

Teaching Strategies to Develop Technical Entrepreneurs

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Effective teaching strategies can enhance knowledge and nurture the entrepreneurial mind of Community College students. Specifically, educational institutions and lecturers play an important role in building productive, creative and innovative entrepreneurs in various fields, able to face future challenges. Although various entrepreneurship and training programs have been implemented, statistics and past studies do not show tremendous entrepreneurship, especially among technical and vocational education (TVET) students. This paper investigates the implications of teaching strategies, in entrepreneurial pedagogy on developing technical entrepreneurship. A method from past journals has been used to gain the research used in this paper. It was found that student-centred learning, through active learning such as problem-solving, collaborative and discussion, was an effective strategy that could develop technical entrepreneurship. Therefore, the lecturer needs both a strong pedagogical content knowledge, especially of entrepreneurship, and diverse teaching methods, to improve entrepreneurial intentions and skills among Community College students.

Key words: *Teaching strategies, entrepreneurial education, technical entrepreneur.*

Introduction

We are moving forward towards the Industrial Revolution 4.0. In line with today's technological sophistication, it is believed that entrepreneurship has the potential to accelerate the country's economic growth and provide good career prospects (Adznir 2017; Baharu, Mohammed Zain & Nita Edama 2011; Schaper & Volery 2004; Venkatachalam & Arif. 2005). Trade globalization, technological change, the emergence of new technologies and the revolution of information and communications technology (ICT), represents the age of the Internet of Things (IoT) (Ali, 2017; Schwab 2017; Dadi 2014). It also helps to grow business,

especially online. These conditions are vital in economic growth, to increase the per capita rate of production and national income.

Realizing the importance of entrepreneurship today, various educational transformations have been implemented including technical and vocational education (TVET). Although 17 years has passed since entrepreneurial education was implemented in higher education institutions (Liguori et al. 2018; Aldulaimi, 2018), it is evident that entrepreneurship education is still pursued at various levels. It aims to generate entrepreneurial graduates capable of being job creators in the future. Entrepreneurship education can both encourage ventures and enhance students' knowledge of entrepreneurial processes (Ekpoh & Edet 2011; Norasmah & Salmah 2011). Additionally, entrepreneurial education raises awareness of how to start a business, which helps in understanding operations through business strategy, marketing and management skills including negotiation and purchasing process (Grecu & Denes 2017; Keogh & Galloway 2004; Roffe 2010). Therefore, in developing technical entrepreneurs, it is best to empower TVET by integrating entrepreneurship, through education in the community colleges; an added value that benefits the country. Thus, education through TVET should not be a "dead end" for any career (Majumdar 2013; Ale, 2018). But are we capable of opening the minds of technical graduate students, especially from community colleges, to venture into entrepreneurship? The question arises when entrepreneurship is at odds with their career.

Issues in Developing Technical Entrepreneurs

The Global Entrepreneurship Monitor (GEM) 2017/2018 report showed that Malaysia still lags in entrepreneurial intentions. It is only 17.6% compared to countries with high and moderate entrepreneurial intention scores such as Colombia (52.5 %), Egypt (55.5%), Vietnam (25%) and Thailand (37.4%) (Global Entrepreneurship Research Association (GERA) 2018). This situation indicates that there is still no awareness of the opportunities in entrepreneurship, while also reducing unemployment rates among graduates. Based on key statistics of the Malaysian labour force in June 2017, released by the Department of Statistics Malaysia (JPM), unemployment clearly remained unchanged from the previous year's rate of 507,700 people (3.4%) (JPM 2017b). The situation is alarming as Malaysia's rate of population growth has also increased year by year. According to the current population estimate released by the JPM, the 2017 population estimate is 32 million, with a population growth rate of 1.3 per cent compared to 2016 (JPM 2017b). This growth has made it more difficult for graduates to find jobs, and they will have to work harder to get jobs later.

Recognizing this situation, the government, particularly the Ministry of Education Malaysia (MoE), including the Department of Polytechnic and Community College (JPPKK), has doubled its efforts. Various entrepreneurial programs enhance skills and create successful entrepreneurs, while improving the quality of education by incorporating entrepreneurship

elements in formal education curriculums, as well as in co-curricular activities (Norasmah et al. 2012; Unit Perancang Ekonomi 2015b). The Graduate Tracer Study for Community Colleges 2017 has shown an increase in students' engagement in their own company. In 2016 there were 560 students (6.5%) while in 2017, 676 students (6.6%) are involved. Although there is a growth, the increment is only at 0.1 percent (KPT 2017).

