneurship is considered capable of producing human resources that can safeguard the country's economic, social and political stability. It is an element of human capital development (Sarimah et al., 2010). Entrepreneurship curriculum should be implemented at elementary school level. Exposure to this entrepreneurial culture is to be in concordance with the aspirations and objectives of the government in creating a competitive and advanced entrepreneurial society. Entrepreneurship has also become a very important core in economic and social development around the world (Landstrom, 2005). Entrepreneurship activities encourage innovation, increase employment opportunities, enhance the global competitiveness of a company, as well as drive and improve the economy (Bygrave, 2004; Bennett, 2006). Entrepreneurship skills can be formulated as an interest and ability to explore opportunities and develop awareness on the risk of creativity and innovation in business-related activities. Learning in entrepreneurship curriculum is a process of nurturing and producing students with a business culture (Hussaini et al., 2008).

Background and Rationale

In the context of community colleges, entrepreneurial skills are applied in the entrepreneurship curriculum. The curriculum is the scope and content of a subject at school or other, a list of all subjects (courses of study) in schools and other educational institutions (Dictionaries, 2005). Entrepreneurship curriculum is very closely related to higher education institutions in Malaysia. Entrepreneurship is now seen as one way to reduce the dependence of Malaysians on the government to provide employment opportunities. Therefore entrepreneurship curriculum is very important in giving birth to future entrepreneurs. Entrepreneurship curriculum is also an important phenomenon that contributes to economic and social as one of the main subjects. In the Community College Entrepreneurship Strengthening Plan, focus has been given in the effort of creating community college students and local communities with entrepreneurial characteristics, competencies, competitiveness and high self-esteem in line with the IPT Entrepreneurship Development Policy. The main goal of the plan is to provide guidelines in

implementing entrepreneurship programs at Community College in order to create more human capital with entrepreneurial thoughts, attributes and values. Strategic Blueprint of Community College Entrepreneurship, based on 6 core IPT Entrepreneurship Development Policies namely: i) Establishing an entrepreneurial center in the Community College Education Department and at Community College; ii) To provide education and entrepreneurship programs that are well organized and holistic; iii) Strengthening entrepreneurial development and consolidation programs; iv) Creating an effective measurement mechanism; v) Providing a conducive environment and ecosystem for entrepreneurship development; and vi) Strengthen the competence of entrepreneurship coordinators (Yusrizal Yusof, 2012).

In community colleges, the course offered is a skill certificate that needs to be taken within 2 years. Community colleges strongly encourage their students to work on their own; or in other words becoming entrepreneurs after graduation. The introduction of entrepreneurship curriculum and the establishment of the E-Tech Center at each community college can help to expose students to entrepreneurial activities either theoretically or practically. But to what extent is the entrepreneurial curriculum and plan planned by the Community College Education Department (JPKK) in general and community colleges, especially in helping to produce students who are entrepreneurs and willing to venture into entrepreneurship? Additionally, how effective is the implementation of entrepreneurship curriculum especially from the context of input, process, and product? Therefore, curriculum evaluation is one of the ongoing activities in curriculum implementation to obtain information on the success of the implementation of a curriculum or academic program (Marsh & Willis, 2007).

Problem Statement

There is no formal assessment been made on the curriculum implementation since the community college entrepreneurship curriculum was introduced in 2012. The purpose of entrepreneurship curriculum is to train students to become an entrepreneur and to train students with entrepreneurial skills upon graduation. This is an unofficial view of interviews with various students, alumni, lecturers and curriculum makers in entrepreneurship. In fact, the employment trend of the employment sector in 2017 (131569 graduates 2017) showed that 7.82% of graduates chose entrepreneurship while the majority chose to work in the private sector (48.01%), government / statutory bodies (19.09%), multinational private 18.13% , GLC or NGO companies and others 6.95%). Meanwhile, the employment trend of the community college graduates for the year 2017 shows that only 6.60% of graduates choose entrepreneurship as a career while 89.80% opt for salary and other jobs is 3.60%. (Statistical Report on Traceability Survey of the Ministry of Higher Education, 2017). Although entrepreneurship curriculum is carried out at community colleges, graduates' statistical tracking shows that entrepreneurship is not a career choice and the practice of selecting jobs with fixed income is still a priority among graduates of community college graduates.

