COMPETENCIES REQUIRED BY TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING TEACHERS FOR INSTRUCTIONAL DELIVERY

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Abstract

The study adopted a cross sectional survey design basically to determine the competencies required of Technical and Vocational Education and Training (TVET) teachers for improving TVET Instructional delivery in Nigeria. To achieve this basic objective, a structured questionnaire tagged competency questionnaire (CQ) was designed and administered to six curriculum experts and 15 lecturers from four tertiary Institutions offering TVET in Nigeria. The entire population was used for the study since the population size was small. The reliability of the instrument was established as 0.89 using cronbach"s alpha coefficient. Findings of the study depicts that the respondents all agreed that the questionnaire items were required as the competencies for improving the quality of TVET Instructional delivery in Nigeria. The competencies were of three domains which included: facilitating competency, professional competency and communication competency all with their educational implications for TVET facilitators. The study recommended that TVET instructional delivery should be best performed through facilitating process of Socratic and social constructivist"s method of learning where learners actively participate in discovering knowledge and solving problems. TVET Instructional delivery should not be strictly through teaching approach as in the case of traditional method were the teacher act as the knowledge conduit.

Key words: *Competency, TVET, Facilitator, Instructional Delivery*

Introduction

Competent teachers are the driving force behind effective teaching and learning of Technical and Vocational Education and Training (TVET). Scholars Knight and Elliot (2009); Komur (2010); Kleickmann

(2012); Spottll, (2009) and Wesselink, Dekker-Groen, Biemens, (2010) agreed that competent and knowledgeable teachers are essential to the processes of teaching and learning. Therefore, there is the need to ensure that the skills, knowledge, and attitudes of TVET teachers align with technological changes, current job requirements, equipment, machines, processes, and so on (Chappell 2000). Demorest (2017) is of the view that facilitators are best suited for TVET instructional delivery since their roles include gently guiding the participants to new insight. Nungse, Lidima, Iliya and Rish (2018) further stressed that the facilitator of TVET as a guide metaphor indicates that the teacher is to

motivate, facilitate, guide, and challenge learners towards achieving the objectives in question, but not to attempt to act as a knowledge conduit. In the higher institutions, TVET teachers are lecturers who have being teaching TVET courses based on their specializations. Some of these lecturers according to ILO (2010) have participated in curriculum design and mostly its implementation. In the context of our study, curriculum experts are those lecturers who have participated in curriculum design of TVET for improvement in instructional delivery at different levels.

TVET has one of its cardinal domains as orientation towards the world of work with emphasis on the acquisition of employable skills. According to Ezemma (2017), TVET has major focus in the provision of knowledge, skill development and attitudes that are necessary for entry into an occupation. It also includes those aspects of educational process involving in addition to general education the study of relevant technologies, related science and acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various aspects of economic life (UNESCO, 2005). One of the challenges confronting TVET is poor quality of instructional delivery which Mohd (2012) and Chakraborty (2013) attributes to lack of competence in TVET instructional delivery.

Generally, competency is a combination of attitude, knowledge, and skills (ILO 2010; Campion, 2011; Chakraborty, 2013; Mohd, 2012). Competency, according to Volmari, Helakorpi, Frimodt, (2009); and Palaniappan (2003) is an indicator of an individual's level of capacity, capability, and performance in duties/jobs; competency is necessary for both facilitator and teacher to be more competitive. Teacher's competence level can be increased through training and core competencies can be developed as a model to benchmark the performance of TVET teachers in an organization.

A TVET teacher is someone who has been trained and is competent in the field and in the delivery and evaluation of teaching (Nungse, 2018 and Guthrie, 2010). In this study, the TVET teacher is viewed as a facilitator, professional who has the ability to demonstrate skills and continuously develops and progresses their career by gaining more knowledge and skills in the field. Review of other previous studies indicated that the TVET teacher must have social competency (Monnier 2015); knowledge and competency in work processes (Boreham 2002); professional and pedagogical competency (Mirzagitova & Akhmetov 2015; Barbazette 2005); teaching, social, management, technological and technical skills (Othman, 2011). These competences are sine qua non for the improvement of the quality of TVET instructional delivery.