This has to do with a lack of readiness and entrepreneurship knowledge that can be explored. Norfadzliah & Nazelira (2017) studied students from the Electrical Installation program at Bukit Beruang Community College. They showed that Electrical Installation students are less ready to venture into electrical entrepreneurship after graduation. The data analysis showed that the level of knowledge of students in business, which is included in the electrical area, is moderately high at 2.9 per cent, and interest in entrepreneurship is also moderately high at 3.39 per cent. This situation is supported by the study of Ahmad Rizal Madar & Rawiyah (2014) regarding the Critical Success Factors (CSF) for entrepreneurship programs in community colleges. It found similar problems in which students have entrepreneurial potential but lacked entrepreneurial knowledge, confidence, creativity and innovation in facing global challenges.

This scenario should be taken seriously. The entrepreneurial element played an important role in the development of technical entrepreneurs, and should be incorporated into the teaching and learning process (Mohd Shahrir 2015; Zairon et al. 2017). However, exposure to entrepreneurial knowledge through teaching and learning (T&L) methods is not fully addressed. The essential elements of entrepreneurship are not instilled into vocational students in particular, including identifying business opportunities, starting a business skills, creating new products, managing business, marketing, promotion and advertising (Mohd Shahrir 2015; Ali, 2013; Yusrizal Yusof 2012). The study of Khow, Suhaida & Abd Patah Malik (2008) showed vocational subject lecturers are lacking in the ability to teach financial and accounting competencies, due to their lack of exposure to financial competency and accounting; additionally they have technical backgrounds instead. The instructors who teach outside their specialisation will encounter some problems especially on knowledge and teaching content (Roslan 2014; Alice, 2017). These issues need to be taken seriously, lest it impact the government's efforts to produce entrepreneurial graduates and make Malaysia an entrepreneurial nation in the near future.

Merhayati et al. (2017) in her study of entrepreneurial intentions for students at Kuala Langat Community College proved that appropriate pedagogical knowledge and concepts are needed, to enhance entrepreneurship. There is clearly a disparity in the development of technical entrepreneurs, in terms of the capabilities of the educators delivering knowledge and exposing students to entrepreneurship. The instructors need to explore the entrepreneurial world before they can train students. The impact of this lack of knowledge and exposure will

lead to a lack of knowledge and skills in developing business, especially in business management. These problems also impede vocational stream students when they are making informed career choices (Boon & Ilias 2011). Therefore, the importance of knowledge, skills and capabilities in shaping the identity of technical entrepreneurs should be emphasized: they are the pioneers of the country in driving national and global economic growth. (Norasmah Othman, Mohd Hasril Amiruddin & Haliza Hussein 2011).

Turner & Gianiodis (2017) explain that research on entrepreneurship teaching practices in community colleges can contribute significantly to entrepreneurial development, and that gaps remain in designing and identifying appropriate methods for delivering entrepreneurship knowledge (Morris & Liguori 2016). Based on these issues, it is critical to clarify the appropriate T&L strategy implemented for the development of technical entrepreneurs among community college graduates.

Methodology

Document analysis methods and systematic reviews are used in this study to answer the research objectives. According to Tranfield et al.(2003), the systematic review method involved a number of techniques which can reduce bias and error in the search for information, and thus improve the quality of the review process. In general, systematic reviews can summarise the research objectives, based on an information search of the study topic (Lange 2014). Document analysis, on the other hand, provides information relevant to the research issues and questions, and the researcher needs to carefully read and interpret data, so that the findings and conclusions can answer the research objectives (Kamarul Azmi 2012; Bowen 2009). There are various reference and reading materials, including reports from government agencies, journals, books and electronic references through websites, to obtain research information. For journal and article databases, information is available through Google Scholar, Emerald, ScienceDirect and ProQuest. Next, four keywords, namely entrepreneurship education, entrepreneurship ideas, exploration of entrepreneurial opportunities, and entrepreneurship, are used when finding information and research data. Table 1 shows a list of reference items for systematic reviews used to obtain research information.

Table 1: List of reference items for systematic review purposes

No.	List of Items	Number of References (journals, articles, books, web pages, theses, reports, etc.)
1.	Entrepreneurship education	20
2.	Teaching and Learning Strategies	20
3.	Problem-based Learning (PBL)	10
4.	Entrepreneurship	15
5.	Entrepreneurship training	15
TOTAL		80

Discussion

Entrepreneurship Teaching and Learning Strategies

In education, the concept of strategy refers to the instructors' wisdom in selecting the apt approach and efficiency, in designing a systematic and detailed lesson plan based on the lesson objectives (Mok 2009; Norfazila 2013). Choosing the right strategy can help students respond positively to their learning process while achieving the learning objectives (Mohd Hafeez Al-Amin 2013; Zaidatol Akmaliah & Arivayagan 2017). Through entrepreneurship education, there are no specific rules or teaching strategies (Solomon *et al.*, 2002), and sometimes traditional pedagogy is unsuitable for delivering entrepreneurial knowledge (Rideout & Gray 2013). The instructor is free to choose and determine the best strategy for his or her teaching and learning practices (Ruskovaara & Pihkala 2013). However, strategies applied in entrepreneurship education should evolve (Liguori *et al.* 2018) in line with the technological sophistication of the Industrial Revolution 4.0 era.

