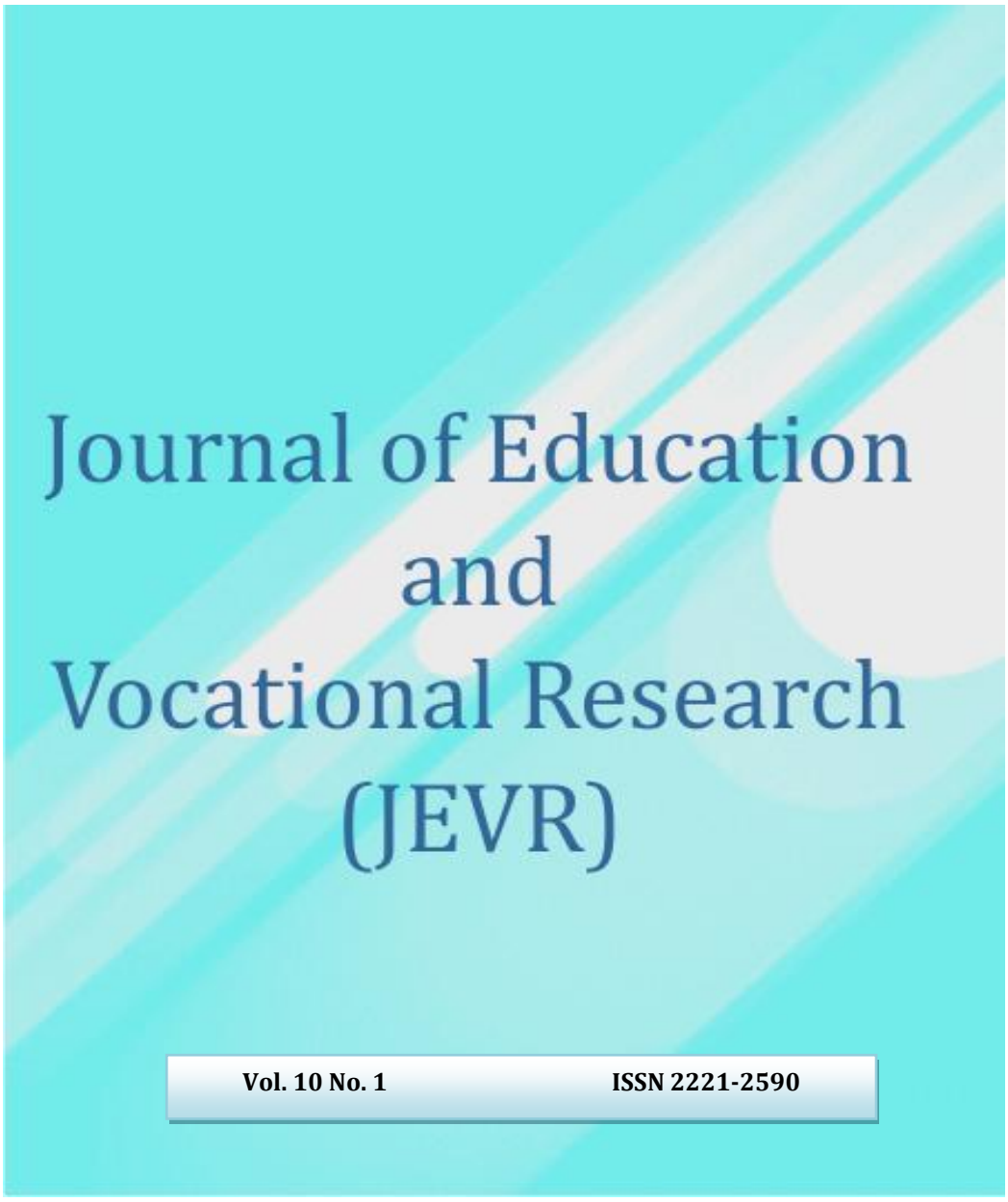

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Editorial

Journal of Education and Vocational Research (JEVR) provides an avenue for quality research in the ever-changing fields of Education and Vocational Research and related disciplines. Work submitted for publication consideration should not be limited by any narrow conceptualization of education and vocational research but comprises interdisciplinary and multi-facet approaches to education and vocational theories and practices as well as general transformations in the fields. The scope of the JEVR includes: subjects of educational technology, educational administration, educational planning, measurement and evaluation in education, developmental psychology, special education, distance learning, vocational education, technology-based learning, environmental education, business education, educational psychology, physical education, innovation, vocational training, knowledge management. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal and that all listed authors approve its submission to JEVR. It is JEVR policy to welcome submissions for consideration, which are original, and not under consideration for publication by another journal at the same time. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. The current issue of JEVR comprises of papers of scholars from Pakistan, Indonesia, Nigeria and Zimbabwe. Teacher's job security and workload factors affecting job satisfaction, cognitive apprenticeship improves self efficacy, the effect of implementing–problem based learning on the result of students' learning, school plant facility and maintenance & competency of teachers who completed in-service teachers training program in inclusive education are some of the major practices and concepts examined in these studies. Journal received research submission related to all aspects of major themes and tracks. All the submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer-reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity for the purpose. The current issue will, therefore, be a unique offer, where scholars will be able to appreciate the latest results in their field of expertise and to acquire additional knowledge in other relevant fields.

Editor In Chief

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Journal of Education and Vocational Research (JEVR)
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Teacher's Job Security and Workload Factors Affecting Job Satisfaction of Teachers in Multan (Southern Punjab)–Pakistan

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Abstract: The educational system in any country plays a vital role for the development and achieving infrastructural goals. Pakistan since last few decades is facing critical economic and developmental challenges. The nature of work conditions in public and private organizations are getting more intensified and employees are facing critical time in term of workload, job security and satisfaction issues. This study is aiming to investigate the relationship between job security and workload factors influencing teacher's job satisfaction. This paper has use SMART-PLS-SEM to examine the data using quantitative research techniques. The study was conducted among 266 teachers. The teachers' job satisfaction was determined by two separate measures namely the teacher's job security and workload influencing teacher's job satisfaction. This study was trigged as teachers in higher education institutions were facing challenges regarding their job security and workload. The outcome exposed that there is an important relationship among teachers job security, workload, and teacher job satisfaction. The effects of these factors call further research. There is prerequisite to carry out a similar but comparative study in rural settings. In addition, it is very important to comprehend the significance of teachers' job satisfaction where the industry is so uncertain. There is a need to address job satisfaction and workload stress with appropriate assessment such as rating system and teachers' satisfaction index evaluation according to the tasks and work pressure allocated to each and every teacher. This reach adds value to knowledge by making universities, institutes and colleges administration to know the causes of teachers' uncomfortable zone regarding their job security and workload. Conversely, it is also important for the administration in these institutes to well understand the needs and demands of their teachers and what factors will contribute to their satisfaction.

Keywords: *Teachers job satisfaction, workload, and job security.*

1. Introduction

HR is the most valuable asset of any institution. There is the cornerstone of any working place. The educational sector is the most important sector to be considered in our economy. Teachers have an important role in building the financial structure of our economy so the responsibility of state to encourage teachers for their profession through incentive or different enticement (Wiley, 2001). Level of employee satisfaction is one of the ways that make the organization successful. The success of education system depends on the contribution of academics (Yee, 2018). They are the main source of any society for encouraging the nation bringing the children and youth of any nation towards positive as well as prosperous sides. Teachers become dissatisfied if they are not compensating with appreciation, recognition, security, salary, and self-respect (Haq & Hussain, 2014). Teacher's satisfaction is a sort of universal problem (Cheng, 2002). The most dangerous factor for all the professions is dissatisfaction. And it is even more miserable if it is in the profession of teaching (Dogan, 2016). The most crucial thing is to be satisfied with your job and environment or place where you are working. Worker performance is the main thing that does promote their value as well as attitudes.