In this study, the researchers addressed the competences required by TVET teachers for instructional delivery to include domains such as facilitating, professional communication and evaluation competencies. Facilitating competence according to Demorest (2017) are those instructional competencies that a

facilitator requires to improve the quality of instructional delivery in the class. For instance, the facilitator should be competent in helping learners to discover knowledge for themselves through Socratic and social constructivist's Method. Socratic debate is a form of cooperative argumentative dialogue between individuals, based on asking and answering questions to stimulate critical thinking and to draw out ideas and underlying presuppositions (Becirovic, 2016). It is synonymous to constructivist's approach.

Constructivism emphasizes how individuals actively construct knowledge and understanding. Social constructivist approaches emphasize the social contexts of learning, and that knowledge is mutually built and constructed. Social and physical contexts, not within an individual's mind (Jonassen, 1998; Jonassen., Peck. & Wilson, 1999). By implication, teachers should create learning situations that are close to real-world circumstances as possible e.g., to learn more about Printed Circuit board (PCB), have some students take the role of engineers in designing the PCB while others in manufacturing PCB, and Vice versa. Similarly, one of the tenets of Social constructivists emphasized the need for a teacher of TVET to be a guide metaphor. A guide metaphor indicates that the teacher is to motivate, facilitate, guide, and challenge learners towards achieving the objectives in question, but not to attempt to act as a knowledge conduit. The ability of a facilitator to create a collaborative and practical cooperative interaction between learners to reflect the lesson objectives forms part of the professional competency. It also includes making learners to be active participants and contributors in the learning process.

Professional competency as the name implies ensures TVET teachers master the contents of knowledge and the pedagogy with the latest information required by vocational learners (Grollmann, 2008). Failure to impart this resulted in graduates who can't perform in the world of work. To convince, impart the knowledge to the learner as well as to give advice, a teacher also requires a communication competence (Oluwasola, 2014). This ability helps teachers to communicate effectively, not only with learners, but including the parents of learners, colleague and the industry. However, the most important communication happened in the classrooms by conveying learning contents, controlling the classrooms and consulting the learners (Amiruddin et al., 2015; Diep & Hartmann, 2016). Details of the competence items are in Tables. The competencies discussed above are what the teacher requires for improving TVET Instructional delivery.

Instructional delivery is an instructor's personal approach to teaching based on his or her own professional identity helping to create a unique classroom culture. Final Master (2014) explained Instructional delivery to mean the interaction among the student, the teacher, the content, and the knowledge/skills/dispositions students will need for learning and collaborating with others in a diverse society and rapidly changing world. The process of instructional delivery involves applying a repertoire of instructional strategies to communicate and interact with students around academic content and to support student engagement (Council of Chief State School Officers, 2013).

These competencies are represented in the figure below.