In their study of the implications of teaching strategies, Zaidatol Akmaliah & Arivayagan (2017) showed that student-centred learning is implemented in entrepreneurship-based learning. Students believed that making business plans, delivering business projects, discussing and carrying out real business can enhance their entrepreneurial awareness and skills. This is also supported by Norasmah Othman *et al.* (2012) in which the most effective way of fostering entrepreneurial culture and intention among students is through experiential learning. In addition, students can gain experience by running small businesses on campus. This approach is in line with the main focus of entrepreneurial education - starting a business and growing and managing a business (Roffe 2010). Table 2 differentiates innovative teaching strategies, namely student-centred learning, and teacher-centred learning.

Table 2: Innovative teaching strategies

Student-centred Learning	Teacher-centred Learning
<ul style="list-style-type: none"> • Entrepreneurs case analysis • Business plan • Presentation of business projects • Discussion • Visit to the business location • Interviews with entrepreneurs • Doing real business • Entrepreneurial self-analysis 	<ul style="list-style-type: none"> • Lecture • Reading material • Tutorial • Entrepreneurs as guest speaker

Source: Zaidatol Akmaliah & Arivayagan (2017)

Silva et al. (2018) believed that PBL is one of the most effective student-centred teaching strategies. Their findings showed that real problems presented by entrepreneurs enhance students' motivation for teamwork, give practical experience with professional activities, integrate theory with practice, enhance students' ability to understand real-life situations, and create innovative solutions to change situations. This makes learning in and out of the classroom more meaningful. It is in line with the theory of constructivism by Vygotsky (1978) in which he emphasized student-centred active learning such as group learning, brainstorming, collaboration and so on (Suppiah et al. 2008). Through this constructivism, the teachers will not fully convey the knowledge in the T&L process (Hapsari 2011). Students will build their own knowledge or learning concepts, based on existing knowledge and experience. Students will thereby accommodate the information or knowledge gained, within existing prior knowledge, in order to build new knowledge (Syahida Nadia 2015).

In addition, proper training, coaching and mentoring implemented in the T&L process could enhance the community college students' knowledge and intentions of entrepreneurship (Merhayati *et al.* 2017). Other methods that can be applied in entrepreneurship teaching and learning process include thinking skills, verbal presentation, diagnostic skills, group work, case studies, problem solving, discussion, role-playing and individual instruction methods (Mohd Hafeez Al-Amin 2013). In the study of Dominik & Banerji (2018) at a community college, with 270 instructors at US Community College that teach entrepreneurship education, the five techniques used by educators in entrepreneurship delivery were shown to be inviting guest speakers (35.4%), discussion with entrepreneurs (30.9%), mentoring (25.6%), internships (22.8%) and simulations (12.2%).

Sondakh dan Rajah (2016) also argued that combining teaching methods between formal processes, such as teaching and tutorials, with interactive workshops and outdoor activities can enhance students' entrepreneurial knowledge and skills. Norfadhilah dan Halimah (2010)

also agreed that in producing students who are capable, mature and able to run a business, teachers play an important role in delivering the content of teaching using a variety of effective methods. Egerova et al. (2016) also agreed that the adopted approach is not based solely on lecturers, presentations and other traditional methods. Some of the T&L strategies that can be applied in the delivery of entrepreneurship knowledge are as follows (Egerova et al. 2016):

- a. Simulations and games
- b. Interactive teamwork and group activities
- c. Direct, action-oriented market research (students identify market opportunities by monitoring and interviewing potential customers, identifying local community needs)
- d. Field trips to local businesses
- e. Inviting entrepreneurs as guests into the classroom
- f. Business plans and other competitions with businessmen as the judges
- g. Student running businesses using real money.

Considering the creativity in the diversity of T&L, it has the potential to positively impact TVET students. It is a great responsibility for the educators to deliver entrepreneurial knowledge to achieve the set goals. Therefore, lecturers should master the content, so that the approach implemented in T&L will be effective for the students (Azhari & Zaleha 2011). In addition, it is necessary for entrepreneurship teachers to have the entrepreneurial elements such as entrepreneurial knowledge, career adaptability, occupational self-efficacy, creative thinking, networking skills and teamwork skills for them to effectively pass the knowledge to students (Dam et al. 2010). In fact, Zaidatol Akmaliah & Arivayagan (2017) agreed that teachers should have a deep knowledge of pedagogical content and constructivist presentations to hone students' entrepreneurial skills. Lack of attention to students' needs in mastering a wide range of cognitive skills such as problem solving, reasoning and creative and innovative thinking causes students to be less capable of applying their knowledge and not thinking creatively outside of their learning context (Azhari & Zaleha 2011).