Previous technical and vocational students are reported to have a weak knowledge in entrepreneurship, especially the elements of business and product development (Suhaila et al., 2013). There is also a failure in terms of technological possession in which it is expected to transform learning and teaching in the entrepreneurial curriculum but not so (Chang and Guetl 2007). According to Straub (2006), this failure is due to lack of understanding in the learning process. Career in entrepreneurship is one of the best jobs that can be undertaken by graduates to overcome unemployment (Norasmah & Halimah, 2007). This is supported by Norasmah & Salmah (2011) which states that graduates need to think as a work creator rather than looking for a job. The government has created various entrepreneurship programs for students to

produce graduates of higher education who are entrepreneurs. However, the career of entrepreneurs has not yet become a career option among graduates. Various programs and activities have been implemented by the government to attract more graduates into entrepreneurs, including introducing entrepreneurship curriculum, but the efforts are still failing when the number of graduates' entrepreneurship is still low (Norasmah & Faridah, 2010).

There are a number of recent studies that examine matters related to entrepreneurship. Previous studies conducted by Hamidi, Wennberg and Berglund (2008) have studied the influence of entrepreneurial courses on individual intentions to become entrepreneurs. Other studies conducted by Mohd Khata and Ahmad Firdaus (2012) on entrepreneurial tendencies among technical students which only include students at MARA Johor Bahru Skills Institute and MARA Jasin Skills Institute although there are other Public Skills Training Institutions such as IKBN, ILP, Community College and Polytechnic. So far, there has been a lack of research on the assessment of the implementation of the entrepreneurship curriculum itself in producing students moving toward entrepreneurs. This curriculum for entrepreneurship education requires a holistic assessment as it is the primary support for students to study formal and structured entrepreneurship. Thus, a comprehensive assessment is indispensable at this time. Mitchem et al (2003) also states that program evaluations are important to avoid the failure of such programs. Therefore, this study aims to evaluate the curriculum of entrepreneurship education using the CIPP Evaluation Model in four evaluation dimensions i.e. context, input, process and product.

Literature Review

There are many definitions of the curriculum. Curriculum is a subject comprising courses in a school or college. The curriculum is described as a designated course of study, such as at school or college (Varley, 1992). The original curriculum term comes from Latin and refers to the act, course or foundation to follow (Akker, 2003). In more specific terms, the curriculum is defined as a set of structured formal education, written documents, planned activities, learning, ongoing activities in the classroom, experiences, learning plans that encompass some goals, objectives, strategies and teaching approaches to achieve the desired results, and the design of this curriculum has its beginning, ending and process (Eisner, 2002). Eisner (2002) summarizes the definition of the curriculum as a deliberate course designed to engage students in a set of planned activities or events to achieve their educational goals for them. The curriculum is considered as a continuous activity rather than the actual fact that occurs in the classroom (Labuta & Smith, 1997). According to Labuta and Smith (1997), the curriculum is defined in three situations i.e. what the student must do in the learning process, what the student must know as a result of learning outcomes and specific teaching methods. The concept of curriculum is the experience of the students, equipped with the content or planned topics. The process of selecting content, accompanied by a learning experience, is one of the key decisions in the development of a curriculum. The concept of the curriculum is also said to be not a technical approach but rather a philosophical approach, personal and attractive approaches including aesthetic theories and ideas (Eisner, 2006), moral and ethics (Reid, 2012), visionary and in the form of spirituality.

