The Perceptions of Vocational Teachers from Malaysian Public Skills Training Institutions on Conducting Research

Khuzainey Ismail[1,a]*, Zulkifli Mohd Nopiah[1,b], Mohammad Sattar Rasul[2,c], Pang Chau Leong[3,d]

[1] Centre of Engineering and Built Environment Education Research (PeKA)
National University of Malaysia,
43600 UKM Bangi, Selangor, MALAYSIA

[2] Faculty of Education,
National University of Malaysia,
43600 UKM Bangi, Selangor, MALAYSIA

[3] Tun Hussein Onn University
86400 Parit Raja, Johor, MALAYSIA

*Corresponding Author

Email: [a]khuzaineyismail@gmail.com, [b]zmn@ukm.edu.my, [c]drsattar@ukm.edu.my, [d]clpang7@gmail.com

Abstract: Conducting a research is one of the methods for professional development among teachers. Being a teacher and a researcher at the same time could be a burden to the teachers' competence due to the different practices in teaching and research. Thus, this study was conducted to explore the vocational teachers' perceptions on conducting research. There was no published research done on vocational teachers from Public Skills Training Institutions (PSTI), specifically, on teachers who are teaching based on the National Occupational Skills Standard (NOSS) modules on their perceptions on doing research. This is a quantitative study and the research instrument used is a questionnaire adapted the "Attitude towards Research" Scale and the reliability questionnaire was 0.80. A total of 166 vocational teachers from four Public Skills Training Institutions (PSTI) under the Ministry of Youth and Sports were selected as samples for this research. The overall findings show that the vocational teachers' perceptions on conducting research according to the five factors in research are at an average level. This study found that the vocational teachers prioritize their job in teaching more than conducting research. Besides, the results also show that there is no difference between the novice teachers and expert teachers on their perceptions on conducting research. There is also no difference in their perceptions when being compared in terms of the teachers' gender. This study contributes to the knowledge on Malaysian vocational teachers' perception on conducting research based on NOSS module.

Keywords: conducting research, perceptions, public accredited centres, vocational teachers, NOSS, skills training

1. Introduction

Vocational teachers at the Public Skills Training Institutions (PSTI) under the Ministry of Youth and Sports are required to focus on skills training with the distribution of 70% for practical practice and 30% for theory based on the National Occupational Skills Standard (NOSS) module. Conducting research is an additional work that needs to be done by vocational teachers. Several researchers have affirmed that conducting research is one of the ways to develop professionalism in vocational teachers within their fields (Kim, 2003; Villegas-Reimers, 2003; Moutafidou, Melliou, & Georgopoulou, 2012). It is believed that teachers are able to enhance their knowledge and teaching skills by conducting research (Peeke, 1984; Meijer, Oolbekkink, Meirink, & Lockhorst, 2013). Although teachers find it quite challenging to change their identity to become a researcher, conducting research can support the teaching and learning process (Taylor, 2017). According to Lytle and Cochran-Smith (1989), conducting research requires a detailed plan and it cannot be done on an immediate basis. In conducting a research, it involves the process of collecting and recording information, documenting experiences inside and outside of the classrooms, as well as presenting a written report. However, the financial support should be provided for research and teachers should be given the opportunity to attend professional courses to enhance their knowledge and understanding on conducting a research (Everton, Galton, & Pell, 2000).

At present, the educators at Technical and Vocational Education and Training (TVET) institutions namely in community colleges, polytechnics, and universities are required to conduct research, but it is not compulsory for the vocational teachers in the PSTI under the Ministry of Youth and Sports. The vocational teachers under the Ministry of Youth and Sports are encouraged by the management to produce commercial and innovative product in their team. It is in-line with Guzzo, R. and Dickson (1996) statement that collaborative research can enhance the effectiveness of working in a team for an organization. However, changes on career promotion policy among vocational teachers under the Ministry of Youth and Sports occured when the requirement to conduct research was proposed as one of the criteria for career articulation in the excellent category, as well as for the purpose of career promotion. Thus, this research intended to study the perceptions of vocational teachers from PSTI on conducting research. It is hoped that the information from this research will assist other researchers who intended to conduct studies similar to this scope. Also, the management of public accredited centres can obtain insights on this subject matter.