Nor Aishah and Yap Poh Moi (2002) studied the readiness of commerce teachers for teaching the subject of entrepreneurship. They emphasized that entrepreneurship education not only educates students to be "able to conduct business", but should also educate them on producing a technique or product that makes their lives more comfortable. Hisyamuddin et al. 2008 and Rosli et al. (2007) also acknowledged that the ability of an educator to pass on the entrepreneurial knowledge to students is a meaningful added value for them in their future career. This is because the application and exposure of entrepreneurial knowledge to students can produce students who are creative and innovative and capable of independence after graduation. (Rosli et al. 2007; Rosli 2010; Keogh dan Galloway 2004; Eriniwati Aliza Miaat

2014). Not only does the development of an entrepreneur start with a family-owned business and natural talent, but entrepreneurs are also created through formal learning and training (Armanurah et al. 2015).

This has been proven in the study of Menzies & Paradi (2002). Engineering graduates in Canada who have knowledge and entrepreneurial exposure chose to start engineering-related businesses such as consultation, information technology and manufacturing after graduation. Therefore, it is evident that more and more aspects of training and development are being implemented in T&L to improve know-how among students (Sondakh & Rajah 2016). Thus, transformation is needed in teaching, to be more flexible and entrepreneurial and meet local as well as global needs, to attract students to entrepreneurship. (Kementerian Pendidikan Tinggi 2016). Norasmah dan Rasmuna (2012) also argued that the teaching and learning methods at community colleges should change and transform to improve the quality of technical entrepreneurship, and increase their knowledge and skills while at the same time boosting the confidence of community college students in entrepreneurship. They clearly showed that a variety of teaching strategies and learning processes can drive students' entrepreneurial thinking and spirit, especially for technical and vocational students, to guide them to choose entrepreneurship as a career. Table 3 shows a summary of T&L strategies in entrepreneurship education.

Table 3: Summaries for teaching strategies in entrepreneurship education

Authors	Teaching strategies
Sondakh & Rajah (2016)	The combination of teaching methods (teaching and tutorials) with interactive workshops and outdoor activities
Merhayati et al. (2017)	Training, coaching and mentoring
Mohd Hafeez Al-Amin (2013)	Learning based on thinking skills, verbal presentation, diagnostic skills, group work, case study, problem solving, discussion, role-playing and individual instruction methods
Zaidatol Akmaliah & Arivayagan (2017)	Student-centred learning (business planning, business project delivery, discussion and real business execution)
Dominik & Banerji (2018)	Guest speakers (entrepreneurs), discussion with entrepreneurs, mentoring, internships and simulations
Silva et al. (2018)	Problem Based Learning (solve real problems given by the entrepreneurs)
Egerova et al. (2016)	Simulations and games, interactive teamwork and group activities, direct, action-oriented market research, recognize market opportunities by observing and interviewing potential customers (identifying the community's needs), field trips to local business,

	entrepreneurs as a guest speaker in class, business plan and other competitions with business people as the judges, student run business using real money.
Norasmah et al. (2012)	Learning through experience (run business at campus)

The Relationship between Entrepreneurship Education and Training in Technical Entrepreneur Development

In developing technical entrepreneurs, elements of entrepreneurship such as knowledge, skills and capabilities are very important and must be available to every individual involved in entrepreneurship (Mohd Hasril *et al.* 2017). In general, entrepreneurship knowledge can be implemented not only through formal education, but through entrepreneurship training and programs. In developing entrepreneurship, there is a need for programs that use hands-on know-how, problem solving and action oriented training (Norfadhilah & Halimah 2010). In the study on Small and Medium Enterprises (SMEs) by Nurulhuda dan Ramlee (2009), entrepreneurs showed that their business management was good but their financial and marketing management practices were still weak. Entrepreneurs did not update sales records or use auditor services, and lacked innovation and the use of the latest technology for product commercialisation. In fact, Zaidatol Akmaliah dan Habibah (2004) in their study of Bumiputera entrepreneurs also found similar problems where entrepreneurs still lacked financial and marketing skills. The findings showed that the main problems of entrepreneurs are collecting receivable accounts (61%), lack of ability to conduct product market research (61%), not being able to provide financial reports (60%) and lack of ability to determine product trends (58%). This is due to the lack of involvement in entrepreneurship training in which only 2% of entrepreneurs have the opportunity to attend entrepreneurship training for 6 months or more.