Entrepreneurship Curriculum

The strategy to inculcate and cultivate entrepreneurship among students is to introduce entrepreneurship curriculum in educational institutions. Entrepreneurship education and training is very important for economic development, especially in improving the quality and quantity of entrepreneurs in the future (Faioite et al., 2003). Interest in entrepreneurship has led

to increased demand for entrepreneurship education and training in recent years (Galloway and Brown, 2000). This is based on the growing number and types of entrepreneurship programs offered at the universities. Recognizing the importance of entrepreneurship education, many universities around the world have offered entrepreneurship education curriculum (Norasmah & Faridah, 2010). Entrepreneurship is the driver of economic growth and support for efforts to boost creativity, innovation and competitiveness of a country (Smith, 2010). One way to develop entrepreneurial skills is through training and entrepreneurial education. Entrepreneurship curriculum is a method and approach used to teach students about business and how to operate a profitable business (Tung, 2011).

Curriculum Implementation Model

Galen Saylor, Alaxander and Lewis (1981) adopt an administrative approach in developing and implementing the curriculum. This model forms a curriculum planning process. In understanding this model, an analysis of curriculum concepts and curriculum design concepts needs to be done. Curriculum is perceived as 'a plan to provide a set of learning opportunities for people who are learning' whereby a curriculum planning is supposed to provide students with learning opportunities.

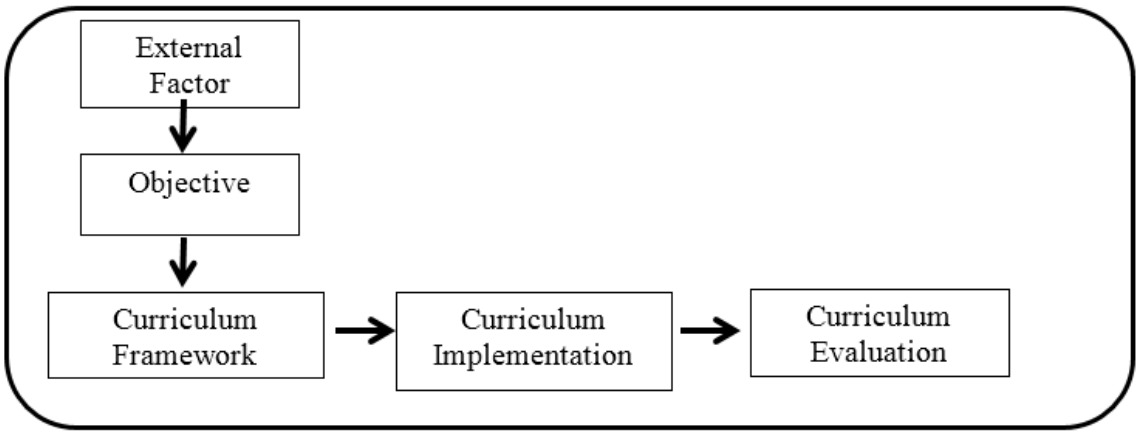

Figure 1: Curriculum Implementation Model by Saylor (1981)

As shown in Figure 1, the choice of goals and objectives of the curriculum is influenced by external factors such as legal requirements, research data, professional associations, community knowledge and ministry guidelines. Curriculum designers then choose a combination of curriculum design, implementation strategy, and curriculum evaluation. This model also emphasized the curriculum evaluation process in the implementation of the curriculum. Evaluation is used to maximize goal achievement, get feedback from the curriculum that has come into force and re-plan the assessed curriculum elements. The implication of this model on curriculum evaluation is that it emphasizes on the curriculum evaluation. Saylor agrees that curriculum makers and teachers should be involved and evaluate the curriculum. They should choose the most appropriate assessment technique to use. The curriculum evaluation is divided into two based on its assessment design, namely: i) evaluate the overall curriculum including objectives, subobjective, effectiveness of the teaching and learning process implementation and student achievement within a particular segment in a curriculum; and ii) assess the program itself. The evaluation process allows the curriculum creators to determine whether the institutional goals and objectives of the curriculum can be met or not. The curriculum design involves decisions made by curriculum makers who are responsible for planning at the center level or educational institution. After collecting and analyzing identified important and

objective data, the curriculum creator creates or chooses a curriculum design appropriate to the learning opportunities given to students. Among the important things in designing a curriculum is the skills analysis needed for knowledge and skills in subject areas, and problem-solving (collaborating with students) related to the field of study (Lunenburg, 2011). At the end of the plan, the curriculum design needs to fulfill the overall learning opportunities for a particular student population.