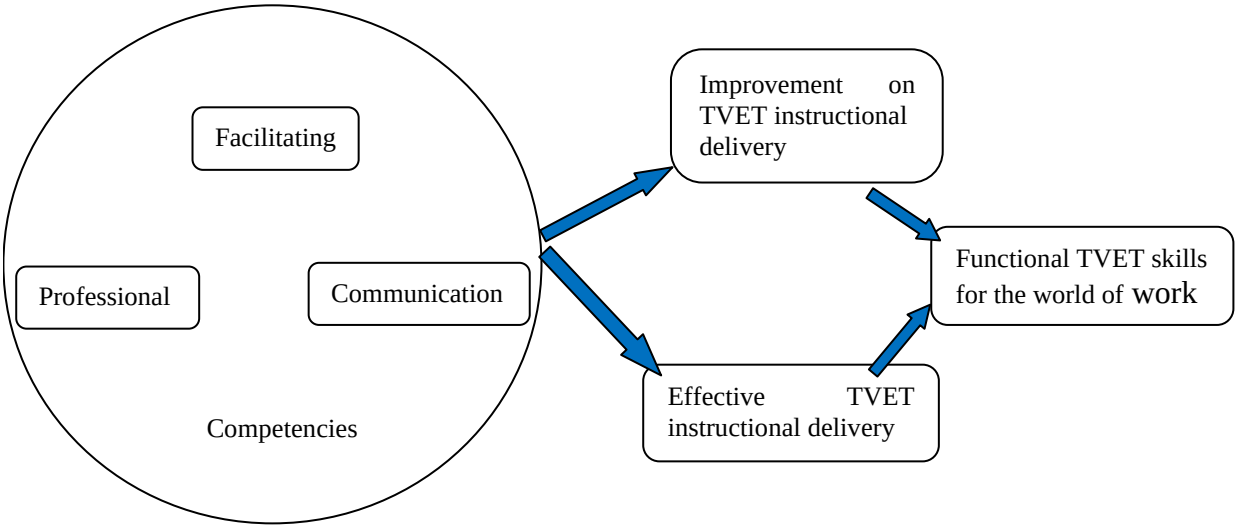

Fig 1.1 CFP Competence schema developed by Nungse, N. I. (2018)

The competence schema is such that a TVET teacher needs the three domains of competencies for improvement and effective TVET instructional delivery. This will in turn degenerate to functional TVET skills for the world of work.

Statement of the problem

A facilitator should be competent in helping learners to practically discover knowledge for themselves through Socratic and social constructivist's method. By implication, teachers desire to create learning situations that are close to real-world circumstances as possible. TVET teachers are also supposed to master the contents of knowledge with the latest information required by TVET learners. They need to master the knowledge and skills related to the current industrial needs. In addition, TVET teachers need to keep themselves on new relevant theory and new technologies to be used in the classrooms. Most importantly the understanding of new paradigm shifts from the teacher centered to learner centered approach of learning.

Unfortunately, TVET Instructional delivery is still performed through the old teacher center approach where the teacher dominates the class. The implementers of TVET curriculum are yet to acquaint themselves with the competencies required for improving TVET instructional delivery. Even if teachers are aware of the significance of adopting Socratic and social constructivists approach to learning, they are yet to create the atmosphere for cooperative argumentative dialogue between learners, based on asking questions to stimulate critical thinking leading to solutions to problems. Distinguishing between the role of teacher and a facilitator is another major problem hitherto in this regards. The need arises therefore to determine the competencies required to optimize the competence of facilitators of TVET towards improving the quality of TVET Instructional delivery in Nigeria. Failure to impart this, results to hatching graduates who can't meet with the current

digital TVET skills demanded in the world of work today.

Purpose of the study

The general purpose of the study is to determine the competencies required by TVET teachers for improving the quality of TVET instructional delivery in Nigeria. Specifically, the study sought to ascertain;

1. the facilitating competencies required to improve the quality of TVET Instructional delivery
2. the professional competencies required to improve the quality of TVET Instructional delivery
3. the communication competencies required to improve the quality of TVET Instructional delivery

Research question

1. What are the facilitating competencies required of TVET facilitator to improve the quality of TVET instructional delivery?
2. What are the professional competencies required of TVET facilitator to improve the quality of TVET instructional delivery?
3. What are the communication competencies required of TVET facilitator to improve the quality of TVET instructional delivery?