This clearly indicated that the lack of knowledge and involvement in training or entrepreneurship programs have an impact on the management and development of businesses. In addressing these issues, various agencies are involved in strengthening entrepreneurship-related training programs and established links with industry. Among them are the National Institute of Entrepreneurship (INSKEN), the Council of Trust for Indigenous People or “Majlis Amanah Rakyat” (MARA), and the Malaysian Global Innovation and Creative Centre (MaGIC). MaGIC in partnership with the Stanford Graduate School of Business through the Go2Market program will help to drive innovation for successful businesses (Unit Perancang Ekonomi 2015a). Even abroad, the Entrepreneurship Development Program (EDP) in Nigeria is dedicated to explaining the basic elements of starting a business, managing a business and the opportunities available to businesses for



youth. (Awogbenle & Iwuamadi 2010). Thus, it is clear that the parties involved in developing entrepreneurs have given various forms of support for youth starting a business such as advice, consultancy, education and financial assistance (Shapero & Sokol 1982). The knowledge and skills acquired in the training centre are capable of producing competent students in their respective fields (Zool Hilmi Mohamed Ashari 2016).

Entrepreneurship education is highly regarded and encouraged by the government, as it not only encourages students to venture into entrepreneurship but also helped reduce the unemployment rate of graduates (Mohd Shahrir Abdullah 2015), entrepreneurial careers have unexplored potential (Eriniwati Aliza 2014; Farhana 2013). Thus, entrepreneurial exposure especially to TVET students can encourage them to venture into entrepreneurship, and to produce competitive technical entrepreneurs in line with the requirements of the Industry Revolution 4.0. In fact, the content of course materials or curriculum implemented in TVET can improve entrepreneurial skills among engineering and vocational students (Buli & Yesuf, 2015). Therefore entrepreneurship education and training are as important as entrepreneurship development (Peterman & Kennedy 2003).

Conclusion

An apt approach through the diversity of T&L strategies in delivering entrepreneurial knowledge to students should be enhanced and emphasized in line with the current trend in the Industrial Revolution 4.0. This calls for more creativity and innovation among educators, especially in community colleges, when delivering entrepreneurial knowledge to students. An understanding of the basic concepts of entrepreneurship can guide educators in developing T&L strategies, and further develop technical entrepreneurship among community college students. The variety of strategies and activities implemented through formal and informal learning can be a driving factor to engage students in entrepreneurship.

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REFERENCES

- Adznir Mokhtar. 2017. *A study of competencies that influence entrepreneur performance in retail business ventures in Malaysia*. Southern Cross University.
- Ahmad Rizal Madar & Rawiyah Abdul Hamid. 2014. A theoretical review on critical success factors (CSFS) of entrepreneurship programs in Community College. *International Journal of Sustainable Development & World Policy*, 3(6), 138–145.
- Anielson Barbosa Da Silva, Ana Carolina Kruta de Araujo Bispo, D. G. R. & Vasquez, F. I. F. 2018. Problem-based learning: A proposal for structuring PBL and its undergraduate management degree program. *Revista de Gestao*, 25(2), 160–177.
- Armanurah Mohamad, Syahrina Abdullah & Lily Julienti Abu Bakar. 2015. Transformasi Pemikiran Keusahawanan Bagi Dimensi Mengenal Peluang Keusahawanan Dalam Kalangan OKU. *Journal of Global Business and Social Entrepreneurship (GBSE)*, 1(no.1), 68–76.
- Awogbenle, A. C. & Iwuamadi, K. C. 2010. Youth unemployment: Entrepreneurship development programme as an intervention mechanism. *African Journal of Business Management*, 4(6), 831–835.
- Azhari Mariani & Zaleha Ismail. 2011. Pengaruh Kompetensi Guru Matematik Ke Atas Amalan Pengajaran Kreatif. *International Seminar on Quality and Affordable Education (ISQAE 2013)*, 181–187.
- Aldulaimi, S. H. (2018). The Influence of National Culture on Commitment that Produce Behavioral Support for Change Initiatives. *International Journal of Applied Economics, Finance and Accounting*, 3(2), 64-73.
- Ale, A. S. (2018). Assessment of Dual Carriageway for Sustainable Socio-Economic Development in Ado Ekiti, Nigeria. *International Journal of Sustainable Development & World Policy*, 7(1), 27-36.
- Ali, A. (2013). How to Differentiate between ‘Leadership’ and ‘Management’ Function in Organization: A Review of Scholarly Thoughts. *International Journal of Economics Business and Management Studies*, 2(1), 38-44.
- Ali, H. E. (2017). Phase Transfer Synthesis of Novel Based Surfactants: Role of Biocorrosion Inhibition. *Global Journal of Social Sciences Studies*, 3(1), 43-55.
- Alice, H., 2017. Closing the rhetoric reality gap: Effectively implementing engagement and wellbeing policies in Queensland state secondary schools. *International Journal of*



Innovation, Creativity and Change, 3(3): 124-139.