1.1 Literature Review

Conducting Research Among Educators

Previous literatures have stated that the concept of professional development among teachers is the basis to develop teachers' professionalism. (Wei & Darling-Hammond 2009; Sedova, Sedlacek, & Svaricek, 2016; Kutner, Sherman, Tibbets, & Condelli, 1997; Wan Mohd Rashid et al. 2011) stated that the development of professionalism is a concept of how to learn to become a professional teacher in the field, how to transform teachers' knowledge into practical forms which can benefit students'

learning outcomes, how to enhance the quality of teaching and effectiveness of learning outcomes, and how to make teachers more efficient in their jobs. According to Bell and Gilbert (1994), teachers' professional development is a career development which involves the planning of new activities in class, generating ideas and new practices in class, and encouraging other class activities. It is regarded as a social development which encourages collaborative team work and personal development which are a part of the teaching aspects. It also involves a social network to enhance teachers' confidence levels. Besides that, professional development is also the key to the innovation in teaching and learning (Desimone, 2009) that can enhance teachers' confidence level and efficacy (Ross & Bruce, 2007).

Active research and self-study through research are among the types of medium included in teachers' professional development (Craft, 2002). According to Beijaard, Meijer, and Verloop (2004), teachers' professional identity can be seen in the research that they have done. It is believed that teachers develop their knowledge and skills by conducting research and by having the intention to change their teaching performance (Meijer et al., 2013). This is in line with Hitchcock and Hughes (1989) on their statement that research has and continues to contribute much to the significance of the educational process. It can explore and test existing theories, use as explanations to expose difficult or problematic areas and believe to be one of the best ways to develop reflective skills. The attitude towards research basically can be defined as a detailed study of the way a person thinks, feels, or behaves towards research (Shaukat, Siddiquah, Abiodullah, & Akbar, 2014).

Labaree (2003) stated a teacher's maturity in his job, dedication on any given tasks, and professional experiences as an expert teacher can make him or her to become more open to conduct research. It is in line with Kennedy (2010), and Burnaford, Fischer and Hobson (2001) who mentioned that the quality of teachers can be measured through their research's findings, as well as enhancing their knowledge and skills. There is a difference in the opinion about gender towards conducting research. Male teachers have plenty of time in conducting research more than female teachers (Manchester & Barbezat, 2013). Female teachers have the tendency to become more stressed than male teachers if the burden of work increases (Coe, Aloisi, Higgins, & Major, 2014). Antoniou, A.-S., Polychroni, F., & Vlachakis, A.-N. (2006) discovered that female teachers experienced higher levels of work-related stress compared with male teachers, particularly for classroom and workload factors, and this pattern is apparent especially for novice teachers with less working experiences (Duggan, 1997). Besides that, male teachers have negative attitudes towards conducting research and the diversity of views from previous researchers have concluded that the gender factor should not be considered for the respondents' attitude towards conducting research (Yasar Ekici, 2017).

A teacher who is interested to conduct research will not feel burden by the task. Research-active teachers are more likely to incorporate research outcomes into teaching practices (Mägi & Beerkens, 2016). Everton et al. (2000) stated that teachers with more work experience are more serious and have the tendency to conduct research. According to Desouky and Allam (2017), a teacher tends to be depressed, especially female teachers who are 40 years

and above, as well as shouldering a lot of other burdens. It is in-line with Shaukat et al. (2014) that the age group of 20 to 30 years old is more excited to conduct research compared to teachers who are 40 years old and above. However, there is a contradicting statement that mentioned teachers' attitudes towards research do not vary by age (Yasar Ekici, 2017). Researchers' intentions and their interest in conducting research are likely to influence their orientation in incorporating research into teaching. Grollman (2008) stated that the teachers need to focus on professional tasks, as well as the current and future practical challenges, including conducting research to produce quality Technical and Vocational Education and Training (TVET) teachers. This research has explored the attitude of vocational teachers from public technical and vocational institutions on conducting research as one of the elements in the professional development.

