Development of Factorial Validation for Emotional Intelligence Competency Scale as Skills for Employment of Technical Education in Northern Nigeria

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Abstract

This study focused on the development and factorial validation of an instrument as a skills for employment of technical education graduate   in northern Nigeria. The author adopted Goleman (2002) model of emotional intelligence consisted of self-awareness, self-management or regulation, social-awareness and relationship management to generate the items for study. The study adopted exploratory and descriptive research design and was carried out in northern Nigeria. The samples of the study are 45 final year students that are used as the pilot sample from institutions offering technical education in northern Nigeria. The main instrument is a set of questionnaire which consisted of 95 items that were used as the draft copy of the instrument and were validated by 5 experts. The factor analysis was applying to analyze the result of the validation. The factorial validation was chosen because this method help the researcher to clarify the number of factors within a set of items. The 95 items draft copy of the instrument had factor loadings ranged from 0.598 to 0.790 and were above the factor loading of 0.50 at 10% over lapping variance with one component, with reliability coefficients ranged from 0.76-0.89, given total of 0.914 Cronbach alpha coefficient of internal consistency reliability in the four components computed, with this result its indicated that the scale was a refined test. Consequently, this shows that, 95 items are valid enough to develop the emotional intelligence competency scale as a skills for employments of technical education in northern Nigeria and as well were also highly reliable as a skills for employments of technical education in northern Nigeria. Therefore, the developed and validated emotional intelligence competency scale could be used to gauge the amount of emotional intelligence competence of students and graduates of technical education if is use by appropriate authority.

Keywords
Instrument Development, Emotional Intelligence, Factorial Validation

1. Introduction
Developing measuring instrument for emotional intelligence is widely encouraged by scholars as it's very important and more appropriate to measure emotional intelligence base on individual settings for certainty of measured abilities. Instruments as a generic term in education, its outcome need to be consistent, dependable, reliable, valid and useable, and it has two classification for researchers and their subject (Biddix 2006).Nigerian technical education graduate as the subject in the study is a skilled individual that need to be aware of his/her emotional state, appropriately regulate his/her emotions and socially associate with others and manage his relationship and this can only be achieve through the development of appropriate tools especially on emotional intelligence (Ranganat 2011). Ogwo and Oranu (2006) defined an instrument as a data collection device and information gathering tools in education. Afolabi (2017) stated that it is appropriate for every researcher to use appropriate instruments to assess emotional intelligence.

Emotional intelligence is termed to be an intellectual talent involved in one's personal behavior, an individual's ability to be aware of his/her emotions, understand and use the emotional competence on his/herself and others to achieve a specific goals (Boyatzis and Fabio 2004). Developing an instrument to suit individual context and individual social dorms should be the major issues for scholars globally, as studies emphases on the relevance of developing an emotional intelligence instrument to suit the context and individual's social norms (Nguye 2019: Aforlabi 2017). Ability for one's to recognize his/her emotional state and those of others is a motivating factors, in maintaining our relationships with others. Emotional intelligence as an individual capacity to perform well in one choosing career

(Ranganath 2011). Thus; it become a necessary skills for technical education graduate at this time of market competition.

Technical education graduate is a skilled individual that operate machines and tools to carry out a giving task, whom acquired the knowledge and skills through training under the guidance of professionals (Backstein et al. 2005; Azodo 2014; Van Laar et al. 2017). It is assumed that individual that possess technical skills to immediately secure employment after graduation but lack of knowledge on emotional intelligence on the part of the technical education graduate and absence of specific instrument to measure the emotional intelligence for employment of technical education student is a major challenge facing the discipline. Based on the definition of technical education by Comfort (2012) technical education is the study of technologies and related scientific knowledge, and the acquisition of applied skills, understanding, attitudes, characters and knowledge relating to career in various financial sectors and social life, visa viz emotional intelligence. A study by Awang et, al. (2017) proved that an individual who has a higher level of emotional intelligence have a tendency to be more committed, develop good working relationships, more forbearing when facing emotional pressure without losing their temper. Hence, it is important to measure the emotional competency to get students more prepared for employment.

1.1 Problem statement

Nigerian technical education graduate as the subject in the study is a skilled individual that need to be aware of his/her emotional state, appropriately regulate his/her emotions and socially associate with others and manage his relationship to achieve his/her goals, that wasn't achieve due to the lack of knowledge on emotional intelligence and absence of appropriate instrument to measure the emotional intelligence of technical education graduate in northern Nigeria. This can only be achieve through the development of appropriate tools especially on emotional intelligence (Udo 2014). Hence the need for the study

1.2 Objectives

This study is aim to determine the validity and reliability of the developed emotional intelligence competency scale as a skills for employment in technical education in northern Nigeria.