The aims of this study to investigate all factors (workload, job security,) which could influence teacher's job satisfaction among private and public institutes in South Punjab-Pakistan. Therefore the research objectives of this paper are:

- To examine the relationship between job security and teachers job satisfaction.
- To examine the relationship between workload and teacher's job satisfaction.

The educational structure in Pakistan is undergoing an organizational revolution in response to change in the technological, economic and cultural realms. The Public and private institution gives the same quality of service to the student with reasonable prices for them. Academics staff will lay more effect on working, and it

will help the organization to produce more and higher quality employee graduates (Yee, 2018). Moreover, Hameed, Ahmed-Baig, and Cacheiro-González, (2019), informed that there are multiple reasons for teacher's job satisfaction which include recognition, responsibility, achievement, motivation. However, in education industry the most contributing factor to dissatisfaction or satisfaction is teacher's job security (Oshagbemi, 1997) and sense of encouragement and appreciation is also important for teacher's satisfaction (Lankveld, Schoonenboom, Volman, Croiset & Beishuizen, 2017; Hameed, et al. (2019). On the similar note a study conducted on 406 teachers from public sector colleges in the Punjab - Pakistan, found that job satisfaction is largely due to intrinsic motivational reasons, which include recognition, promotions, and opportunities to acquire new skills (Nadim, Chaudhry, Kalyar, & Riaz, 2012). In addition, a survey and interview was conducted on 15 Public university professors in Badin Pakistan found that generally satisfaction or dissatisfaction with their jobs is mainly due to job security, working conditions and coworker relationships (Bhatti, Cheema, Shaikh, Syed & Bashir, 2014).

As the government is Pakistan is now paying more attention towards education, making new policies, introducing more projects to make it clear that "education for everyone". The root of these project starts from schools. If the children or students get the good quality education they become able towards their goals. A good education can be achieved if teachers pay full attention towards their job. The human resource department among educational institutes in Pakistan has great importance and institutes realize its meaning for their performance is rising with the passage of time. Universities and institutes are looking for competitive candidates and provide them market equivalent compensation to retain them and retain them as their satisfied employees. Improve student's academic performance, the institution should be ensuring that academics staff is satisfied with their job and deliver excellent job performance in the class (Yee, 2018).

2. Literature Review

In the 20th century is surrounds of worldwide competition and in this mostly institution are focus to attain the competitive advantage over others (Raza et al., 2015). Many researchers now a day's gives their focus on representing career for technical changes and international trends which produced a stormy natural context. In administration, it's contended that satisfied worker has higher performance. According to Noorshella, (2017) teaching and learning benefits and governess has a significant influence on job satisfaction of academician in public universities.

Job Satisfaction: The organization considers and used many tools for the satisfaction of an employee like as job security, workplace, targets etc. Raza et al. (2015) found that job satisfaction of the teacher is predicted by teacher retention determine of teacher commitment in turn contribution to school effectively. According to Hall, (1996) study less satisfied employee has more intention and tendency to leave the organization. In addition, Ostroff, (1992) proved in his study that satisfied of the teacher was linked with the theoretical accomplishment, organization obligation, throughput, teachers quality work and their performance as well. According to Mueller, et al. (1994); Price, (1997) demographic as well as administrative variable does have an impact on employee's commitment and this close impact is highly related to the job satisfaction of the employee. According to Brkich et al. (2002); Singh and Greenhaus, (2004) when staff skills and knowledge matches the performance then they perform well and also feel satisfied with their jobs. The satisfaction of mind is the right of all employees despite the difference in their cast, worksite, race, and religion. According to Graham and Messner, (1998) job satisfaction is all about measuring an employee assertiveness and session for his job. It is basically the combination of employee's insolvencies about their task. It's about their impression of their tasks and duties.

Job Security: On expectation about continuity in current job situation is job security. It has to do with employee feeling over the lose job or lose of desired job feature such as lack of promotion chances, current working conditions, as well as long-term career opportunities in the employee commitment job security is most important factor. Academics institution job security of teacher is ensured after the appointment of confirmation. In other words, the staff is accorded their tenure status. This means that the teacher cannot be dismissed from the job arbitrarily. Tenure, therefore, give the teacher a sense of job security (Abdullah, 2012). Many researchers have found that job security induce organization commitment of employees (Davy, 1997) investigate that job security significantly relate to employee satisfaction. Iverson (1996) find that job

security has a significant impact on organization commitment. Job security significant has expanded and high light in the previous ten years feedback of employees why they change the organization. Raza et al. (2015) found that academic staff commitment is influenced by various factor but there is two major factors, (i) job security and (ii) job satisfaction. Job security is one's expectation related still in a job situation. Job security is an important part of job commitment (Akpan, 2013). Therefore, the following hypothesis is developed:
Hypothesis #1: There is a significant positive association between job security and job satisfaction among teachers in HEI.

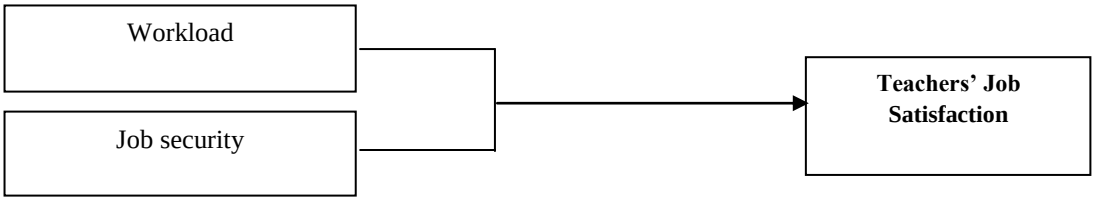
Workload: Employee job satisfaction which work itself play vital role. For gaining competitive advantage company must enhance the employee creativity. This paper reflects that in order to use the inspiration of employee the company must give them challenging, environment, and a variety of tasks. It will also enable the employee to enjoy and have a sense of pleasure about it (Raza et al., 2015). A common problem of a teacher is workload due to leave their job. They are not able to pay attention to their job when teachers are involved in some other activates. Work overload also consist of school duties perform outside the classroom, they work more 40 hours per week. Many teachers work during the summer vacation. Those teachers may teach in summer classes, take other jobs, journey (Çogaltay, & Karadag, 2016). On the basis of the above literature review following hypothesis is developed:
Hypothesis #2: There is a positive association between workload and job satisfaction among teacher in HEI.

3. Research Methodology

The methodology adopted in the research study discussed in this chapter. With that of methodology, Focus is also given to certain issues regarding data collection and sampling techniques. More attention is also given to the designing questionnaires and measuring process of variables. Our study is on the impact of organization factor affecting job satisfaction in the Southern Punjab. The study is an exploratory factors study that magnifies mainly on the identification of that is the response to their job satisfaction. For the research, instrument questionnaires are designed for getting the response of our respondents.

Research Model: To investigate the impact of the relationship between organizational factors provided by the institution to the teacher with that of job satisfaction, a proposed model of research is discussed below. Model research is as:

Figure 1: Conceptual Framework



Unit of Analysis: The unit of analysis is the main entity that is being analyzed in the research. It is the 'what' or 'who' that is being studied. In social science research, typical units of analysis include individuals (most common), groups, social organizations, and social artifacts. In this study unit of analysis are teachers from private universities, colleges, and schools.

Population Frame

Table 1: Population Table

S. No	Name of Private Institute	Private	Public Institute	Total	Percentage (%)
1	Universities	3	13	16	1.0
2	Colleges	1500	200	1700	77.0
3	Schools	5000	1005	6005	272.0
Total Population				**7721**	**350**

Therefore, a total of 266 questionnaires (response rate 81 %) were considered valid and usable to analyze the data Yee (2018). On the other hand, it should be noted that 15 to 20 % minimum response rates in the acceptance rate for the studies conducted in a similar industry; due to the nature of this study. The main problem in such studies is the difficulty to attain the respondents who pertains all the information regarding their institution. Those studies which explore the organizational level, this response rate is quite normal and acceptable.