Teachers' Barrier on Conducting Research

It is not easy to juggle the responsibilities of being a teacher who also practices his or her field and a researcher who explores new knowledge which could often causes stress (Labaree, 2003; Hemsley-Brown & Sharp, 2004). O'Connor, Greene, and Anderson (2006) mentioned that teachers have difficulties to put themselves in a researcher's shoes, and they also have problems in analysing data. The situations and workload of teachers in skills training institutions or schools when compared with university lecturers are totally different. This is because university lecturers are researchers who, along with teaching, are able to conduct research based on theory, analytical data, and empirical data; as compared to teachers, who are only focusing on teaching (Lytle & Cochran-Smith, 1989). Heong et al. (2013) and Köpsén (2014) mentioned that vocational students are not able to generate ideas and they are not interested in learning, which forces the teachers to focus on teaching.

Thus, vocational teachers in PSTI are required to focus on with the distribution of 70% practical practice and 30% for theory based on the Competency Based Training (CBT). Based on the CBT learning, the student be able to demonstrate knowledge, skills and behaviours derived from explicit conceptions of teacher roles (Hodge, 2007).

Conducting research is an additional work that needs to be done by vocational teachers. However, there are issues relating to the teachers' personality for their lack of interest and motivation in conducting research (Faizah, 2016). Besides that, other issues include the lack of information resources, high workloads in the teachers' roles (Faizah, 2016), gaps relating the skills in research methodology and field, as well as their language command to write in English (McEvoy, MacPhail, & Heikinaro-Johansson, 2017) that serve as barriers for them to conduct research. There are views from students who say that educators who can conduct research and publish high quality publications might not be good teachers in teaching (Palali, van Elk, Bolhaar, & Rud, 2018). Bound (2011) suggested that factors at the workplace such as work commitment and the lack of opportunities and places to conduct research are the barriers in learning process. Research-active teachers may be valuing research-related activities more and they may see more potential for using such practices (Mägi & Beerkens, 2016).

Studies have been widely conducted among school teachers and lecturers in Malaysian community colleges, polytechnics, and universities but no published research done for the vocational teachers at the PSTI based on the NOSS module (70% practical practice and 30% for theory). Therefore, it is important to obtain the vocational teachers feedbacks to improve on the research quality in public technical and vocational institutions. The purpose of this research is to identify the perceptions of vocational teachers regarding their attitude towards conducting research, i) to identify the perceptions of vocational teachers regarding their attitude towards conducting research; ii) to verify any significant difference in the perceptions of vocational teachers at the public skills training institutions under Ministry of Youth and Sports regarding their attitude towards conducting research based on (a) gender; and (b) age groups.

The following are the research questions:

a. What are the perceptions of vocational teachers regarding their attitude towards conducting research?
b. Is there a significant difference in the perceptions of male and female teachers regarding their attitude towards conducting research?
c. Is there a significant difference in the perceptions of teachers' age groups regarding their attitude towards conducting research?

2. Methodology

2.1 Research Design

In this study, the researcher used a quantitative research design. Aliaga and Gunderson (2002), describes quantitative research methods as 'explaining phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics).' The non-quantitative data in this study (attitude) is transformed into quantitative form by using Likert scales. This quantitative method is often used because it is the most effective and practical to obtain information in a time (Gorard, 2003). The design of this study is survey. Questionnaires are used as an instrument for collecting data and required information. This research was conducted to identify the perceptions of vocational teachers from PSTI under the Ministry of Youth and Sports on their attitude towards conducting research. The researcher adapted Factor Structure of the "Attitude towards Research" Scale (Papanastasiou, 2005).