2. Literature Review

2.1 Emotional intelligence

Emotional intelligence has turn out to be a rendezvouses terms among scholars with quite a lot of understanding and definitions of the concept. Salovey and Mayer (1990) viewed emotional intelligence as a mental ability, a subdivision of social intelligence that comprises the ability to observe our personal emotions and feelings and those of others' to differentiate among them and to use this information to direct our thinking and actions. whilst Petrides (2011) understand it as an individual personality trait, and Daniel Goleman (1995) as emotional competence. Shi and Wang (2007) as a mixture of motivations, cognitive and affective constructs. Emotional intelligence is a combination of cognitive abilities and personality traits (Laura and Anca, 2014). In Goleman (2011) emotional intelligence is an ability that differentiates brilliant individuals from mediocre. To Bhullar and Schulte (2018) emotional intelligence is an individual ability to use his/her emotions effectively in achieving personal goals. Goleman (2002) proposed four cluster of emotional intelligence thus Self-Awareness, Self-Regulation, Social-Awareness and relationship management and defined it as ability to understand your emotions as well as others, to effectively manage behavior, to navigate social situation, and make personal decisions. "Building upon and integrating a great deal of competencies research, Goleman Boyatzis and Mckee, (2002) presented a model of emotional intelligence with eighteen competencies arrays in four clusters" (Boyatzis and Sala 2004. pp12) the thus;

Cluster one, self-awareness competencie
i.   Emotional self-awareness
ii.   Accurate self-assessment
iii.   Self-confidence

Self-Awareness is an individual capacity to understand, recognize, and appraise one's emotional state (Egbedion, 2010). An ability for one's to truthfully identify his/her feelings and understand his/her strengths and limitations for personal for growth (Boyatzis and Sala 2004).

Cluster two Self-Regulation competencies
i.   Emotional self-control
ii.   Transparency
iii.   Adaptability
vi.   Achievement
v.   Initiative
vi.   Optimism
Self-Management entails the individual capacity to control his/her emotional state and impulses in maintaining his/her relationship with others (Talentsmart Inc., 2011).
 i.   Empathy
ii.   Organizational awareness
iii.   Service orientation
Social-Awareness is an individual capacity to identify and properly react to the emotions and feelings of others Egbedion, (2010). Acknowledging others feeling, feeling others as ours, being considerate and thoughtful, making decisions that take other feeling into considerations can help build your social-awareness (Boyatzis and Sala 2004).

Clusters four, relationship-management competencies
i.   Developing others,
ii.   Inspirational leadership
iii.   Influence
iv.   Conflicts management
v.   Change catalyst
vi   Team work and Collaboration

Relationship management or interpersonal skills entails the individual capacity to understand the intents, impulses and need of other people which permit one's to effectively work together to achieve a common goals, (Talentsmart Inc., 2011). Influencing and inspiring others, clear communication, managing conflict and successful team work, and relationship management are attribute (Boyatzis, and Sala 2004).

Emotional Intelligence is the characteristics for achievement in recent time. Emotional intelligence competency is a skills for employment in 21st century (Suarta et al. 2017). Graduate of technical education are facing serious challenges due to the new skills demand, such as EI for employment. (Coetzee and Beukes 2010; Omar et al. 2012 Suarta et al. 2017; Marino 2018). This necessitate technical education student to acquire emotional intelligence competency as a skill for employment.

2.2 Technical education
Technical education is designed to develop individual's work skills and technical expertise to face the challenges of lack of employment (Odo 2017), and education that used knowledge, attitude, manual expertise to avert poverty, "an integral part of general education, a means of preparing for occupational fields and for effective participation in the world of work, an aspect of lifelong learning and a preparation for responsible citizenship, an instrument for promoting environmentally sound sustainable development, and a method of facilitating poverty alleviation (pp.7)" (UNNESCO and ILO 2002), as it comprises industrial training, the use of hand tools, machine operations as well as commercial skills work (Odo et al, 2017).