Constructs Involved in This Study

Competence of Lecturers

Lecturers are the curriculum implementers and they are the core in determining the standards, quality and effectiveness of the education system. Education is also a process of dissemination of knowledge and skills derived from one generation to another (Othman, 2007). The emphasis on sustainable professional development on the basis of competence will shape the development of a more attractive educational career as well as producing quality instructors to meet the needs of the 21st century (Mahmud, 2011). The level of competence of instructors should be enhanced to be more systematic to support the ministry's efforts to uphold the education of the nation. The lack of professional lecturer issues in implementing the role of educators is a form of a threat that can negatively affect the education system. There is a weakness in the practice of competence development from various aspects which causes the teaching being implemented to be less effective. Failure to manage the professional development of lecturers will effectively impact their competence as instructors and educational institutions (Basri & Aramugam, 2011).

Learning and Teaching Materials

Each lecturer is a facilitator in which they should know and understand how such methods or techniques can assist in the teaching and learning process and design student-oriented processes (Zainal Azir, 2017). The use of textbooks, whiteboards and markers alone are not sufficient as teaching methods. Lecturers or teachers need to use technology to increase students' interest in a subject and that is also interactive learning on students (Noor Azlan & Nurdalina, 2010). Therefore, effective methods and techniques are needed to ensure the curriculum is effectively implemented.

Learning and Teaching Method

The teaching style has a direct impact on classroom learning. Teachers will determine how to teach in the classroom, how to manage students, role in the classroom, and ultimately serve the curriculum of a given subject. In essence, teaching styles play a major role in celebrating different levels of students through different instructions and procedures to ensure each student achieves the set outcomes of the learning. Different instruction and teaching approaches can not be performed unless teachers use diverse learning methods to tailor instructions to various learning and teaching styles (Shawer, 2017). This means that teachers or lecturers need more than one approach to achieve one learning outcome, for example by using visual, auditory or kinesthetic approaches (Paolini, 2015). A study conducted by Abduh (2012) found that entrepreneurship curriculum at Bengkulu University was getting more attention because more students wanted to become entrepreneurs and wanted to take entrepreneurship education as their field of study. In the entrepreneurial curriculum, knowledge such as business plans, financial planning and financial reporting are very important for students. The findings of Abduh's study (2012) found that students were more satisfied with innovative teaching methods such as class discussions, group discussions and group presentations as opposed to traditional

teaching methods. The majority of students are having difficulty understanding the subject of entrepreneurship because of the different teaching materials and teaching methods among faculty different faculty. The results show how important the teaching and learning materials are to help students in understanding the subject of entrepreneurship.

Learning through problem solving or better known as problem-based learning is an effective method of teaching given to students in entrepreneurial education (Tan & Ng, 2006). PBL provides learning environments where students can learn to make decisions, take risks, responsibilities, seek experience, mentoring and reflection (Wee, 2004). PBL is used to enhance student creativity in solving problems involving entrepreneurial learning (Klofsten, 2000). In PBL, students are encouraged to actively study with supplied learning materials, lecturers or teachers as facilitators, and students will interact with fellow students and teachers. The combination of new technologies and traditional resources can provide students with a wealth of learning experiences.

The Readiness of Students

Government action to cultivate entrepreneurship among students is to be able to make students engaged in all fields and modern economic activities as to enable them to work together to develop the nation (Norashidah et al., 2009). Students with knowledge related to training, guidance, product marketing and capital financing can help themselves start their business after graduation. Such knowledge can affect their success in entrepreneurship (Norasmah and Muharam, 2009). The student's decision to traverse entrepreneurship has to do with entrepreneurial skills. This is in line with the study carried out by Norisham (2008) where students of the Mara Skills Institute of Johor Bahru in Johor have the skills to build business plans, assess business opportunities, adaptability and work in groups encouraging them to venture into entrepreneurship. While the study conducted by Norudin et al. (2011) shows that most (74.4 percent) students have an interest in becoming entrepreneurs after graduation.