4. Results and Analysis

Reliability and Validity: From Table 2 is demonstrating outer loadings, AVE, composite reliability, R-square, Cronbach's Alpha, communality, and redundancy. As proposed by Hair et al. (2006), that loading underneath 0.5 should be dropped with an exact end objective to enhance normal change extricated (AVE) esteem. They furthermore explained that dropping qualities below 0.5 are essential to eject errors and mistakes in estimation in this manner enhancing usually speaking SEM display fit. Complying with their recommendation, the researcher dropped the accompanying loading from workload: WL1 (0.073221), WL2 (-0.03922), WL3 (-0.10859), WL4 (-0.066987), WL5 (0.090612) and WL6 (-0.058842).

Table 2: Measurement Model

Variables	Items Codes	Actual Outer Loadings	Outer Loadings After Items Deleted	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
Job Security	JS1	0.983057	0.983057	0.96424	0.996639	0.997793	0.99629	0.964235	0.913586
	JS10	0.98371	0.98371						
	JS2	0.98198	0.98198						
	JS3	0.981776	0.981776						
	JS4	0.981523	0.981523						
	JS5	0.979958	0.979958						
	JS6	0.980426	0.980426						
	JS7	0.983256	0.983256						
	JS8	0.981101	0.981101						
	JS9	0.982825	0.982825						
Job Satisfaction	JSAT1	0.986926	0.986925	0.96425	0.996306		0.99588	0.964249	
	JSAT10	0.980238	0.980238						
	JSAT11	0.981072	0.981071						
	JSAT2	0.981192	0.981193						
	JSAT3	0.981803	0.981802						
	JSAT4	0.979504	0.979504						
	JSAT5	0.980196	0.980196						
	JSAT6	0.984843	0.984842						
	JSAT7	0.980738	0.980737						
	JSAT8	0.982798	0.982799						
	JSAT9	0.982167	0.982168						
Workload	WL1	0.073221	Item Deleted	0.96817	0.991849		0.989042	0.968173	
	WL10	0.984443	0.98491						
	WL2	-0.03922	Item Deleted						
	WL3	-0.10859	Item Deleted						
	WL4	-0.066987	Item Deleted						
	WL5	0.090612	Item Deleted						
	WL6	-0.058842	Item Deleted						
	WL7	0.981123	0.983206						
	WL8	0.982356	0.983007						
	WL9	0.985015	0.984707						

Figure 2: Measurement Model with Actual Loadings

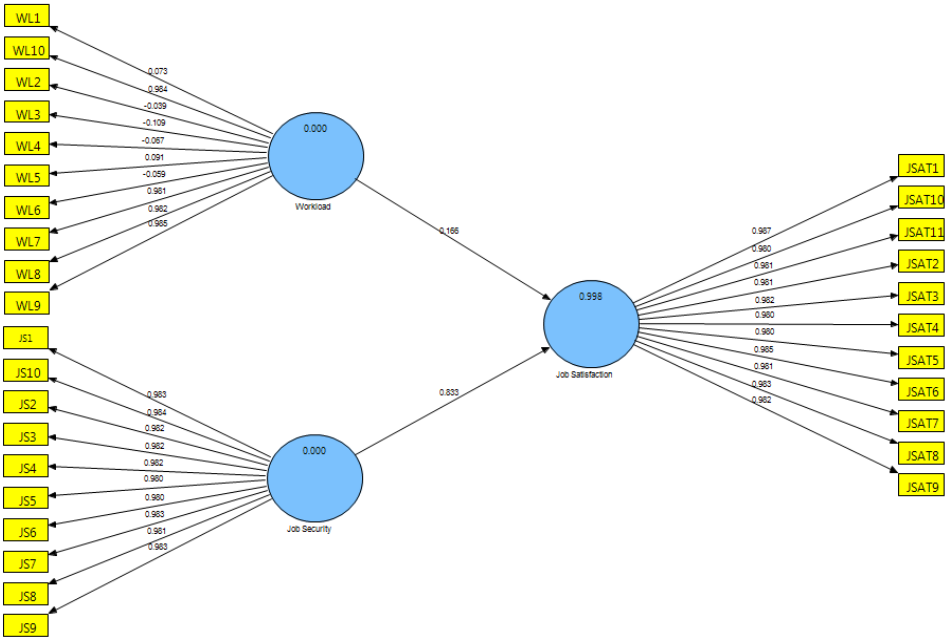
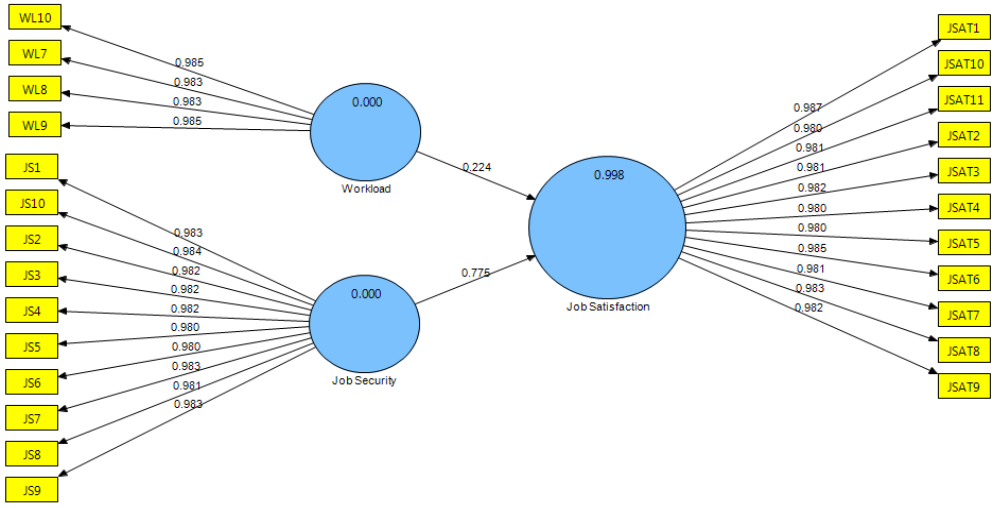


Figure 3: Measurement Model after Loadings Deleted



Hypothesis Testing: In this section, the researcher will look for the answers of the stated research questions proposed above. Which are as follows?

- To investigate the relationship between job security and teacher's job satisfaction.
- To investigate the relationship between workload and teacher's job satisfaction.

H_1: Job Security has a Significant Effect on Job Satisfaction: There is a significant relationship between job security and job satisfaction ($t=5.338868$, $p<0.05$) because t-statistic is greater than 1.96 (refer to the table 3). The relationship between job security and job satisfaction is the positive. Similarly, Dachapalli and Parumasur (2012) confirmed that the opinion of high job security is linked frequency to increase the level of job satisfaction among staffs. When dissatisfaction of job security exists, employees afraid that they may