2.3 Instrument development
Development of new instrument occurs as a result of absence of precise tool to measure phenomena in education, health and social sciences. Researchers in social sciences and behavioral research develop new instrument in condition where a phenomena where observed and there is no existing instrument available to measure the phenomena, these by generation of items from literature and survey method by using questionnaire (Zhou (2019). To successfully develop a new scale according to Zhou (2019) five stages are needed; definition of construct and content domain, items generation, scale pilot-test, revising the developed scale, finalizing the scale.

2.4 Factorial validation
"Validity of a test refers to the extent to which a test measures what it is supposed to measure. This implies that a test, which is valid for one purpose may not be valid for another" (Anaekwe 2007 pp105). Face and construct validity test

were conducted to examine the factorability, validity and reliability of the 95 items of emotional intelligence competency scale. Factorial validity examines the degree to which the indicated constructs of a measure can be recovered in a set of test score (Hooper 2012). It also concerned with the internal structure of test scores. A test internal structure is the way that the parts of the test are related to each other (Leimeister 2010). The actual structure of the test should be of the same face with the theoretical or intended structure of the test. Simply, factorial validity is used to identify what the test is made to measures in a given test (Hair et al. 2017). That is, with the respect to the valid dimensions, and the characteristics of those dimensions and components (Hair et al., 2009). The definition of the dimensions are determined by which items load onto which dimensions. (Brasseur et.al. 2013).

3. Methods
Mixed method research design was used for the study. The data collected were integrated sequentially to address a research objective (Creswell & Clark, 2018).

Firstly, generation of the items from literature reviewed from work of Aforlabi (2017); Coetzee and Beukes (2010) and Goleman (2002). Using emotional intelligence model of Daniel Goleman (2002) of self-awareness, self-regulation, social awareness and relationship management. The initial items generated were validated by 9 experts in the field of psychology, educational psychology, measurement and evaluation and technical education, thereafter, two round Delphi techniques was carried out to decide on the appropriate items for the development of Emotional Intelligence Competency Scale as Skills for Employment of Technical Education in Northern Nigeria. Delphi experts were recruited to rate the items in the questionnaire and the resultant data was analyzed using the coefficients of variance for mean and standard deviation, the result of the analysis of the rated items were used in developing the instrument in line with the opinion of (Aforlabi 2017; Nguye 2019; Schutte et al. 1997).

Secondly, the instrument developed was validated by 5 professional lecturers of technical education and tested on sample population of 45 technical education students selected from institutions offering technical and vocational education in northern Nigeria for the pilot study. Cronbach's alpha coefficient reliability test were used on the pilot study data to determine the feasibility of the instrument. Consequently, the developed instrument was factor analyzed for adequate content validity.

4. Data Collection
Structured questionnaire were developed and used as the instrument for data collection in this study.

5. Results and Discussion
The summary of the factor validity result of the study indicated that 95 items in the draft copy of the emotional intelligence competency were valid for developing emotional intelligence competency scale as a skills for employment in technical education in northern Nigeria.

The developed emotional intelligence competency scale was highly reliable for employability skills of technical education graduates in Northern Nigeria as the reliability of the entire items resulting to be 0.867, 0.809, 0.832 .and 0.913 respectively, with overall alpha 0.958, thus; Cronbach's alpha coefficient for testing internal consistency reliability in the four components computed indicated that the scale was a refined test. The four components represent a developed emotional intelligence competency scale for employability skills. Component one (A) represents Self-Awareness, Component two (B) represent, Self-Regulation, Component three (C) represents Social-Awareness and the component four (D) represents the relationship management .whilst, the data for the factor analysis reveals that 95 items had factor loadings that ranged from 0.598 to 0.790 and were above the factor loading of 0.50 at 10% over lapping variance with one component.

The study findings shown that the 95 items are valid for the development of emotional intelligence competency scale as a skills for employment in technical education in northern Nigeria. Whilst, given the high reliability coefficients or substantial agreement for various competencies in the scale/instrument, the items in the emotional intelligence competency scale were reliable and could be considered for use in assessing employability skills of technical education graduates in Northern Nigeria. These findings were in agreement with the opinion of Olaitan (2003) that face validity of psychomotor learning activity could be pursued by submitting the list of skill items drawn up for use to experts for review so as to yield compromise or consensual agreement on the importance of the items and such was the case in this study. In order to make the outcomes of validity concrete, factor analysis was conducted and Cronbach alpha

reliability was employed to determine the reliability of the items used for the development of the scale and this is in agreement with the opinion of Bakare (2014) stated that in face validity or validation, the experts are hired to vet, remove, reword and replace any irrelevant item(s) of the instrument with useful ones and factor analysis can now be conducted.