Conceptual Framework

The conceptual framework of this study follows the CIPP Model developed by Daniel Stufflebeam in 1969. The CIPP Model consists of four dimensions of evaluation which are context, input, process and product dimensions which follows four types of decision – planning, structuring, implementing and recycling (Stufflebeam, 2003) as shown in Figure 2. According to Stufflebeam, 'context evaluation' gives an opportunity for the decision makers to plan the programme objectives either to confirm the present objectives, to modify the existing objectives or to develop new objectives. 'Input evaluation' allows decision makers to make decisions on the structure of the programme related to strategies, personnel, resources, procedures or a prospective cost assessment in achieving the programme objectives that have been derived from planning decisions and 'process evaluation' means that decision-makers have to decide on everything related to the implementation of already selected designs, strategies or action plan. Lastly, product evaluation serves as the programme recycling decisions to determine and examine the specific outcomes of the programme, to conduct a retrospective cost assessment or cost effectiveness assessments. In this study, context evaluation consists of four constructs – role and objective of the curriculum and the delivery and assessment structure, input evaluation has three constructs – content, teaching and learning resources and kemudahan prasarana, process evaluation has three constructs – teaching and learning methods, assessment methods and the use of teaching and learning materials and, lastly is the product evaluation which has three constructs - students' mastery knowledge, their motivation towards becoming entrepreneurs and also their readiness to become an entrepreneur.

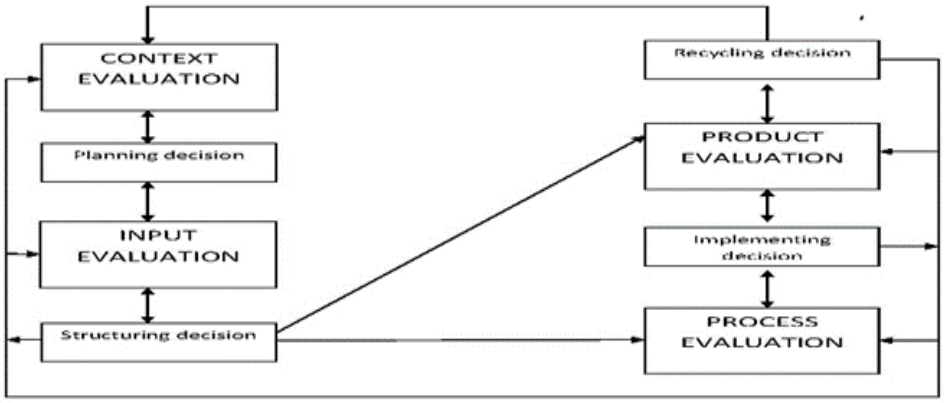

Figure 2: Dynamic Action of the CIPP Model

Research Objectives

The purpose of this pilot study is to develop and assess the validity and reliability of an inventory for evaluating the implementation of entrepreneurship curriculum in community colleges in Selangor and Perak. Specifically, this study sought to:

i) develop an inventory for evaluating the implementation of entrepreneurship curriculum;
ii) establish the validity of the inventory; and
iii) establish the reliability of the inventory.

Methodology

This survey was piloted to 50 students studying in several community colleges in Selangor and Perak. It is chosen from Selangor and Perak due to limitation in terms of practicality factor. They were selected through purposive sampling due to practicality factors. The selected students are those who are in semester three and above as they are studying entrepreneurship curriculum, and they also have attended practical on entrepreneurship. Initially, the instrument was tried out to few students and lecturers to check for the appropriateness of the language and content. It is found that all the items are appropriate, and only some minor changes to the language are made.