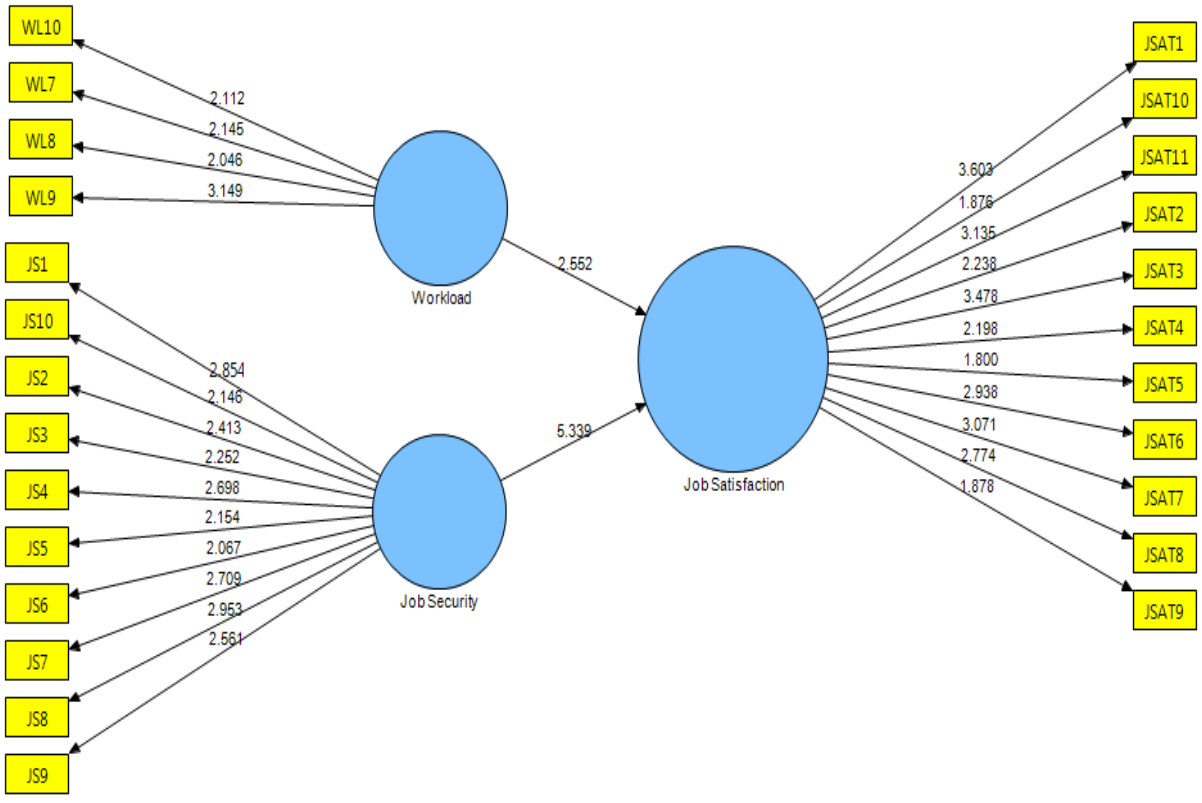
dismiss one day and it will persuade their job satisfaction and less retention to stay at the institution (Sverk, & Naswall, 2002).

H_2: Workload has a Significant Effect on job Satisfaction: There is a significant relationship between workload and job satisfaction (t=2.551566, p<0.05) because t-statistic is more than 1.96 (refer to table 3). Hence, simply conclude that workload significantly influence on job satisfaction. There is a significant relationship between workload and job satisfaction because t-statistic is more than 1.96. Hence, simply conclude that workload significantly influence on job satisfaction. Many researchers find his study that workload teaching and being a teacher could play a role as a satisfier daily target could be classified as factors that increase job satisfaction.

Table 3: Hypothesis Testing

Hypotheses	Relationships	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)	Acceptance / Rejection
H1	Job Security → Job Satisfaction	0.77518	0.635678	0.145196	0.045196	5.338868	Accepted
H2	Workload → Job Satisfaction	0.224321	0.244761	0.087915	0.037915	2.551566	Accepted

Figure 4: Structural Model



Discussion

This investigation of study that job security and job satisfaction has a positive correlation with each other. The institution can provide stability of job for a teacher to constant their satisfaction. In addition, Raza et al. (2015) workload plays a key role in employee job satisfaction. Employee inspiration enhances the company

capability for gaining competitive advantage. On the same job, the employee feels motivated getting the different targets and they appreciate their freedom. There is a significant relationship between workload and job satisfaction because t-statistic is more than 1.96. Hence, simply conclude that workload significantly influence on job satisfaction. Many researchers find his study that workload teaching and being a teacher could play a role as a satisfier daily target could be classified as factors that increase job satisfaction Chipunza and Malo (2017), job satisfaction related to what people do their work such as work itself. The consistent of many studies results that employee is satisfied with their nature and quantity of work.

Contribution of the Study: Contribution of study to the generation of knowledge about institutions and academics professionals of high learning forms base for a similar study suggest strategies that can be adopted in another district of Punjab, and other provinces of Pakistan.

5. Conclusion and Recommendations

Recommendations

On the basis of finding of this study, the researcher suggested the following recommendations:

- A similar study is carried out in a business environment to establish the role of clients in enhancing employee commitment.
- Further research is recommended for the contribution of other social stakeholders in education such as parents and institution management boards and committees.

Conclusion

The conclusion drawn from this study is that workload, job security are better predictors of teacher's job satisfaction. It would be realized that university teachers who experience job satisfaction are expected to exhibit high institutional commitment. The same would be applicable to the lecturer who perceives their job as being secure. Therefore, job security and job satisfaction are two related concepts that affect job attitudes and organizational commitment of the institution of teachers.

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Cognitive Apprenticeship Improves Self Efficacy At Aviation Polytechnic of Surabaya

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Abstract: Internships are a method of connecting learning in schools with actual work powered by experts in the field of work. Self-efficacy skills are very necessary in the world of work. Self efficacy is, a person's belief in carried out their duties. The research purpose determined the effect of cognitive apprenticeship on students self efficacy in Flight Polytechnics. The research method used ANOVA with the experimental and control groups, with 140 research subjects. The results showed the influence of cognitive apprenticeship on self efficacy. Self-efficacy ability is needed in the world of work, because it relates to one's success in doing work. Vocational education aims to prepare a skilled workforce. Internships are a means to bring students closer to the world of work. Soft skills in vocational education must be developed. The apprentice is able to bring the development of soft skills to students. Workers with self-efficacy skills are needed in the industrial era.

Keywords: *Cognitive apprenticeship, self efficacy, vocational education.*

1. Introduction

Vocational education aims to form an expert workforce, also directed at soft skills, and problem solving adapted to the world of work. Internships that have been carried out so far, are still not aligned with the expectations of vocational education goals that are in accordance with the demands of the world of work. The internship activities are expected to be able to develop problem solving skills, soft skills, and the ability to think. The implementation of an internship should be able to harmonize the knowledge and skills that have been obtained in the academy with the world of work. Internships must be designed to be a learning environment in a social context with real tasks guided by experts as partners, and strived for competency and cognitive skills in accordance with real problems (Gessler, 2009). Cognitive apprenticeship is a method that brings students closer to the actual work. Collins, et al. (1987) in Dennen & Burner (2008) define cognitive apprenticeship, namely learning through guided experience in cognitive and metacognitive abilities, not physical, and process. Willemsen & Gainen (1995) recommends cognitive apprenticeship after comparing with seven models of active learning that because this model uses the apprenticeship metaphor of learning skills, where students are not as subjects, to understand the development of a skill. The cognitive apprenticeship method is faced in everyday situations which are rich learning resources where students become part of the community by observing, practicing, and getting help with community activities.

The cognitive apprenticeship method is designed to bring the tacit process (knowledge transfer) indirectly openly, where students can carry out observational activities, enact (implement), and practice with the help of learners and other learners (Collins, 1987). The development of self-ability in vocational education is the main thing. This is related to the interpersonal and soft skills of students in the world of work. Self efficacy is a proven construct of motivation influence choice of individual activities, level of goals, perseverance and performance in various contexts (Zhao, Seibert, & Hills, 2005). Maritz & Brown (2013) showed the results of self-efficacy studies that showed consistent findings, such as have proven relationships with performance and work, including sales of life insurance, productivity of lecturer, research, facing difficult career-related tasks, learning and achievement (Wood and Locke 1987) and the ability to adapt to new technologies. Self efficacy is related to the achievement of academic goals (Wood & Locke, 1987). Some studies have found self-efficacy to be a better predictor of subsequent performance than past behavior (Gist, 1987). Self efficacy has a strong influence on the achievement of one's academic goals and performance. Since self efficacy has three dimensions, namely magnitude apply to the level of difficulty of the task that one believes he can achieve, a force that refers to strong, weak beliefs and generally shows the extent to which expectations are common in all situations (Bandura, A. 1977). Ramey-Gassert, Shroyer, & Staver (1996) explain that self efficacy influences job satisfaction.