2.2 Instrument

For the instrument, this research has adapted the Factor Structure of the "Attitude towards Research" Scale (Papanastasiou, 2005). The instrument for this research is conducted in Malay language and the content of the instrument is verified by 3 content experts. This scale has five main constructs: usefulness of conducting research, anxiety in conducting research, positive attitudes in conducting research, relevance to life of conducting research, and difficulty in conducting research. Each statement was scored on a five-point Likert-type scale with the score of 1 to indicate complete disagreement with the statement and score of 5 to indicate complete agreement.

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2.3 Pilot Test

The questionnaire with 31 items was subjected to pilot testing on 20 respondents from IKTBN Alor Gajah for the reliability purposes. The sample for this study were chosen because respondents are part of the populations. In order to determine the internal reliability of the 31 items, the researcher used Cronbach's Alpha coefficients of reliability. The results indicated that the 31 items achieved an overall Cronbach's Alpha coefficient of .80. Table 1 presents the Cronbach's Alpha coefficient and scale range for each factor.

Table 1: Scale Range and Cronbach's Alpha for Factors Regarding Attitude towards Conducting Research

Factors	Items	Scale range	α
Usefulness of conducting research	7	1-9	0.84
Anxiety of conducting research	7	10-17	0.95
Positive attitudes in conducting research	6	18-25	0.71
Relevance to life of conducting research	3	26-29	0.73

The credibility value can be used in this research because it stands between 0.70 and 0.90 (Hogan, 2007).

2.4 Procedure

This study used a set of questionnaires that contained 31 attitudes towards research questions, with the response scale for the survey being strongly disagree (1) to strongly agree (5). After receiving permission to conduct the research from the Director of the Youth Skills Development Division, Ministry of Youth and Sports, the questionnaires were distributed to four public accredited centres in Selangor and Negeri Sembilan. Prior to completing the questionnaires, the respondents were given a brief statement about the research which was attached to the questionnaire. The questionnaires were divided into two sections namely part A inclusive of respondents' information (gender, age, academic level, working experience and programme field); while part B is the second part contained the 31 items. The researcher gave the respondents two weeks to complete the questionnaires before collecting them from the officer-in charge at each institute.

2.5 Population and Sample

The simple random sampling of this research comprised of 239 vocational teachers in public technical and vocational institutions under the Ministry of Youth and Sports in Selangor and Negeri Sembilan. The respondents of this research are vocational teachers from National Youth Skill Institutes and National Youth High Skills Institutes namely IKTBN Dusun Tua, IKTBN Kuala Langat, IKTBN Sepang, and IKTBN Chembong. Based to the Sample Size Determination Table by Krejcie and Morgan (1970), the number of samples to be selected based on the population is 148. Thus, the amount of 166 samples is sufficient for this study. The numbers of vocational teachers for each institution are as follows: IKTBN Sepang (55 teachers), IKBN Kuala Langat (34 teachers), IKBN Dusun Tuan (86

teachers), and IKTBN Chembong, Negeri Sembilan (86 teachers). The samples for this research consisted of vocational teachers who teach skills programmes, namely Mechanical (n=60), Electrical (n=56), Architecture (n=36), and Machining (n=10). This research has 166 respondents which are sufficient, and the distribution of the respondents are as follows: 54 teachers from IKTBN Sepang (98%), 55 teachers from IKTBN Chembong (86%), 27 teachers from IKBN Kuala Langat (79%), and 26 teachers from IKTBN Dusun Tua (30%). As for the distribution of gender, 74.7% were male (n=124) and 25.3% were female (n=42). The majority of the respondents were male teachers because they dominated the teaching for skills programmes that involve tools, equipment, and machines which are male dominated courses. The age of the respondents ranged from 20 to 30 years old (6%, n=10), 31 to 40 years old (68.7%, n=14), 41 to 50 years old (20.5%, n=34), and 51 to 60 years old (4.8%, n=8). The majority of the respondents were in the age group of 31 to 40 years old. In the public accredited centres under Ministry of Youth and Sports, the teachers were known as Verifier Officers (n=140) and the head of their departments are known as Internal Verifier Officers (n=26). The categories of teachers' education were categorised according to the level of their certification as follows: Malaysian Skills Certificate (MSC), Malaysian Skill Diploma (MSD), and Malaysian Advanced Skill Diploma (MASD). The distribution according to their education level are MSC Level 1 (n=4, 2.4%), MSC Level 2 (n=19, 11.4%), MSC Level 3 (n=87, 52.4%), MSD (n=49, 29.5%), and MASD (n=7, 4.2%).