Method

Procedures and participants

The study adopted a cross sectional survey design. According to Gall, Gall and Borg (2007), a cross sectional survey design is meant to describe survey that involves a single snapshot of data collection from a sample to represent the population to which the findings of the data analysis can be generalized. The study was conducted within four randomly selected tertiary institutions offering TVET in Nigeria to include University of Nigeria, Federal College of Education Pankshin, Plateau State Polytechnic Barkin Ladi and Kaduna Polytechnic. These institutions have established and experienced TVET teachers who have been practicing the teaching of Technical and Vocational Education. The participants were 21 respondents. It consisted of six curriculum experts and 15 lecturers from the department of Industrial Technical Education of the same institutions. The entire population was used because of its manageable size and was considered appropriate for this study. The instrument was faced validated by three experts, two from the University of Nigeria Nsukka and one from kaduna Polytechnic with 38 items. The experts were requested to determine the suitability of the instrument in the areas of content coverage and grammatical expression. The experts made sound judgments, corrections and suggestions which reduced the questionnaire items to 27 reliable items appropriate for the study. To ascertain the internal consistency of the instrument, six copies of the questionnaire were administered to six lectures in the department of Technical Education, Abubakar Tafawa balewa University Bauchi through research assistants. Reliability of 0.89 was established using cronbach's alpha coefficient.

Measures

Structured questionnaire was used for data collection. It was made up of nine items each of three competency domains. The 21 items were rated by the respondents on a four rating point scales with responses as follows; Highly required (HR) 4.00, Slightly required (MR) 3.00, Slightly required (SR) 2.00, Not required (NR) 1. The data collected from the respondents were analyzed using Statistical Package for Social Sciences (SPSS) version 22. Mean and standard deviation were the analytical tools used to

interpret the data. The responses were required or not required based on 2.50 decision rule. Any item with mean value of 2.50 and above was regarded as required. Item with mean value of less than 2.50 was regarded as not required. The result of the findings is presented in tables as follows:

Table 1: Mean and standard deviation of respondents on the Facilitating competence required of TVET facilitator to improve the quality of TVET instructional delivery.

S/N	The required facilitating competence of TVET teacher includes the ability to;	Mean	SD	RMK
1	help the learners to discover knowledge for themselves through the Socratic and social constructivist's approach	2.66	1.07	**R**
2	make learners active contributors of learning process	2.88	1.01	**R**
3	provide new ways of acquiring TVET skills	3.33	0.62	**R**
4	provide new ways of engaging learners	3.33	0.78	**R**
5	create collaborative and cooperative interaction	3.40	0.69	**R**
6	guide the learners toward achieving the objectives	3.03	0.89	**R**
7	prepare learning activities for individual group	3.22	0.93	**R**
8	make learners thing beyond the book	3.37	0.74	**R**
9	guide learners towards constructing knowledge	2.66	1.10	**R**

N.B, R=required

Table I above shows that all the items had mean to be the facilitating competence required of a TVET values ranging from 2.66 - 3.40. These values were facilitator for improving TVET instructional delivery.

all above the criterion value of 2.50. By implications, the response of the respondents certified the items

Table 2: Mean and standard deviation of respondents on the Professional competence required of TVET facilitator to improve the quality of TVET instructional delivery.

S/N	The required professional competency of TVET teacher includes the ability to;	Mean	SD	RMK
10	master subject-specific content	2.74	1.02	**R**
11	master subject-specific pedagogical content	3.00	1.03	**R**
12	master subject pedagogies	3.03	0.89	**R**
13	undergo an on-the-Job training regularly	3.07	0.72	**R**
14	preparing TVET textbooks	3.00	0.96	**R**
15	attain a training in the use of various TVET teaching strategies	3.29	1.03	**R**
16	use the workshop training tools	2.81	0.96	**R**

17	preparing students for Industrial training programmes	3.00	1.03	**R**
18	ability to master all the TVET Skill instructional delivery strategies	3.18	0.87	**R**

N.B, R=required

Table 2 above shows that all the listed items also had professional competence required of a TVET their mean values between the ranges of 2.74-3.29. facilitator in successful improvement of TVET The values were above the criterion mean of 2.50. instructional delivery.

This shows that all the items constituted the

Table 3: Mean and standard deviation of respondents on the Communication competence required of TVET facilitator improve the quality of TVET instructional programme delivery.