2. Method

The research subjects were students at Aviation Polytechnic totaling 140 students. Research time was 5 months. Self efficacy influences the training process (Davis, Fedor, Parsons, & Herold, 2000). The data analysis technique used ANOVA. The procedure for conducting the research was that the research subjects were divided into two groups, cognitive apprenticeship and on-the job training. Research subjects carry out internships at airports that are spread throughout Indonesia that are in accordance with their fields of expertise.

3. Results and Discussion

Cognitive apprenticeship shows that there is a positive influence on the self efficacy of students at Aviation Polytechnic in Surabaya. Self efficacy is self-confidence based on self-assessment relating to one's competence in carrying out their duties. In the cognitive apprenticeship, students are given the widest opportunity to solve problems they face in work practices in accordance with their competencies. In implementing cognitive apprenticeship, students face the real situation where they are part of it, so that they are directly involved. Self efficacy is formed through the environment, where the positive environment can increase self efficacy. A positive environment can improve self-capability. In implementing cognitive apprenticeship, students are faced with the actual work environment by solving problems in their field of work. Students are able to study well because they have good beliefs because they are in accordance with their abilities. In cognitive apprenticeships, students are given the freedom to solve problems encountered in worker training, thus giving rise to confidence. Field instructors act as facilitators and guides (coaching) if students need help. Students with cognitive apprenticeships are given the freedom to use various strategies (heuristic strategies) in their work training process. Then the students control the strategy that used in the problem solving process by reflecting on the processes that have been carried out (Darabi, 2005). In the cognitive apprenticeship model, cognitive scaffolding is directed at encouraging performance independently by reducing assistance to students so that their skills, increase (Willemsen & Gainen, 1995) so as to increase self efficacy.

Scaffolding makes students more active and productive in a variety of learning environments, and with Scaffolding the distribution of the availability of various material and social tools with various abilities to support students in developing ways of various disciplines of knowing, doing and communicating (Reiser & Tabak, 2014). Therefore students would start to be independent and the instructor would reduce their role in solving problems. Self efficacy affects one's performance and will increase when observing someone who is considered to have the same ability to perform tasks successfully (Wolf, 1997). Students when does work training with cognitive apprenticeship they are given flexibility in work practice, seeing friends succeed in completing tasks, the others have more trust in being able to complete tasks well. Completion of tasks is related to achieving goals, where self efficacy is closely related to achieving goals (Potosky, 2010) and is related to expectations (Scunk, 1985). The goal of work training is to improve competence in the field that students are involved in and hope is to get a job in line with its competence. These goals and expectations make students take each internship activity seriously and confidently in carrying out their assigned tasks. Therefore, students are confident in thinking, acting, and motivated in all activities during the internship. Bandura explained that self efficacy is how someone believes in thinking, acting and feeling in all aspects of his life (Ritten, Boone, & Rubba, 2001). Self efficacy that is owned by someone will lead to its performance (Lisbona, Palaci, Salanova, & Frese, 2018). Cheah, Li, & Ho (2019) explained that self efficacy is related to sustainable performance.

4. Conclusion

The cognitive apprenticeship method has shown an influence on student self efficacy. With self-efficacy capabilities, it is expected that they have soft skills that are useful in the job. Vocational education aims to prepare skilled workers in their fields of expertise. Internships are learning that is in the work environment in fact, where learning with experts, so students will learn faster and know the tasks that must be done when they work. The cognitive apprenticeship method is faced in everyday situations which are rich learning resources where students become part of the community by observing, practicing, and getting help with

community activities. The implementation of an internship in vocational education must be directed at improving student attitudes. The competency of a worker is not only in knowledge and skills, but attitudes must be considered.

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The Effect of Implementing-Problem Based Learning on the Result of Students' Learning at School

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Abstract: After natural disasters, such as earthquakes, the community and schools' conditions were uncontrolled and unconducive. Students could not carry out the learning process as before. Anxiety and fear came to students when in school. This study explained about the implementation of problem based learning on students at a shelter school after earthquake and the effect towards their learning outcomes. This study aimed to know the effect of problem-based learning on students' learning outcomes after an earthquake happened. Problem based learning brought students closer to the problematic context. This research compared the effect of problem based learning as well as the conventional teaching on 2different groups from different emergency schools. The total number of the subject research was 120 students. The results of the study showed a positive influence on students' learning outcomes. In the learning process of problem based learning, students were brought closer to real problems in their environment and fostered a sense of confidence.

Keywords: *Problem based learning, learning outcomes, emergency schools.*

1. Introduction

The condition of Lombok Island after the earthquake that occurred on July 29, 2018, with strength of 6.4 on the Richter scale, in general all learning activities were stopped, when the learning process run in an emergency it became ineffectively. Students were still overcome with anxiety and also the teachers. Bandura explained that a person was influenced by the environment, and people (Schunk, 2011). The condition of the learning environment was full of limitations, making students unable to study well. It was necessary to create a learning environment by adjusting the situation in which students were located. The choice of the right learning method that was adapted to the characteristics of students and the environment was very important. Environmental conditions where students were still in disaster, with various social problems that exist. The method of problem based learning was a constructivist model that was based on cognitive and social interactions from a problem-focused environment (Selçuk, 2010). In this method, students participated in learning by learning material and skills in solving problems by involving themselves in real life (Arends, 2009). In the field of citizenship studies, students really needed to be involved in the process of solving real problems that occurred. With the environmental conditions of students in disaster emergencies, it could be used as a real laboratory in learning. Problem based learning was an active learning in small groups, with problems that were used as stimuli for learning (Colliver, 2000). Selçuk (2010) explained that in problem based learning, students carried out explorations that were begun by considering problems and proceeding with discussions with peers with tutorial groups, and trying to identify the basic principles.

Problem based learning bridge between the learning process that happened in the school with the real life. In its process, the students were encouraged to collaborate and get the internship element in which they will do a dialogue with the interviewee (Arends, 2009). Problem based learning help the students to increase their confidence and thinking ability (Santrock, 2010). Problem based learning could focus students on learning environment and its empowerment in the learning process. Albanese & Mitchell (1993) stated that as quoted from that problem based learning was very close to contextual teaching learning which consists of three stages, namely context, information and working together. Hun, Moallem, & Dabbagh (2019) stated that learning was a social-internal reciprocal construct. Learning in problem based learning lied in authentic real-life problems. The use of the environment in learning with existing problems would be able to create knowledge construction.

2. Method

This research was conducted in East Lombok Regency, Lombok Island. The research method that was used in this research was quasi experimental by comparing two groups of students that used problem based learning

and traditional learning. Research subjects were 120 students in two schools. This research was carried out one month after a major earthquake hit the island of Lombok, and two weeks after the normal learning activity entered. While expository teaching created a fairly passive role for students the researcher observed for one week with the aim of calming and conditioning students. This research was conducted for three weeks.

3. Results and Discussion

The results obtained from this study indicated that the problem based learning model could provide a more effective influence on learning outcomes. Hmelo-SilverEmail (2004) in his article described PBL as a teaching approach that offered a prospective to help students developed flexible understanding and lifelong learning skills. Problem based learning used to support the students in improving flexible knowledge, effective problem solving skills, collaborative skills, and intrinsic motivation (Hmelo-SilverEmail, 2004). Students who learned to use problem based learning could demonstrate better clinical problem solving skills (Savery, 2018). Problem based learning increased intrinsic interest in the subject matter and the learning skills directly, and this increase could be maintained (Norman & Schmidt, 1992). PBL produced exam performance that was better than traditional models, and significantly results in examinations(McParland, Noble, & Livingston, 2004). Who were expected to receive information and reproduced them at some points (Swaak, Jong, & Joolingen, 2004).Learning would be more successful if they were given the opportunity to explain or clarify ideas (Zakaria, Chin, & Daud, 2010). Problem based learning method was a learning model that activates students in learning. Students with PBL achieved higher test scores when it is compared to those in the traditional curriculum (McParland, Noble, & Livingston, 2004). Dochy, Segers, Bossche, & Gijbels (2003) showed the results of a meta-analysis of the effects of PBL that showed a positive effect on knowledge skills and applications compared to traditional curricula. The result of this study showed that the students who using problem based learning were able to achieve their learning goal. It can be identified from their learning outcomes because they were able to connect the material with the real life.