- Baharu Kemat Alhaj, Mohammed Zain Yusof & Nita Edama. 2011. Entrepreneurial Intention : An Empirical Study of Community College Students in Malaysia . *Jurnal Personalia Pelajar*, (14), 45–58.
- Boon, Y. & Ilias, S. Z. M. 2011. Faktor-faktor yang Mempengaruhi Pemilihan Profession Perguruan di Kalangan Pelajar Tahun 4 Perdana. *Journal of Technical, Vocational and Engineering Education*, 1, 22–40.
- Buli, B. M. & Yesuf, W. M. 2015. Determinants of entrepreneurial intentions Technical-vocational education and training. *Education+Training*, 57(8/9), 891–907.
- Dadi, L. 2014. *Effectiveness of Competency - based TVET Curriculum in Ethiopia : the Case of TVET Institutions of Oromia Regional State*. Addis Ababa University.
- Dam, K. Van, Schipper, M. & Runhaar, P. 2010. Developing a competency-based framework for teachers ' entrepreneurial behaviour. *Teaching and Teacher Education*, 26(4), 965–971.
- Dominik, M. T. & Banerji, D. 2018. US community college entrepreneurship educator practices. *Journal of Small Business and Enterprise Development*, 26(2), 228–242.
- Egerova, D., Ubreziova, I., Nowinski, W. & Czeglédi, C. 2016. *Entrepreneurship Education Opportunities and Challenges for Universities in Visegrad Countries*. (D. Egerova, Ed.). Czech Republic: International Visegrad Fund and University of West Bohemia.
- Ekpoh, U. I. & Edet, A. O. 2011. Entrepreneurship Education and Career Intentions of Tertiary Education Students in Akwa Ibom and Cross River States , Nigeria. *International Education Studies*, 4(1), 172–178.
- Eriniwati Aliza Miaat. 2014. *Faktor yang mendorong kecenderungan pelajar kolej vokasional ke arah bidang keusahawanan*. Universiti Tun Hussein Onn Malaysia.
- Global Entrepreneurship Research Association (GERA). 2018. *Global Entrepreneurship Monitor (GEM); Global Report 2017/2018*. United Kingdom (UK).
- Greco, V. & Denes, C. 2017. Benefits of entrepreneurship education and training for engineering students. *MATEC Web of Conferences*, 121(12007), 1–7.
- Hapsari, R. T. S. 2011. Penerapan model pembelajaran konstruktivisme untuk meningkatkan hasil belajar IPA. *Jurnal Pendidikan Penabur*, 16, 34–45.



- Hisyamuddin Hassan, Zaidatol Akmaliah Lope Pihie, Rahil Mahyuddin & Habibah Elias. 2008. Pengaruh strategi pengajaran terhadap tekad keusahawanan berdasarkan persepsi pelajar. Dlm. Abdullah Mat Rashid (pnyt.), Mohd Ibrahim Nazri (pnyt.), & Ramlah Hamzah (pnyt.). *Pendidikan teknikal dan vokasional suatu perspektif umum*, hlm.166–180. Serdang: Penerbit Universiti Putra Malaysia.
- Jabatan Perangkaan Malaysia. 2017. *Siaran Bulanan Perangkaan Tenaga Buruh Malaysia Jun 2017*. Putrajaya.
- Kementerian Pendidikan Tinggi. 2016. *Pelan Tindakan Keusahawanan Institusi Pendidikan Tinggi 2016-2020*. Putrajaya.
- Kementerian Pendidikan Tinggi. 2017. *Statistik Pendidikan Tinggi 2017: Kajian Pengesanan Graduan*. Putrajaya.
- Keogh, W. & Galloway, L. 2004. Teaching enterprise in vocational disciplines : Reflecting on positive experience. *Management Decision*, 42(3/4), 531–541.
- Khow, T. P., Suhaida Abdul Kadir & Abd Patah Malik. 2008. Pendidikan keusahawanan dalam mata pelajaran vokasiona. Dlm. Abdullah Mat Rashid (pnyt.), Mohd Ibrahim Nazri (pnyt.), & Ramlah Hamzah (pnyt.). *Pendidikan teknikal dan vokasional suatu perspektif umum*, hlm.97–121. Serdang: Penerbit Universiti Putra Malaysia.
- Lange, S. 2014. *Systematic review of scientific literature published on the topic of public procurement between the years 1997 and 2012*. University of Twente.
- Liguori, E., Winkler, C., Winkel, D., Marvel, M. R., Keels, J. K., Gelderen, M. Van & Noyes, E. 2018. The Entrepreneurship Education Imperative: Introducing EE & P. *Entrepreneurship Education and Pedagogy*, 1(1), 5–7.
- Majumdar, S. 2013. Technical and Vocational Education and Training and Skills Development for Rural Transformation. Dlm. Cavanagh (pnyt.), Shaw (pnyt.), & Wang (pnyt.). *Revising global trends TVET reflections' on theory and practice*. UNESCO: Unevoc International Center Germany.
- Menzies, T. V. & Paradi, J. C. 2002. Encouraging Technology-Based Ventures: Entrepreneurship Education and Engineering Graduates. *New England Journal of Entrepreneurship*, 5(2), 56–65.
- Merhayati Sipon, Zaidatol Akmaliah Lope Pihie, Fadzilah Abdul Rahman & Umi Kalthom. 2017. Relationship Between Instructor's Entrepreneurship Pedagogical Content Knowledge On Student ' s Entrepreneurial Intention at Kuala Langat Community College. *Politeknik & Kolej Komuniti Journal of Social Sciences and Humanities*, 163–

170.