Development of the Instrument

The instrument is developed based on the development of constructs referring to the past literature. After the constructs have been defined, items are developed for each construct. Before that, the researcher has to look at the characteristics defined by Stufflebeam in his model for each evaluation dimension. In addition, instruments from past researchers are also used. Those instruments are developed following the research conducted by Tseng *et al* (2010) entitled 'Using the context, input, process and product model to assess an engineering curriculum, by Rooholamini (2017) entitled 'Program evaluation of an Integrated Basic Science Medical Curriculum in Shiraz Medical School, Using CIPP Evaluation Model', by Yogesh Patil (2015) entitled 'CIPP Model For School Evaluation' and by Nor Hasnida (2015) entitled 'Evaluation of the School-based Assessment Implementation in Malaysia'. Although there is no instrument developed related to the entrepreneurship curriculum in the community colleges context, but still those resources are a good ones to be referenced to.

Results and Discussions

The validity and reliability of the instrument will be discussed.

Validity of the Instrument

Firstly, the validity of the instrument is established. The adequacy of the data is checked using KMO Bartlett test. A statistic value of 0.942 is obtained which indicates that 94.2 percent of the variables properties are explained by the data thus, factor analysis would be meaningful. Then, exploratory factor analysis (EFA) is performed according to section (except for demography section) to identify the number of constructs and to group the items for each construct. EFA has yielded four subconstructs for the first construct, three subconstructs for the second constructs, three subconstructs for the third construct and three subconstructs for the fourth construct (Table 1). Sixteen items are removed as they are grouped into two constructs with more or less equal loadings. Factor loadings for the remaining items are greater than 0.6.

Table 1: Results of EFA

Pattern Matrix[a]				
	Component			
Item	1	2	3	4
Context Evaluation Dimension				
B1) Entrepreunership curriculum is needed in the college	0.867			
B2) Entrepreunership curriculum is important as an added value	0.862			
B3) Entrepreunership curriculum helps students in getting jobs	0.767			
B4) Entrepreunership is one of my career choice	0.779			
The objective of the entrepreunership curriculum is … B5) Suitable and practical B6) Clearly defined B7) In accordance with the certificate of skill involved B8) Achieved at the end of the course B9) Latest B10) Meet the needs of students B11) Relevant to the needs of students	 0.222	 0.792 0.886 0.832 0.656 0.787	 0.306	
B12) Range of TnL time suits the teaching objective		0.669		
B13) Methods of teaching and learning are stated			0.722	
B14) There is an additional list of references			0.883	
B15) There is a self-directed learning method			0.782	
B16) Full silibus is given to students			0.804	
B17) Theoretical and practical learning is expressed in the syllabus			0.781	
B18) Indicated the assessment method and assessment				0.555
B19) The division of scores for each rating is relevant	0.230			
B20) The number of assessments in the curriculum is appropriate				0.459
B21) Stated percentage of final assessment and continuous assessment	0.350			

Input Evaluation Dimension				
The contents of the entrepreneurship curriculum are: C1) In accordance with the goals of the student C2) Meet my needs C3) Meet my expectations C4) Is the latest C5) Suitable delivered within the prescribed time frame	 0.881 0.699 0.697 0.735 0.798			
Entrepreneurship curriculum learning: C6) Equipped with audio visual equipment C7) Have sufficient reference material available C8) Equipped with relevant information C9) Equipped with materials that facilitate students' understanding C10) Equipped with interesting teaching materials C11) Providing internet access online		 0.740 0.697 0.702 0.240 0.885 0.402	 0.330 0.500	
The college prepares … C12) A motivational learning atmosphere			 0.832	
C13) Business space for entrepreneurship			0.756	
C14) Equipment for entrepreneurial activities			0.787	
C15) Suitable areas for the implementation of entrepreneurial activities			0.699	
Process Evaluation Dimension				
During class, D1) I am actively involved as a result of the lecturer's encouragement D2) Lecturers clearly state the objective of learning D3) Discuss problem solving activities D4) The lecturer's teaching method is easy to understand D5) Lecturers handle class in a fun way D6) Group learning is conducted D7) Students are encouraged to conduct a brief study on entrepreneurship D8) My entrepreneurial skills are strengthened by lecturers	 0.777 0.350 0.881 0.698 0.257 0.735 0.798 0.777	 0.555 0.345		
The lecturer … D9) Linking entrepreneurial theories to the real situation D10) Responding to the views given by the students D11) Use game elements in the classroom D12) Organize entrepreneurial competition to give real exposure D13) Provide exposure on the characteristics of successful entrepreneurs D14) Provide online entrepreneurship exposure	 0.350 0.881 0.398 0.657 0.335 0.298			
The assessment … D15) In the form of real entrepreneurial experience D16) Compatible with student knowledge D17) Form in reinforcement in the classroom		 0.885 0.202 0.959	 0.333	