S/N	The required communication competence of TVET teacher includes;	**Mean**	**SD**	**RMK**
19	Attentiveness	3.14	0.86	**R**
20	Perceptiveness	3.48	0.75	**R**
21	Responsiveness	3.18	0.83	**R**
22	Emotional sensitivity	3.07	0.95	**R**
23	Emotional expressivity	3.03	1.09	**R**
24	Emotional control	3.37	0.83	**R**
25	Social expressivity	3.25	0.71	**R**
26	Social sensitivity	3.14	0.98	**R**
27	Social control	3.44	0.57	**R**

N.B, R=required

The result of Table 3 depicts that a TVET facilitator requires all the listed items for successful delivery of TVET instruction since the mean which falls between 3.07-3.48 did not fall below the criterion value of 2.50. Those items are required for improving TVET instructional delivery as well.

Major Findings

Table 1-3 depicts the competencies required of a TVET facilitator towards improving TVET instructional delivery. Findings of the study show that the facilitating, professional and communication competence are highly required for TVET instructional delivery in the institutions where TVET is functional. In the aspect of facilitating competency, TVET teachers desire to be competent in helping learners to discover knowledge themselves, make learners active contributors of learning process as well as provide new ways of acquiring TVET skills among others. As it concerned the professional competencies, TVET teachers should be competent in the ability to master subject-specific content, prepare TVET textbooks, master all the TVET skill instructional delivery strategies and many others. Since the most important communication happens in the classroom by conveying the learning content, the ability of a TVET teacher to be attentive, perceptive, responsive, emotional sensitive, among others were all competence required of the TVET teachers.

Discussion of Findings

This section discussed the findings of the study as they confirm or disagree with the opinions of some authorities as regards their study. Findings of research question 1 revealed that all the items had mean values ranging from 2.66-3.40. These values were all above the criterion value of 2.50. By implications, the response of the respondents certified the items to be the facilitating competencies required of a TVET facilitator for improving TVET instructional delivery. This result concord with the findings of Oluwasola, (2014) and Demorest (2017) whose findings also revealed that facilitating competencies are the required recipe that a TVET teacher should be competent in while helping learners to discover knowledge for themselves through Socratic and Social constructivist approach.

Result of Table 2 shows that all the listed items also had their mean values between the ranges of 2.743.29. The values were above the criterion mean of 2.50. This shows that all the items that constituted the professional competencies are required of a TVET facilitator in successful improvement of TVET instructional delivery. This result affirms the findings of Grollmann, (2008) where it proven that professional competencies are needed to ensure that TVET teachers master the contents of knowledge and pedagogy with the latest information required.

The result of Table 3 depicts that a TVET facilitator requires all the listed items for successful delivery of TVET instruction since the means which falls between 3.07-3.48 did not fall below the criterion value of 2.50. Those items are required for improving TVET instructional delivery which is in line with the study conducted by Amiruddin et al., (2015); Diep and Hartmann, (2016). Communication is seen and proven to be a vital element through which information reach the learner from the teacher. The TVET teacher therefore should not hesitate to possess the communication competencies for fitness into the TVET instructional delivery.

Educational implications of the study

The facilitator should be competent in helping learners to discover knowledge by themselves through Socratic and social constructivist's Method

(Muhammad, Roziah, Mohd & Muhd, 2017;

Demorest, 2017). The ability of a facilitator to create a collaborative and practical cooperative interaction between learners to reflect the lesson objectives forms part of the facilitating competency. It also depicts that the facilitator should make learners to be active participants and contributors in the learning process. Professional competency implies that TVET teachers should master the contents of knowledge with the latest information required by vocational learners. They need to master the knowledge and skills related to the current industrial needs. Failure to impart this resulted with the graduates who can't perform in the world of work. Another essential implication is that which is attached to communication competence. This ability helps teachers to perform effective communication not only with learners, but including the parents of learners, colleague and the industry. However, the most important communication happened in the classrooms of conveying learning contents, controlling the classrooms and consulting the learners. The facilitator therefore needs to come to the limelight of the significance of these competencies in other to improve TVET instructional delivery in Nigeria.