Critical thinking, metacognitive self-regulation regulatory efforts, and peer learning students with problem based learning, learning felt being treated as professionals adult who were developing effective and clinically relevant learning skills and which were useful in solving very important problems in their lives, and respecting interpersonal skills (Kilroy, 2004). Problem based learning provided simultaneous support in achieving the goal of making students as scientists, using realistic, unstructured problems, and focusing on metacognitive skills, where students would feel responsible (Gallagher, Sher, Stepien, & Workman, 1995). Konings, Wiers, Wiel, & Schmidt (2005) stated that there was a possibility that a positive effect could occur because the students could avoid an uncertain feeling and implemented problem based learning-related skills which were really necessary for becoming individuals that are empowered psychologically if problem based learning was implemented for a long time. Problem based learning had some effects (a) students found problem based learning more nurturing and enjoyable than conventional learning, and (b) students performed better than conventional learning (Gijbels, Dochy, Bossche, & Segers, 2005). Problem based learning ensued active learning when students individually or collaboratively solving problems. Problem based learning provided an approach that was more challenging, motivating and enjoyable for education (Norman & Schmidt, 1992). Learning problem based learning supported in developing various soft skills such as research skills negotiation and teamwork reading writing and oral communication (Allen, Donham, & Bernhardt, 2011). With problem based learning learning, students felt facilitated in learning, and encourage independent and active learning. So, the attitude of students in the learning process became more positive which had an impact on improving their learning achievement.

4. Conclusion

Problem based learning had a positive effect on students' learning outcomes in post-disaster areas. In problem based learning, students learned through real problems in their environment. Students showed activity in the learning process, gain self-confidence, and more motivated to learn. Giving trust to students in the problem solving process made students actively participated in learning. The role of the teacher in the mentoring process was very large to foster the interest and activeness of students in the process of thinking in solving problems.

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School Plant Facility and Maintenance: A Necessity Effective Teaching and Learning in Technical Vocational Education and Training

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Abstract: Since Technical Vocational Education and Training (TVET) is all about skill acquisition in order to prepare learners to fit into the world of work and become self- reliant, the curriculum for such training has to involve the use of adequate provision of necessary facilities called school plant in order to achieve effective teaching and learning. The purpose of this paper is to affirm the need for adequate facilities in a Technical and Vocational Institution, and the necessity to have a good maintenance structure in place in order to achieve the desired objectives and enhance the life span of the facilities. This paper also looked a tissue of challenges facing the maintenance of these facilities in Technical and Vocational Educational institutions in Nigeria. Conclusions were made looking at suggestions in order to achieve adequacy in the provisions of facilities such as machines, workshops, equipment and tools in Technical and Vocational schools which can effectively enhance teaching and learning and by extension provide economic growth in any nation.

Keywords: *Technical Vocational Education and Training, Teaching and Learning, School Plant Facilities, and Maintenance.*

1. Introduction

Education is an important mechanism useful for the growth and development of any country. This assertion has been proven beyond doubt when we look at the roles played by people who are educated in developing major areas in the sciences, social, economic and political structure which in turn has improved the lives of many individuals and households and hence, providing a conducive environment to live in. Aloga (2014) stated that because of these educational values, technical education need to be able to prepare individuals in the 21st century to effectively function. However, it is unfortunate that Technical and Vocational schools in Nigerian are ready at least to handle new practices and rapid rise in information in the area technical education which keeps improving on a day to day basis because of challenges of inadequate funding to develop infrastructure and those that result from teachers industrial actions, lack of machines and equipment, and even lack of a well - equipped workshops especially in Technical and Vocational Educational institutions. Audu, Kamin and Balash (2013) posited that the primary aim of all TVET program is to acquire aptitudes for gainful employment and skills needed to be employable in a specified area or occupation, it can either be paid or self-employment. Developing a link between employment (paid or self) and TVET forms the basis of the optimal approach and practice perceived throughout the world.

One aspect that is most significant in TVET tended towards acquisition of employable skills in order for the learners to be ready for the world of work, hence teaching delivery systems ought to be in a conducive, place for developing the skills of the work force to improve their economic situation and create employment for the youths. Technical vocational education and training (TVET) is used as a comprehensive term that refers specific educational process that involve understanding and knowledge that relates to occupations in different sectors of social and economic life, acquiring practical skills, studying of technology and related sciences and general education. It can be referred to further as: (i) a technique that assist in alleviating poverty; (ii) a tool to promote environmental and sustainable development; (iii) aspect of life-long learning and preparation to be responsible citizens; (iv), means of preparing for jobs and effectiveness in the work place; and (v) a means of facilitating poverty alleviation (UNESCO & ILO, 2007). The Federal Republic of Nigeria (FRN) (2013) defined Technical and vocational education and training as facet of education geared towards skill acquisition in addition to the basic knowledge. Maclean and Wilson (2009) defined TVET as a planned program of courses and learning experiences that begins with exploration of career options, supports basic academic and life skills, and enables achievement of high academic standards, leadership, preparation for industry-defined work, and advanced and continuing education.

Hence, Enyekit and Enyenili (2007) stated that although technical and training involves a teaching and learning process, it also assist learners in preparing for employment that require specialized knowledge that, is needed by society which can be best carried out in schools. It is concerned with a series of jobs that require specialized personnel whose preparation is short. It includes within the labor force a spectrum of professional and semi-skilled professionals. The TVET is unique in that the environment needed for the program to be effective is one where the student can imagine, create, design, repair, disassemble, construct, test and experiment is a necessary provision (Ezeji, 1998). This implies that workshop which is active is fundamental to the study of TVET programs since TVET is a mechanism where the workforce skills, its effective provision can only be made possible with a well-equipped school plant and facilities.

2. The Concept of School Plant and Facilities in TVET

The school plant consist of all facilities put in place in the Technical and Vocational school environment in order to enhance teaching and learning process and to achieve the desired objectives. Ezeji (1998) defined facilities as it relates to TVET, to include the tools, machines and supplies which stimulate an industrial environment in an education setting. Facilities include the physical plan (workshop building), equipment selection and organization. School plan as defined by Aloga (2014), is "the site, building, equipment and all the facilities within the school which enhance the teaching and learning activities and at the same time protects the physical well-being of the teachers and learners from rain, sunshine and other environmental hazards". Olaitan (1998) stated that the school plants can be seen to be made up of basic structures and systems that a technical and vocational institution or school needs to effectively function and accomplish the goal for which it was established. This paper however, defines school plant and facilities as the totality of all the requirements required to mount and run any TVET program. These include the workshop/laboratories buildings, tools and equipment, machines, personnel and the systems devised to facilitate a smooth, efficient and effective use of the buildings; tools and equipment; as well as personnel to set up the stage for learning.

Olaitan (1998) added that school plants and facilities include: water supply infrastructures (tanks, deep well water, borehole, pipe borne water); electrical infrastructure (generator, overhead electrical conductor lines, air conditioners, fans, electrical fittings); library (magazines, journals, stationary, textbooks); secretarial machines (vehicles and computers); (staff furniture, classroom/office); equipment (machines/tools workshop, laboratory/workshop); building (equipment, office blocks, assembly halls, staff quarters, hostels, workshops, laboratories, libraries and classroom blocks). Similarly, Aloga (2014) stated that for effective teaching and learning situation, school building and educational goals, should be viewed as being interwoven, for example school library should be seen as a learning laboratory par excellence where learners find the world of knowledge, interact directly with resources, acquire information and develop research skill for lifelong learning, hence it represents the totality and message of the entire environment for realizing school goals and objectives. Khan (2016) listed the school plant facilities relevant to effective teaching and learning in TVET to include: a well-ventilated and quality lighted students classroom, subject room, school library, staff room, staff common room, Principal/Head of school office, student laboratory, school workshop, tools, equipment, maintenance office, students hostel, generator room, toilet/bathroom, reading room, car parking area, school hall, school bus, student playground, health centre, student cafeteria.