2.6 Data Analysis

The data were analysed using descriptive statistical analyses for frequency distribution which includes measures of central tendency and measures of variability using SPSS for Windows. The mean scores were calculated and the standard deviation was used to measure variability. Besides that, inferential statistics such as independent samples t-test was used to determine whether there are significant differences in perceptions for the comparison between male and female teacher and, age groups regarding their attitude towards conducting research.

3. Results and Discussion

This research was conducted to investigate the perceptions of vocational teachers in public accredited centres under the Ministry of Youth and Sports on their attitude towards conducting research. The research was guided by the three research objectives and the final outcome will be used to provide insights on the subject matter. It also aimed to determine whether there are significance differences for the following factors: gender and age group of vocational teachers at PSTI based on NOSS module.

3.1 Perceptions on Teachers' Attitude towards Conducting Research

Table 2 shows the average level for all factors among the 166 vocational teachers from four PSTI. It is assumed that the teachers in PSTI are not ready to conduct research due to time constraints and their refusal to perform additional tasks other than teaching. Previous research discovered that the issue of teachers' reluctance to conduct research is related to the following factors: lack of time to do research, lack of

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guidance to do research, lack of knowledge in choosing a suitable research methodology, feeling stressful, lack of support from the institutions, commitment and focus on main tasks, lack of interest in reading academic materials, and lack of understanding on the importance to conduct research (Zhou, 2012; Kutlay, 2013; Borg & Alshumaimeri, 2012).

Table 2: Mean, Standard Deviation and Level of Perception on the Vocational Teachers' Attitude Towards Conducting Research

Factors	N	Mean	Std. Deviation	Level
Usefulness of conducting research	166	3.22	.435	Moderate
Anxiety of conducting research	166	2.49	.578	Moderate
Positive attitudes in conducting research	166	2.95	.478	Moderate
Relevance to life of conducting research	166	2.67	.381	Moderate

Some of the benefits in conducting research are the development of a social network among teachers which provides a learning experience for teachers and the immediate feedback that can improve the learning process (King & Sen, 2013). However, this research found that vocational teachers are still not ready as they have an average attitude for all the factors towards conducting research. This is in line with the findings from Butt (2013) that teachers have negative perceptions about doing research. Campbell and Jacques (2010) mentioned that it is difficult for a teacher to accept any changes in professional practices, especially when it is related to their attitude and beliefs that support their basic knowledge of how to teach (Fullan, 1991). Therefore, these teachers should be given proper training and exposure to learn how to conduct research that will promote a more open and positive attitude towards conducting research.

3.2 Differences between Male and Female Teachers' Perceptions Regarding Their Attitude towards Conducting Research

Table 3 shows the independent sample t-test results of the male and female teachers' perceptions towards conducting research. The findings show that there is no significant difference for the perceptions between male (n=124) and female teachers (n=42) on their attitude towards conducting research. The differences between male and female teachers' attainment of beliefs pertaining to attitude towards conducting research is not statistically significant (p>. 05).

Previous studies have shown that there is a relation between genders on their attitude towards conducting research. Male teachers are more open to conduct research compared to female teachers (Korkmaz, Ayfer & Yesil, 2011; Shaukat et al., 2014). Yasar Ekici (2017) stated that gender has nothing to do with the attitude towards conducting research. This research supported Yasar Ekici (2017) findings on the fact that gender has no significant difference on the teachers' attitude towards conducting research. It is relating to the teachers' personality for their lack of interest and motivation in conducting research (Faizah, 2016).