5.1 Numerical Results

Table5.1 Summary of Factorial Validity/Factor Analysis of the 95 Items Retained for the Emotional Intelligence Competency Scale as a skills for employment in technical education in northern Nigeria

S/N	Item statements	Factor loading at 0.50	Remarks
A	**Self-Awareness Competencies**		
1	I understand when I am in strongly angry as a technical education graduate	.663	*Valid*
2	I know when I am feeling pleasure as a technical education graduate	.709	*Valid*
3	I am aware of what I am unable to do as a technical education graduate	.751	*Valid*
4	I have the ability to manage my feeling such as love, anger, fay, hate, fear etc. as technical education graduate	.749	*Valid*
5	I have the ability to judge people fairly as a technical education graduate	.684	*Valid*
6	I have the ability to perceive people opinion positively as a technical education graduates	.663	*Valid*
7	I accept constructive criticism as a technical education graduate	.716	*Valid*
8	I view things critically before passing judgement as a technical education graduate	.728	*Valid*
9	I have the ability to convince people to agree with my opinion as a technical education graduate.	.756	*Valid*
10	I have the ability to motivate people towards achieving positive result as a technical education graduate	.638	*Valid*
11	I can confidently express my feelings when seeking for favours as a technical education graduate	.696	*Valid*
12	I have the ability of facing challenges no matter the difficulties as a technical education graduate	.621	*Valid*
13	I know my worth as a technical education graduate	.693	*Valid*
14	I have the ability to stand to my words no matters the situation as a technical education graduate	.716	*Valid*
15	I have the ability to face crowd and express my capability as a technical education graduate.	.725	*Valid*
16	I have the ability to stand firm on my word as a technical education graduate	.641	*Valid*
17	I understand when I am in depressed situation as a technical education graduate	.679	*Valid*
B	**Self-regulation competencies**		
18	I have the ability of controlling my emotions when dealing with my friends as technical education graduate	.661	*Valid*
19	I can realise immediately when I lose my temper as technical education graduate	.683	*Valid*
20	I can easily suppress my anger to achieve my goals as technical education graduate	.678	*Valid*
21	I can control my mood when dealing with client as technical education graduate	.738	*Valid*

22	I am good in directing my negative emotional feelings	.709	*Valid*
23	I have the ability of exhibiting good morals to avoid criticism and blame as a technical education graduate	.690	*Valid*
24	I am straight forward when relating with others as a technical education graduate	.671	*Valid*
25	As a technical education graduate I like to be reliable in all circumstances.	.790	*Valid*
26	I hate cheating and been cheated as a technical education graduate	.745	*Valid*
27	I like transparency in my relationship with others as a technical education graduate.	.727	*Valid*
28	As a technical education graduate I don't trade my integrity for my personal interest.	.692	*Valid*
29	I open up in my affairs to win people's trust as a technical education graduate	.759	*Valid*
30	I like displaying honesty and integrity in my relationship with others as a technical education graduate.	.786	*Valid*
31	I have the ability to listening to others as a technical education graduate	.665	*Valid*
32	I am highly meticulous when in needs of favours as a technical education graduate	.743	*Valid*
33	I like to always be cautious in my relationship with others as a technical education graduate	.779	*Valid*
34	I have the ability to always be cautious in my relationship with friends as a technical education graduate.	.620	*Valid*
35	I like being hard-work as a technical education graduate	.636	*Valid*
36	I need to always be specific as a technical education graduate.	.718	*Valid*
37	I have a motivated mind to achieve goals as a technical education graduate	.636	*Valid*
38	I can easily accept to a new environment as a technical education graduate	.767	*Valid*
39	I can conveniently work with new people effectively as a technical education graduate	.781	*Valid*
40	I have the ability to relate with new people cordially as a technical education graduate	.668	*Valid*
41	I have the ability to adapt to new ideas and demand to initiate action as a technical education graduate	.696	*Valid*
42	I can apply cognitive and non-cognitive skills simultaneously to achieve goals as a technical education graduate	.707	*Valid*
43	I can use little opportunity to achieve higher goals as a technical education graduate	.696	*Valid*
44	I can get things done according to my ways as a technical education graduate	.618	*Valid*
45	I can open up to new ideas, approaches and information as a technical education graduate	.716	*Valid*
46	I admit my mistake for correction as a technical education graduate	.644	*Valid*
47	I am highly optimistic in setting objectives as a technical education graduate	.674	*Valid*
48	I have the ability for one to activate favours no matter how dynamic situation is	.676	*Valid*
49	I have the ability to use available means to make ways in order to succeed as a technical education graduate	.687	*Valid*
C	**Social awareness competencies**		
50	I have the ability to share other people feelings as a technical education graduate	.718	*Valid*
51	I take others difficult situations as mine as a technical education graduate	.595	*Valid*