But Knerzervich (1975) emphasized that school plant is an essential part of the school facilities by reiterating that it is the avenue to interpret what has been learnt theoretically. In constructing and arranging helps the school curriculum physically express the theories. This provides an environment to improve the learning and teaching process as well as protect the occupant's physical wellbeing. Knerzervich added that learning and teaching doesn't just happen by itself, school facilities provide meaning to planned curriculum and extracurricular activities. The nature and types of the educational program to be offered in any technical and vocational institution will also ascertain the type and nature of the school plant to be devised. In Olaitan (1998) stated that students and teachers both need a place to record, experiment, think, listen, view, interact, confer, write, read and search, hence a school plant becomes inevitable; more so, that student also need place to conduct the affairs of students or social gatherings while teachers need require facilities to prepare teachers presentation, diagnose student needs, conference room for team planning and office space. Unruh

further added that new innovations in the learning-teaching process moves beyond reading towards how to involve students in the application, evaluating, synthesizing and analyzing knowledge gained, stressing the need for a flexible space in the school.

Relevance of School Plant: TVET emphasizes the acquisition of skills for useful and gainful employment and eradication of poverty. In this realization FRN (2013) articulated the objectives of TVET as follows: (i) provide training and improve the skills of individuals to be economically self-reliant; (ii) to instill vocational skills and technical knowledge needed for economic and agricultural development; and (iii) to provide trained manpower in the applied sciences technology and business particularly at craft, advanced craft and technical levels. The dynamic nature of the social and academic environment required the school plant should be designed with emphasis on flexibility. Towards the realization of these laudable objectives of TVET, Uzodimma (1996) posited that the following should be ensured:

- Conditions of instruction should compare favorable with desirable conditions in the occupations concerned;
- Real jobs should provide the laboratory for vocational education;
- Instructions should be available to those who need, want and can profit by it;
- TVET instructions should be based on occupational needs;
- Standards should be as high as or higher than those in the occupations concerned;
- Equipment and environment should be the exact replica of the industry; and
- Instructional programs should be characterized by flexibility.

Emphasizing the relevance of school plant and facilities in Ezeji (1998) asserted that the learning process of students is greatly enhanced where there is an environment they can actively explore. They added that school plant and facilities are significant to activities in the community such as conference, sports, meetings, youth clubs, home economic centres, adult education and extra-moral classes, hence, school plant and its environment is vital in achieving educational goals. Olaitan (1998) stated that school curriculum should be linked to educational facilities, given the point that school plant helps to interpret the school curriculum. It was stated further that the school programs conveyed via the school design, arrangement, playgrounds, building and site and also that designing a well-functioning school building with a wide range of teaching materials and tools provide efficient delivery of the school curriculum and impact positively on academic performance.

3. Facilities in TVET Institutions in Nigeria

To ease professional training that will lead to the acquisition of practical skills, knowledge as well as attitude relevant to the needs of the world of work, requires the provision of instructional facilities. To this end, in Nwachukwu (2012) stressed that there is definite need for provision of adequate facilities in every technical and vocational institutions since they are designed to serve specific purposes in the teaching and learning processes. This is because without these facilities the learners may not be able to experiment, test, construct, disassemble, repair, design, create, imagine and study. Stated that school plants and facilities are employed to explain theories and offer first hand opportunity for experiences; develop scientific aptitudes and skills; for inquiry and observation; to offer diversity in thoughts; for scientific discovery and investigation; and for demonstration and experimentation. School plants and facilities are employed to increase instructional effectiveness; improve the cleanness, orderliness and safety of facilities; reduce the operational cost and life cycle cost of a building; extend the useful life of a building; increase efficiency and effectiveness of the staff and students; improve building appearance; and use data collection and analyses for decision making. Oviawe and Uwameiye (2010) posited that the level of inadequacy of instructional materials in technical institutions is alarming and that the few available materials in those institutions are abused and mismanaged. An effective index for evaluating standards and quality in TVET is the availability, condition and proper utilization of educational facilities for learning. This situation calls for an appropriate facilities maintenance approach that will utilize material resources for the benefit of learners, TVET institutions and the world of work.

Providing Adequate Facilities: Inadequate facility for TVET is as good as not implementing the curriculum to achieve the desired objectives of the institution and hence effective teaching and learning to prepare the

learner, for the world of work and become self- reliant becomes a mirage. In Olaitan (1998) maintained that the general atmosphere and lack of facilities has a direct impact on the quality of education learners get. Where there is inadequate facility, instructors will be ill-equipped to perform their duties well hence the quality of learning will be low. It is therefore important to provide adequate facilities for effective teaching and learning. Some of the avenues to providing adequate facilities TVET among others are from:

Government: Federal, state and Local government should provide adequate funds to purchase and equip the schools. There should be special budget for such.

Parent/Teachers Association: They can also make contributions to provide adequate facilities for the schools.

Old Boys/Girls Association: They can be called upon to assist schools in the area of providing adequate facilities. They would love to give back to their former school.

Corporate Organizations: They can be contacted to assist as their corporate social responsibility in the environment where they carry out their businesses.

Industries: They can be approached to not only partner with TVET schools for practical attachment for students but can also be made to assist in providing such facilities to the schools. The effective running of a workshop/laboratory entails some activities fundamental for the smooth maintenance of materials, equipment and personnel involved in the use of the workshop. These activities according to Akinyemi (2013) are: inventory and record; and maintenance services. Inventory and record: the effectiveness of administrative procedures is dependent on the kinds and system of inventory control and records kept. These are administrative activities carried out in all TVET workshops/laboratories. The record of equipment's, tools and supplies should be accurately kept by all school teachers. In addition, adequate records kept will assist teachers in carrying out their duties and it will prove also as a way to ascertain what is on ground as against the records. The teacher can better account properly to the school authorities when the need arises. In aiding management of resources, taking and keeping an inventory of materials and equipment keeps the teacher conscious of the tools that are lost, broken, or out for repairs, and the supplies that are lost or needed (Inyiagu, 2014). Maintenance services: this must not be neglected since it helps to keep tools and equipment in good working state always. The reasons for maintaining tools and equipment in first class condition are to: (i) promote a high degree of efficiency; (ii) maintain safe working conditions; and (iii) keep cost of operations low and prolong the life of equipment (Inyiagu, 2014).

4. Maintenance of Facilities

According to Nwachukwu (2012) maintenance of school plant facilities are generally not taken seriously and attitude towards maintenance has not been impressive as it is said that in Nigeria, people lack maintenance culture. This is so because when new buildings are constructed most of the time and the relevant authorities take over, basically no attention is given to maintaining the buildings and nearly no mind is paid to maintaining such a building and this is usually not factored into planning process. A number of school buildings over 50 years old and have never been renovated or modified despite the changes over the years in the educational system. However, Adesina (2010) opined that educational facilities in Nigerian TVET institutions are neglected. Maintaining facilities is a concern in every level of the educational system which ranges from primary education to the university level. A number of these, facility architecture are obsolete and hence has a limited contribution to education. Maintenance of new buildings, modernizing and renovating of old buildings need significant commitment and expertise of material and human resources.

Most weather conditions are not favorable to certain building materials, equipment and machines coupled with poor maintenance culture commonly are responsible for the deterioration and aging of school buildings, equipment and grounds. Students, teachers and school authorities who regularly make use of school facilities do not have the requisite knowledge in planning the maintenance of facilities, which leads to failure to integrate facility maintenance into the school management. The maintenance of such facilities must be

therefore an integral part of the overall management of the school. The issue of maintaining facilities has not been adequately addressed at various levels of the educational system and the only alternative when issues such as break down is to repair them, whereas prevention they say, is better than cure. Facility maintenance involves: (i) providing adequate facility for learning and teaching therefore should be included in the plan to maintain facilities; (ii) providing clean and safe environment for learning and teaching. There are basically three types of maintenance program called (a) preventive, (b) predictive maintenance and (c) routine, emergency repairs.