Table 3: Independent Sample t-test of Perceptions on the Vocational Teachers' Attitude towards Conducting Research by Gender

Factors	Male N = 124		Female N = 42		t	df	Sig. (2-tailed)
	Mean	SD	Mean	SD			
Usefulness of conducting research	3.24	0.433	3.18	0.445	0.74	164	0.460
Anxiety in conducting research	2.45	0.587	2.60	0.542	1.44	164	0.153
Positive attitudes in conducting research	2.97	0.474	2.89	0.489	0.91	164	0.363
Relevant to life of conducting research	2.68	0.372	2.61	0.407	1.04	164	0.302
Difficulty in conducting research	2.42	0.513	2.41	0.404	0.16	164	0.876
Overall	2.753	0.297	2.739	0.266	0.278	164	0.781

3.3 Differences among Age Groups on Teachers' Perceptions Regarding Their Attitude towards Conducting Research

Table 4 shows the independent sample t-test results. The findings show that the two age groups of teachers of 20 to 40 years old and 41 to 60 years old have a significant difference in their attitude towards conducting research for the following factors: usefulness of conducting research and whether there is a positive attitude towards conducting research. Despite the differences, the two age groups share the same opinions on anxiety and its relevance to life as well as the difficulties when conducting research. This research also discovered that anxiety in conducting research, relevance to life of conducting research, and difficulty in conducting research are not statistically significant (p>. 05). According to Shaukat et al. (2014), the age group of 20 to 30-year olds was more excited to conduct research compared to those who are 40 year old and above.

Vocational teachers believe that there are many benefits that can be gained through research and they show positive perceptions on their attitude towards conducting research, but they feel that the research is difficult and they are worried about the task to conduct research. They also mentioned that conducting research has no relevance in their lives. The gap between teachers and the research arena is getting smaller because conducting research is an effective way to develop teachers' professionalism in their fields as well as enhancing their knowledge and skills (Meijer et al., 2013). However, there are limitations in this research and it is hoped that the findings from this research can contribute new information for researchers in similar fields of study

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Table 4: Independent Sample t-test of Perceptions on the Vocational Teachers' Attitude towards Conducting Research by Age Group

Factors	Age between 20 to 40		Age between 41 to 60		t	df	Sig. (2-tailed)
	N = 124		N = 42				
	Mean	SD	Mean	SD			
Usefulness of conducting research	3.151	0.423	3.437	0.403	-3.830	164.00	0.000
Anxiety in conducting research	2.516	0.578	2.417	0.579	0.964	164.00	0.337
Positive attitudes in conducting research	2.877	0.464	3.158	0.461	-3.396	164.00	0.001
Relevant to life of conducting research	2.663	0.380	2.673	0.388	-0.137	164.00	0.892
Difficulty in conducting research	2.454	0.517	2.313	0.369	1.923	99.09	0.057
Overall	2.732	0.304	2.800	0.235	-1.304	164.00	0.194

4. Conclusion

This research has investigated the perceptions of vocational teachers from four PSTI under the Ministry of Youth and Sports in Selangor and Negeri Sembilan on their attitude towards conducting research. The findings show that the teachers are reluctant to conduct research compared to teaching. It is in line with Nadirowa (2019) that stated teachers who are very fatigued by a change are not capable of innovation and give negative impact on the teachers' personal lives. There is no difference for the teachers' gender and working experience on their attitude to conduct research. Although the vocational teachers said that conducting research is not important to them, they believe that there are benefits in conducting research and vocational teachers should have positive attitudes in conducting research. It was discovered that teachers are anxious to conduct research as they believe that it is a difficult task. Hence, vocational teachers need to be trained with relevant courses and training that will improve their skills and confidence to conduct TVE related research through action research. Future researchers can examine the view of management and teachers using qualitative methods for the same subject matter. The views and feedback from vocational teachers on this matter could have an impact on the implementation of a more effective teaching and learning for TVET.

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