Conclusion

In the previous sections of this paper, three interrelated domains were discussed through the competency domains. The educational implication of the facilitating domain stressed the need for facilitator to be competent in helping learners to discover knowledge by themselves through Socratic and social constructivist approaches. It also depicts that the facilitator should make learners to be active participants and contributors in the learning process. Professional competence implies that TVET teachers should master the contents of knowledge with the latest information required by vocational learners. Communication competence is anchored on the ability of facilitators to perform effective communication not only with learners, but including the parents of learners, colleague and the industry. Imparting this yields with the graduates who can perform effectively in the world of work. The

facilitator therefore needs to come to the limelight of the significance of these competencies in other to improve TVET instructional delivery in Nigeria.

Recommendation

For a successful TVET Instructional programme delivery in Nigeria, the researchers proffer recommendations based on the findings of the study, thus:

- TVET Instructional delivery should be best performed through facilitating process of social constructivist's approach where learners actively participate in discovering knowledge and solving problems.
- TVET delivery should not be through teaching approach as in the case of traditional method were the teacher act as the knowledge conduit
- TVET facilitator who is traditionally known as teacher, desire to acquire the competencies that would enable them fit into the TVET system for proper instructional delivery

References

Academic Senate (2011). *Approved definition of Instructional Program and Non-Instructional Program 1st Reading*. Available online at www.vvc.edu/.../ Definition of instructional and non-instructional.

Amiruddin, M. H., Amin, F., Yunus, N., Hisyam, M., Hashim, M., Rahim, M. B, Rahim, A. (2015). Application of Communication Skills (CS) Among Lecturer on Vocational Teaching and Learning in Vocational College Zone Johor, Malaysia.International Journal of Vocational Education and Training Research *1*(4), 55–61.http://doi.org/10.48/j.ijvetr.20150104.11.

Barbazette, J. (2005). *The trainer"s journey to competence: Tools, assessments and models*. Pfeiffer, a Wiley Imprint.

Becirovic, S. (2016). *Socratic Method as an Approach to Teaching*.DOI: 10.7/er.2016.111.511

Boreham, N. (2002). Work process knowledge, curriculum control and the work-based route to vocational qualifications. *British Journal of Educational Studies* 50(2):225–237.

Campion, M.A. (2011). Doing competencies well: Best practices in competency modeling. *Personnel Psychology* 64: 225–262.

Chakraborty, R. C. (2013). A model for assessing competency level. *International Journal of Human Resource Management and Research (IJHRMR)* 3(4): 33–40.

Chappell, C. (2000). *The new VET professional: Cultu re, roles & competence*. http://www.oval.uts.edu.au/working_papers/ 2000WP/0041chappell.pdf.

Council of Chief State School Officers, (2013). https://www.gatesfoundation.org/How-WeWork/Quick.../2013/11/OPP1089902.

Demorest, C. (2017). *Difference between Facilitators & Teachers*. Available online at https://classroom.synonym.com/info7889937-difference-betweenfacilitators-teachers.html

Diep, P. C., & Hartmann, M. (2016). Green Skills in Vocational Teacher Education – a model of pedagogical competence for a world of sustainable development. *TVET@Asia,* (6), 1–19. http://doi.org/10.1002/ISSN

Ezemma, J. C. (2017). Sustainable Financing of TVET programmes for Employability of graduates in Nigeria. *Journal of Technical Vocational Education, Training and Research 2 (1), 71.*

Final Master (2014). *Instructional Delivery Overview*. Available online atwww.kidfriendlyky.com.instructionalDeliveryOverview

Gall, M.D., Gall, J. P. & Borg, W.R. (2007). *Educational Research*: An introduction 8th ed. Person education, Inc.

Grollmann, P. (2008). Professional competence as a benchmark for a European space of vocational education and training. *Journal of European Industrial Training*, *32*(2/3), 138– 156. http://doi.org/10.1108/03090590810861686

Guthrie, H. (2010). *Professional development in the vocational education and training workforce*. National Centre for Vocational training

ILO (2010). *Teachers and trainers for the future – Technical and vocational education and training in a changing world,* International Labour Organization

Jonassen, D. H. (1998). *Designing constructivist learning environments In C. M. Reigeluth (Ed.), Instructional theories and models*. (2nd ed.) (pp. 1- 21). Mahwah, NJ: Lawrence, Erlbaum.