Mohd Hafeez Al-Amin Abdul Wahab. 2013. *Penerapan kemahiran keusahawanan dalam kalangan pelajar bidang kejuruteraan mekanikal di UTHM*. Universti Tun Hussein Onn Malaysia.

Mohd Hasril Amiruddin. 2014. *Keberkesanan Modul Asas Keusahawanan Bercirikan Strategi Pembelajaran Masteri Terhadap Pelajar Orang Asli*. Tesis Dr. Fal, Fakulti Pendidikan, Universiti Kebangsaan Malaysia

Mohd Hasril Amiruddin, Siti Norain Jafaar & Noorazman Abd Samad. 2017. Tahap pengetahuan, kemahiran dan kebolehpayaan pelatih pendawaian elektrik dalam pembentukan usahawan teknikal di Giatmara Negeri Johor. *Sains Humanika*, 9(1–5), 109–117.

Mohd Shahrir Abdullah. 2015. *Faktor-faktor yang mempengaruhi pelajar-pelajar diploma kejuruteraan politeknik dalam menceburi bidang keusahawanan*. Universiti Tun Hussein Onn Malaysia.

Mok, S. S. 2009. *Pengajaran dan Pembelajaran*. Selangor: Penerbitan Multimedia Sdn Bhd.

Morris, M. H., & Liguori, E. (Eds.). (2016). *Annals of Entrepreneurship Education and Pedagogy–2016*. Edward Elgar Publishing

Nor Aishah Buang & Yap Poh Moi. 2002. Kesiediaan Guru-guru Perdagangan Di Wilayah Persekutuan dari Aspek Pengetahuan Kaedah Pengajaran dan Sikap ... *Jurnal Teknologi*, 37 (E), 1–16.

Norasmah Haji Othman & Salmah Ishak. 2011. Kecenderungan Terhadap Pemilihan Kerjaya Keusahawanan Mengikut Persepsi Peserta Skim Usahawan Siswa. *Jurnal Teknologi*, 56 (Sains), 47–63.

Norasmah Hj Othman, Nor Hafiza Othman, Poo Bee Tin & Rahmah Ismail. 2012. Impak Globalisasi dan Tingkah Laku Pemilihan Kerjaya Keusahawanan dalam Kalangan Pelajar Universiti. *Proseding Perkem VII, Jilid 1*, 435–445.

Norasmah Othman, Mohd Hasril Amiruddin & Haliza Hussein. 2011. Entrepreneurial Behaviour and Non-Cognitive Entrepreneurship Knowledge Among the Orang Asli Youths from the South Zone of Peninsular Malaysia. *Proceedings of the 10th WSEAS International Conference on Education and Educational Technology (EDU '11)*, 207–212.

Norasmah Othman & Rasmuna Hussain. 2012. Evaluation of the implementation of the

- module basic of Entrepreneurship in College Community Ministry of Higher Education. *International Conference on Economics, Trade and Development*, 36, 96–100.
- Norfadhilah Nasharudin & Halimah Harun. 2010. Aspirasi Kerjaya Keusahawanan dalam Kalangan Pelajar Institusi Pengajian Tinggi Awam. *Jurnal Pendidikan Malaysia*, 35(1), 11–17.
- Norfadzliah Mohamad Yatim & Nazelira A Rahim. 2017. Kesiediaan pelajar program pemasangan elektrik Kolej Komuniti Bukit Beruang untuk menceburi keusahawanan bidang elektrik. *e Proceeding National Innovation and Invention Competition Through Exhibition (iCompex'17)*,.
- Norfazila Abdul Malik. 2013. *Penerapan Ciri-ciri Guru Berkesan Dalam Proses Pengajaran dan Pembelajaran Semasa Latihan Mengajar Dalam Kalangan pelajar Sarjana UTHM*. Universiti Tun Hussien Onn Malaysia.
- Nurulhuda Che Abdullah & Ramlee Mustapha. 2009. Kajian Kes Usahawan Tani Industri Kecil Sederhana (IKS) Bumiputera di Negeri Terengganu (A Case Study of SMI Bumiputera Agropreneurs in Terengganu). *Jurnal Pendidikan Malaysia*, 34(2), 143–165.
- Peterman, N. E. & Kennedy, J. 2003. Entrepreneurship education: influencing students' perception of entrepreneurship. *Entrepreneurship Theory and Practice*, 28(2), 129–144.
- Rideout, E. C. & Gray, D. O. 2013. Does Entrepreneurship Education Really Work ? A Review and Methodological Critique of the Empirical Literature on the Effects of University-Based Does Entrepreneurship Education. *Journal of Small Business Management*, 51(3), 329–351.
- Roffe, I. 2010. Sustainability of curriculum development for enterprise education: Observations on cases from Wales. *Education+Training*, 52(2), 140–164.
- Roslan Abu Hassan. 2014. *Kompetensi guru bukan opsyen yang mengajar kemahiran teknikal di Kolej Vokasional negeri Pahang*. Universiti Tun Hussein Onn Malaysia.
- Rosli Mahmood, Lily Julienti Abu Bakar, Mohd Yusop Mohd Jani, Muhammad Shukri Bakar, Norita Deraman, Norbia Zakaria, Syahrina Abdullah et al. 2007. *Prinsip-prinsip Asas Keusahawanan*. Singapore: Thomson.
- Rosli Mohd Saad. 2010. *Prinsip-prinsip keusahawanan*. Shenton Way: Cengage Learning Asia Pte Ltd.
- Ruskovaara, E. & Pihkala, T. 2013. Teachers implementing entrepreneurship education :