52	I have feeling of wanting to help when someone is in need as a technical education graduate	.517	*Valid*
53	I have the ability to manifest positive attitude towards others as a technical education graduate	.692	*Valid*
54	I know my capability as a technical education graduate	.704	*Valid*
55	I can work independently to accomplish responsibility as a technical education graduate	.629	*Valid*
56	As a technical education graduate I have the ability to read groups and individual intent behaviour through mutual discussion within group or organization.	.684	*Valid*
57	I can listen in order to understand organizational concept as a technical education graduate	.659	*Valid*
58	As a technical education graduate I can understand organizational priorities	.707	*Valid*
59	I can understand the values of organization within which I am working as a technical education graduate	.650	*Valid*
60	I can work within organizational demands as a technical education graduate	.613	*Valid*
61	I have the ability to listen in order to understand organizational assumption as a technical education graduate	.650	*Valid*
62	I have the ability to understand the values of organization within which I work	.706	*Valid*
D	**Relationship management competencies**		
63	As a technical education graduate I can identify where one needs improvement and motivation	.677	*Valid*
64	I can move others forward toward some vision, goals and strategies as a technical education graduate	.686	*Valid*
65	As a technical education graduate I know the right persons whom to use in developing support	.673	*Valid*
66	I have the ability to motivate others to give their best as a technical education graduate	.737	*Valid*
67	As a technical education graduate I can persuade people to work according to my way	.712	*Valid*
68	I have the ability to advise someone on how to achieve his/her goals as a technical education graduate	.758	*Valid*
69	I have the ability of changing individuals' decision as a technical education graduate.	.746	*Valid*
70	I can interact fluently to express myself when dealing with people as a technical education graduate	.723	*Valid*
71	I have the ability to identify what other person want and use it to influence his/her decision as a technical education graduate	.728	*Valid*
72	I have the ability to change individuals' decision as a technical education graduate	.638	*Valid*
73	I have the ability to communicate fluently to express myself in a crowd as a technical education graduate	.644	*Valid*
74	I can constructively express my frustrations as a technical education graduate	.685	*Valid*
75	I confidently express feelings when seeking for favours as a technical education graduate	.598	*Valid*
76	I can effectively use body language to send a massage as a technical education graduate	.623	*Valid*
77	I have the ability to tackle a complex situation as a technical education graduate	.713	*Valid*
78	I manage conflicts to a level of agreement between dispute parties as a technical education graduate	.704	*Valid*

79	I have the ability to manage others emotional outburst as a technical education graduate	.789	*Valid*
80	I feel irritated by friends unwanted behaviour and be able to redress	.731	*Valid*
81	I listen with keen interest when discussing progressive issues as a technical education graduate	.688	*Valid*
82	I can be able to read someone emotional feelings as a technical education graduate	.814	*Valid*
83	I can identify emotionally intelligent individuals through their emotional dispositions' as a technical education graduate	.673	*Valid*
84	I have the ability to read someone intent behaviour through mutual discussion as a technical education graduate	.764	*Valid*
85	I can initiate important development within organizations as a technical education graduate	.627	*Valid*
86	I can simulate changes for a positive future as a technical education graduate	.661	*Valid*
87	I tune in to people's feelings to move them to agree with my opinion as a technical education graduate	.638	*Valid*
88	I can mutually change others decision to suit my needs as a technical education graduate	.713	*Valid*
89	I can easily identify where change is needed as a technical education graduate	.609	*Valid*
90	I know how to relate with individuals' regardless of their socio-economic status as a technical education graduate	.674	*Valid*
91	I have the ability to improve my relationship with my associates as a technical education graduate	.693	*Valid*
92	I can use values to make appropriate decision as a technical education graduate	.663	*Valid*
93	I have the ability to successfully worked with my colleagues as a technical education graduate	.781	*Valid*
94	I have the ability to relate with subordinates as a technical education graduate	.677	*Valid*
95	I have the ability to motivate others to partners with for progress as a technical education graduate	.747	*Valid*