Jonassen, D., Peck, K., & Wilson, B. (1999). *Learning with technology: A constructivist perspective*. Upper Saddle River, NJ: 31(9) pp 32—35.

Kleickmann, T., Richter, D., Kunter, M., Elsner, J., Besser, M., Krauss, S., & Baumert, J. (2012). Teachers' Content Knowledge and Pedagogical Content Knowledge: The Role of Structural Differences in Teacher Education. *Journal of Teacher Education, 64*(1),90–106.

http://doi.org/10.1177/0022487112460398

Knight, J. & Elliot, J. (2009). TVET Teacher Education: A Vision beyond Tradition. *Journal of Technical Education and Training* 1(1): 73–84.

Komur, S. (2010). Teaching knowledge and teacher competencies: a case study of Turkish preservice English teachers. *Teaching Education* 21(3): 279–296.

Mirzagitova, A. L. & Akhmetov, L.G. (2015). Selfdevelopment of pedagogical competence of future teacher. *International Education Studies* 8(3): 114–121.

MohdSalleh, K. (2012). *Human Resource*

Development practitioners" perspectives on competencies: an application of American Society for Training and Development

(ASTD)

Monnier, M. (2015). Difficulties in defining socialemotional intelligence, competences and skills - theoretical analysis and structural suggestion. *International Journal of Research for Vocational Education and Training* 2(1): 59–84.

Muhammad, A. A., Roziah, M. R., Mohd. A. M. A., and Muhd, K. O. (2017). Competencies of Vocational Teacher: A Personnel Measurement Framework. *International Journal of Academic Research in Business and Social Sciences Vol. 7, Special Issue.*

DOI: 10.6007/IJARBSS/v7-i14/3659 URL: http://dx.doi.org/10.6007/IJARBSS/v7i14/3659

Nungse, N. I. (2018). Development of Dendeng Production Curriculum for Senior Secondary School Students in Nigeria. *A Ph. D Seminar presented to the Department of Industrial Technical Education, University of Nigeria Nsukka, in partial fulfilment of the course ITE 612 (Advanced Curriculum Studies in*

Industrial Technical Education).

Nungse, N. I., Lidima, B. G., John, I. and Rish, Y. (2018). Promoting Entrepreneurship Education at the Senior Secondary School Level in North Central Nigeria. *Journal of Home Economics Research 25(1) 46-57.*

Oluwasola, A. J. (2014). Professional competence of technical teachers: A factor analysis of the training needs of technical college teachers. *International Journal of Academic Research in Business and Social Sciences 7 (Special Issue), 150-156.* DOI: 10.6007/IJARBSS/v7i14/3659 URL:

http://dx.doi.org/10.6007/IJARBSS/v7i14/3659

Othman, A., Abdullah, N.H., Sulaiman, M., Shamsuddin, A. (2011). The Emerging Roles of Coaches in the Malaysian Dual Training System. *International Education Studies* 4(1): 154–60

Palaniappan, R. (2003). *Competency Management: A Practioners"s Guide*, Percetakan Suma, Kuala Lumpur

Spottll, G. (2009). Teacher education for TVET in Europe and Asia: The comprehensive requirements. *Journal of Technical Education and Training* 1(1): 1–16.

Volmari, K., Helakorpi, S. &Frimodt, R. (2009). Competence Framework for VET professions: Handbook for practitioners. *Finnish National Board of Education*, *CEDEFOP*. p. 58

Wesselink, R., Dekker-Groen, A.M., Biemens, H. J.A. & Mulder, M. (2010). Using an instrument to analyze competence-based study programmes: experiences of teachers in Dutch vocational education and training. *Journal of Curriculum Studies* 42(6): 813– 829.