- classroom practices. *Education+Training*, 55(2), 204–216.
- Schaper, M. & Volery, T. 2004. *Entrepreneurship and Small Business: A Pacific Rim Perspective*. Milton, Queensland: John Wiley & Sons Ltd.
- Schwab, K. 2017. *The Fourth Industrial Revolution*. United Kingdom (UK): Portfolio Penguin.
- Shapero, A. & Sokol, L. 1982. The social dimensions of entrepreneurship. Dlm. Kent (pnyt.), Sexton (pnyt.), & H.Vesper (pnyt.). *Encyclopedia of entrepreneurship*, hlm.72–90. Englewood Cliffs: Prentice Hall.
- Solomon, G. T., Duffy, S. & Tarabishy, A. 2002. The state of entrepreneurship education in the United States: a nationwide survey and analysis. *International Journal of Entrepreneurship Education*, 1(1), 65–86.
- Sondakh, D. F. & Rajah, K. K. 2016. Developing an entrepreneurship culture: The Greenwich experience. *Entrepreneurship and Innovation*, 7(4), 231–241.
- Suppiah Nachiappan, Ramlah Jantan & Abdul Aziz Abdul Shukor. 2008. *Psikologi Pendidikan*. Selangor: Oxford Fajar Sdn Bhd.
- Syahida Nadia Zakaria. 2015. Kesan pendekatan konstruktivisme dan pendekatan tradisional dalam pengajaran dan pembelajaran komponen sastera bahasa melayu. *Jurnal Pendiidikan Bahasa Melayu-JPBM*, 5(2), 12–21.
- Tranfield, D., Denyer, D. & Smart, P. 2003. Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14, 207–222.
- Turner, T. & Gianiodis, P. 2017. Entrepreneurship Unleashed: Understanding Entrepreneurial Education outside of the Business School. *Juornal of Small Business Management*, 56(1), 131–149.
- Unit Perancang Ekonomi. 2015a. *Rancangan malaysia kesebelas 2016-2020*. Kuala Lumpur: Percetakan Nasional Malaysia Berhad.
- Unit Perancang Ekonomi. 2015. *Rancangan Malaysia Kesebelas*.
- Venkatachalam, V. B. & Arif. A. Waqif. 2005. Outlook on Integrating Entrepreneurship in Management Education in India. *Decision*, 32(2).
- Yusrizal Yusof. 2012. *Kecenderungan keusahawanan dikalangan pelajar Kolej Komuniti*



Bandar Penawar dan Kolej Komuniti Pasir Gudang. Universiti Teknologi Malaysia.

Zaidatol Akmaliah Lope Pihie & Arivayagan, K. 2017. Teaching strategies as a predictor of entrepreneurial mindset: implications for innovative teaching strategies. *International Journal of Innovation Research in Technology & Science*, 5(3), 8–16.

Zaidatol Akmaliah Lope Pihie & Habibah Elias. 2004. Keupayaan Usahawan Bumiputera Melaksanakan Kemahiran Keusahawanan: Satu Kajian Kes. *Pertanika J.Soc.Sci. & Hum*, 12(1), 61–70.

Zairon Mustapha, Abdul Halim Admad, Intan Yusrina Zairon & Che Ghani Che Kob. 2017. Peranan Kolej Komuniti Sebagai Pembimbing Dalam Memantapkan Niat Keusahawanan Pelajar. *Politeknik & Kolej Komuniti Journal of Social Sciences and Humanities*, 1, 209–216.

Zool Hilmi Mohamed Ashari. 2016. *Permodelan persamaan struktur (SEM) pemilihan kerjaya pelajar sistem persijilan kemahiran Malaysia (SPKM)*. Universiti Kebangsaan Malaysia (UKM).