The table5.1 above shows the summary of the factor loading. The data reveals that 95 items had factor loadings that ranged from 0.598 to 0.790 and were above the factor loading of 0.50 at 10% over lapping variance with one component. The 95 items loading on one component represented the four components of conceptual model of Daniel Goleman (2002) of self-awareness, self-regulation, social awareness and relationship management. The strength of one component and the conceptual parsimony of the 95 items that loaded on the first component indicated that the 95 items were valid for the development of emotional intelligence competency scale (EICS) as a skills for employment in technical education in northern Nigeria. In general, 95 items are valid enough to be included in the emotional intelligence competency scale as a skills for employment in technical education in northern Nigeria. This finding agreed with Bakare (2014), Schutte et al. (1997), Giachino and Gallington (1977) that if content has no components of non – loading items, it is assumed that the factorial validity of the tasks or content is high.

Table 5.2: Reliability Statistics

SN	Dimension/Construct	Cronbach's Alpha	Items
A	**Self-Awareness Competency**	0.867	17
B	**Self-Regulation Competency**	0.809	32
C	**Social-Awareness Competency**	0.832	13
D	**Relationship Management Competency**	0.913	33
	Total (Overall)	**0.958**	**95**

The result of the analysis as presented in Table 5.2 shown the items' Cronbach's Alpha reliability coefficients of 0.867 for Self-Awareness Competency, 0.809 for Self-Regulation Competency, 0.832 for Social-Awareness Competency and 0.913 for Relationship Management Competency respectively. This parameters are considered satisfactory reliability because according to Hair, Anderson, Tatham & Black (1995) and Cohen et al. (2010), a Cronbach's alpha scale of at least 0.70 is acceptable for the internal consistency reliability of the items and can therefore be accepted for study's purpose. These criteria served as the guidelines in interpreting the internal consistency-reliability coefficients in this research.

6. Conclusion

Based on the literature review, the study identified the need for the development of precise instrument to measure emotional intelligence competencies as a skills requirement for the employment of technical education graduates in northern Nigeria, due to the absence of precise instrument for measuring emotional intelligence competency of technical education graduate in northern Nigeria, and that cause high rate of unemployment among the graduates. In consequence, the study successfully developed and validated the emotional intelligence competency scale and the scale which were found valid and reliable. Thus it could be considered for use in assessing emotional intelligence competencies as needed for employment of technical education graduates in northern Nigeria. Furthermore, the emotional intelligence competency scale developed should be used as a skills for employment of technical education graduates. It's also recommended that, the developed emotional intelligence competency scale should be employed to use in schools and training centres for retrain technical education graduates and interested individuals at skill acquisition centres in northern Nigeria and the country at large.

References

Afolabi, O. A. (2017). Indigenous Emotional Intelligence Scale: Development and Validation. Psychology thought, 10(1), 138-154.

Awang, H., Yusof, Y, Mohd Faiz, N. S., Ab Rahman, A. and Warman, S. (2017). Emotional Intelligence and Commitment of Vocational Teachers. Pertanika Journal Social Science & Humanities, 25 (S): 157 – 162.

Azodo, A. P. (2014). Attitude influence on performance in technical skill acquisition among formal technical trainees. International Journal of Research Studies in Education, 3(5), 103-112.

Anaekwe, M.C. (2007). Basic Research Methods and Statistics in Education and Social Sciences. Onitsha, Ng: Sofie Publicity and Printry Ltd.

Backstein, D., Agnidis, Z., Sadhu, R., & MacRae, H. (2005). Effectiveness of repeated video feedback in the acquisition of a surgical technical skill. Canadian Journal of Surgery, 48(3), 195.

Bakare, J., Orji, C. T., & Nwefuru, B. C. (2018). Development and Factorial Validation of Cell Phone Maintenance Training Modules. International Journal of u-and e-Service, Science and Technology, 11(4), 1-16.

Boyatzis, R. E., & Sala, F. (2004). Assessing emotional intelligence competencies. The measurement of emotional intelligence, 147-180.

Biddix, J. P. (2006). The power of "estudentprotest": A study of electronically enhanced student activism. University of Missouri-Saint Louis.

Brasseur, S., Grégoire, J., Bourdu, R., & Mikolajczak, M. (2013). the profile of emotional competence (PEC): Development and validation of a self-reported measure that fits dimensions of emotional competence theory. Plos one, 8(5), e62635.