D18) Always encourage students to become entrepreneurs		0.882		
D19) Computer is used in TnL		0.332	0.381	
D20) Lecturers use power point slides as teaching materials		0.222	0.298	
D21) Lecturers use video and pictures in teaching			0.857	
D22) Finance to carry out entrepreneurial curriculum activities by the college			0.735	
D23) Time given for students to carry out sales activities on a given day			0.798	
Product Evaluation Dimension				
The curriculum … E1) Successfully improved my knowledge E2) Has enhanced my entrepreneurial appraisal achievement E3) The knowledge is very useful to me E4) Makes me know the features to become an entrepreneur E5) Makes me know how to make a business plan right E6) Makes me know to look for opportunities for entrepreneurship E7) Allows me to apply entrepreneurial knowledge in life	0.781 0.698 0.740 0.877 0.702 0.740 0.677			
The curriculum .. E8) Makes me very satisfied with the implementation E9) Helps improve my professional level E10) Makes me sure to venture into entrepreneurship E11) Increases motivation to become an entrepreneur E12) Makes me eager to become an entrepreneur		0.230 0.290 0.890 0.781 0.892		
After studying the curriculum, E13) I tend to be an entrepreneur			0.740	
E14) The skills learned attracted a career as an entrepreneur			0.677	
E15) The characteristics of an entrepreneur have been applied to me			0.702	
E16) I am interested in becoming an entrepreneur after graduation			0.740	
E17) I aspire to become an entrepreneur			0.685	

Reliability of the Instrument

Analysis of validity using EFA by construct for all sections in the instrument have yielded quite a high reliability measure. After all the 16 items have been removed, the remaining 60 items are checked for reliability. Then, another two items are removed, and it makes the total item to be used for real study are 58 items altogether. The reliability values are greater than 0.677 for all sub-constructs. Details of reliability index by subconstructs are shown in Table 2.

Table 2: Values of Overall Cronbach's Alpha for Each Construct

Constructs	Numbers of Item Deleted	Numbers of Item Remained	Overall Cronbach's Alpha Value
Context Dimension			

i) Role of entrepreneurship curriculum	0	4	0.795
ii) The objective of entrepreneurship curriculum	2	6	0.811
iii) Delivery structure	0	5	0.860
iv) Assessment structure	2	2	0.384
Input Dimension			
i) Content	0	5	0.886
ii) TnL resources	2	4	0.755
iii) Infrastructure facilities	0	4	0.771
Process Dimension			
i) Teaching and learning methods	5	9	0.875
ii) Assessment method	1	3	0.790
iii) The use of Teaching and Learning materials	2	3	0.657
Product Dimension			
i) Students' mastery knowledge	0	7	0.953
ii) Students' motivation towards becoming entrepreneur	2	3	0.832
iii) Students' readiness to become entrepreneur	0	5	0.910
TOTAL ITEMS	16	60	

Conclusions and Recommendations

Analysis of validity by EFA and reliability by the Cronbach alpha value showed that the instrument is sound. It is valid and reliable to be used if the researcher were to measure the implementation of the entrepreneurship curriculum in the community colleges. However, the results of the analyses suggested that 18 items should be removed. Thus, out of 76 items, 58 items are retained in the final draft of the instrument for real study. Furthermore, the instrument seems to suit the Malaysian education system particularly in a community colleges context. So, the instrument from this study could be used as a reference for a future research or any policy makers. However, the items removed might be useful, so a more detailed analysis with a larger sample might be conducted using Item Response Theory Model. Normally, researchers use IRT if they need to explore deeper into the psychometric characteristics of each item, and thus provide them with a higher sense of confidence to keep only important items in the instrument.

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