Comfort, C. (2012). Vocational technical education in Nigeria: Challenges and the way forward. Business Management Dynamics, 2(6), 1.

Coetzee, M., & Beukes, C. J. (2010). Employability, emotional intelligence and career preparation support satisfaction among adolescents in the school-to-work transition phase. Journal of Psychology in Africa, 20(3), 439-446.

Egbedion, L. (2010). Being a top class: the role of emotional intelligence. Retrieved on 19/5/2022 from www.m8globalgroup.com.

Giachino, J. W., & Gallington, R. O. (1977). Course construction in Industrial arts. Vocational and Technical Education (4th Ed), Alsip Illinois US A: American Technical Publishers, Inc.

Goleman, D., Boyatzis, R., & McKee, A. (2002). Emotional intelligence leadership competencies. Boyatzis, R, E., Goleman, D. y Rhee, K., The New Leaders, London, Little Brown, págs, 253.

Marino, C., Gini, G., Vieno, A., & Spada, M. M. (2018). A comprehensive meta-analysis on problematic Facebook use. Computers in Human Behavior, 83, 262-277.

National Board for Technical Education (2004). Curriculum for Technical Colleges Kaduna: NBTE Press.

Nezhad, H., Marjani, M., & Najafi, A., (2015). A study on Relationship between Emotional intelligence and Entrepreneurship Trainees in Vocational Technical Education. Management Science Letters 5(5). 501-506

Odo, J. U., Okafor, W. C., Odo, A. L., Ejikeugwu, L. N., & Ugwuoke, C. N. (2017). Technical Education--The Key to Sustainable Technological Development. Universal Journal of Educational Research, 5(11), 1878-1884.

Ogwo B.A & Oranu R.N, (2006). Methodology in formal and non-formal education technical / vocational education. (First edition) 47 Edozien Street, Uwani Enugu; Ijejas Printers& Publishers Company.

Omar, N. H., Manaf, A. A., Mohd, R. H., Kassim, A. C., & Aziz, K. A. (2012). Graduates' employability skills based on current job demand through electronic advertisement. Asian Social Science, 8(9), 103.

Ranganath, D. (2011). Development and Validation of an Instrument for measuring the Emotional Intelligence of Individuals in the Work Environment–In the Indian Context R. Krishnaveni PSG Institute of Management, India. International Journal, 7(2), 94-108.

Rasul M, S., Rauf, R, A, A., & Mansor, A, N., (2013). Employability skill indicator as perceive by manufacturing employers; Asian Social science, 9(8), 42. Retrieved on 26/11/2019 from google scholar.

Schuh, J. H., Biddix, J. P., Dean, L. A., & Kinzie, J. (2016). Assessment in student affairs. John Wiley & Sons.

Scott-Webber, L., Konyndyk, R., French, R., & French, J. (2018). Significant results. Space makes a difference increasing student academic engagement levels. European Scientific Journal, 14(16), 1857-7881.

Suarta, I. M., Suwintana, I. K., Sudhana, I. F. P., & Hariyanti, N. K. D. (2017, September). Employability skills required by the 21st century workplace: A literature review of labor market demand. In International Conference on Technology and Vocational Teachers (ICTVT 2017). Atlantis Press.

Shi, J., & Wang, L. (2007). Validation of emotional intelligence scale in Chinese university students. Personality and Individual Differences, 43(2), 377-387.

Udoudo, N. J. (2014) Development and Factorial Validation of Emotional Intelligence Inventory for Mechanical Technology Occupations in South-south, Nigeria. An Unpublished Ph.D. Thesis, University of Nigeria, Nsukka

UNESCO. International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC) Infocus Programme on Skills, Knowledge and Employability. (2002). Technical and vocational education and training for the twenty-first century: UNESCO and ILO recommendations.

Talentsmarts Inc. (2011). Emotional intelligence appraisal. Retrieved on 12/07/2022 from www.talentsmarts.org.

Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. Computers in human behavior, 72, 577-588.

Zeidner, M., Matthews, G., & Roberts, R. D. (2004). Emotional intelligence in the workplace: A critical review. Applied Psychology, 53(3), 371-399.

Zhou, Y. (2019). A mixed methods model of scale development and validation analysis. Measurement: Interdisciplinary Research and Perspectives, 17(1), 38-47.

Biography

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