Preventive Maintenance: This is done to prevent school facilities breaking down and ensure the performance of the facility is optimal. It involves the use of computers of soft-ware to estimate the failure of equipment using user demand, age and performance measures. However, preventive maintenance is more appropriate as the facilities are kept from unwanted breakdown hence every school manager must need not forget that prevention as they say is better than cure.

Routine Maintenance: Is carried out periodically creating a kind of roaster as deem necessary by the school managers. Facilities may be serviced monthly, quarterly or even annually depending on the agreed schedule.

Emergency Repairs: Is very common in the management of school facilities in societies where maintenance culture is not well established and this takes place when a facility breaks down and urgent measures or step shad to be taken to remedy the situation.

Factors Affecting School Plant Maintenance: The factors affecting the effective maintenance of school plants in TVET institutions in Nigeria include:

Lack Good Leadership: School plant require good leadership for its management to be effectively carried out and be more concerned in ensuring the facilities are properly and correctly used by the students and staff for the purpose for which they were manufactured. Hence top management in schools, either in primary, secondary or university, play an important role in maintaining the school plant.

Lack of Effective Monitoring of the Users of School Plant: Creating a team to monitor educational systems to ascertain if the school plant and individuals using it write reports on their findings, will ensure the school plant lasts long and value is derived from its use. Left unattended to, they will become desolate and unusable for educative purposes.

Lack of School Maintenance Culture: In Ezeji (1998) stated that school plant should be maintained to keep the equipment, building and site in as pristine a condition as possible, with the aim of increasing its durability and life span. School authorities need to randomly check regularly to discover any unforeseen factor that can adversely affect learning and teaching effectiveness in relation to the facility required for it. However, in some institutions, where they have department on works, the staff's attitude is lackadaisical when school plant is in bad condition. If the information on bad school plant is acted on timely, the operations of the institution will run smoothly which will impact learning and teaching effectiveness.

Lack of Adequate Funds: The lack of funds available to effects repairs or regular maintenance of the facilities is also another factor affecting the conditions of the facilities. The resources are not just there to effects the repairs even when the attention has been passed higher up the chain of authority.

Lack of Adequate Security in Schools: Vandalizing school facilities is another limiting factor that needs to be investigated. Students and teachers should be educated on the benefits of maintaining school facilities and to careful, this will ensure they cherish and destroy school plant.

Lack of Maintenance Knowledge and Interest: According to, several person, who occupy management positions in schools lack the requisite knowledge and are not interested in maintaining school facilities. A few with the requisite knowledge fail to practically use it in maintaining facilities. Managing school facilities require inter-mixture of experts in diverse areas so that school facilities can function effectively for a long time.

Essential Considerations in Facility Planning and Maintenance for TVET Institutions in Nigeria: In planning for the establishment of a new or expanding and maintenance of an already existing TVET plants and facilities needs careful consideration of several factors and consultation of several sources which according to Inyiagu (2014) involves the following seven basic steps sequentially arranged: Preliminary studies to determine the need for and scope of the program should be carried out; Proper location of the workshop/laboratory within the school building is desired; Determination of standards for sizes and shapes of shops, laboratories and other rooms within the facility; Allocation of spatial areas within the individual rooms for bench and machine work, assembly, storage, finishing, planning; Inclusion of physical utilities peculiar to such facilities as lighting, ventilation, power and plumbing; Selection of training equipment functional to the program; and Evaluation of the plan through studies of related material and the assistance of professional resource personnel. The principles for planning for and maintenance of TVET facilities and equipment according to cited in Nwachukwu (2012) are: the school shop should be arranged in a manner, which permits the teacher to teach efficiently, and the student to learn effectively; the workshop should be so arranged so that it is a safe place to work for both the teacher and the student; and the school shop should be arranged so that it presents a pleasing and artistic appearance.

5. Conclusion and Suggestions

Functional and adequate school plant facilities in the teaching and learning process is the first step towards the realization of educational objectives in technical vocational education and training institutions hence, it cannot be compromised or neglected. It will be noted that the appearance of the school plant both outside and inside has a cumulative effect on the public attitudes towards a school system. Even though the buildings are old, and located on sites that fall below standards, it is generally regarded is an asset to the community and an expression of educational accomplishment when it is attractive. With adequate facilities teachers' productivity will be high, learning will become motivating and interesting, and students' acquisition of skills towards self-reliance and gainful employment will become more significant. The maintenance of such facilities must be therefore an integral part of the overall management of the school. The actualization of the goals and objectives of TVET require the provision, maximum utilization, appropriate management and maintenance of the school plant facilities. It is only when equipment and facilities are continuously maintained in excellent working condition and sound educational program may be offered. Based on the relevance of school plant facilities as discussed in this paper, the following suggestions are made:

- TVET personnel in institutions of learning should be given regular training in maintenance and management of facilities.
- TVET equipment and training environment must be replica to that of the world of work where products of TVET are expected to fit in upon graduation.
- Since TVET tools, equipment and facilities are cost intensive, government at all levels should make adequate funds available for the smooth running and maintenance of its tools, equipment and other facilities.

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Competency of Zimbabwean Teachers Who Completed In-Service Teachers Training Program in Inclusive Education

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Abstract: This qualitative study examined the competency of in-service teachers in inclusive education in Zimbabwe. A purposive sample of 15 graduate in-service special needs education teachers selected from one state university participated in the study. Semi structured interviews were used to collect data. Thematic analysis was used to analyse data. The study established that for most of the teachers, the in service training fairly managed to prepare them adequately to teach in an inclusive class. It was also found from the study that most teachers interviewed are knowledgeable in identifying children with special needs. Peer tutoring and interaction groups were common methods of teaching. It was also reported that lack of resources and lack of support from other teachers were major challenges impeding teachers from meeting the needs of the learners in inclusive setting. The study further revealed that extensive training on use of individual educational program is needed during training. The study recommends that teachers be evaluated on all relevant competences during teaching practise which could enhance the professional development of in-service teachers in inclusive education. Another recommendation is that micro teaching strategy be used to fine tune the teachers skills in teaching in an inclusive classes.

Keywords: *Competency, In-service teacher training, inclusive education.*

1. Introduction

Providing a quality education for all students in inclusive settings has been acknowledged as perhaps the most challenging yet most important issue in education (Atta, Shah, & Khan, 2006). Zimbabwe has aimed, since the 1990s, to actively shift from exclusive to inclusive education in line with trends on the global stage (Musengi & Chireshe, 2012; Majoko, 2019). The success of inclusive education depends on adequate knowledge and skills of teachers (Flecha & Soler, 2013; Florian, 2012; Naicker, 2008). Despite this, teacher education for inclusion is a new stride that the education system in Zimbabwe is attempting to achieve. In-service teacher training is significant because teachers educated in special education tend to be more positively inclined towards inclusion of children with special needs in the classroom. In service training is important because it is concerned with the activities and courses in which a serving teacher may participate for purposes of upgrading his or her professional skills, knowledge and interest, subsequent to initial training (Osamwoyi, 2016). Since the global adoption of inclusion, teacher training has emphasized on the ability of the teacher to understand the characteristics of children with special needs and adapt the curriculum in tandem with their developmental level and interact in the classroom with all children including those with exceptionalities (Bruns & Mogharreban, 2009). Teachers are required to have understanding of methods for development, management and implementation of the individual educational program. Teachers are expected to collaborate with other stakeholders including families in order to give them the support they need.

Similarly teachers should be knowledgeable and informed about using behavioural interventions and effective classroom management that enhance teaching and learning of all children (Forlin, 2010). Consistent with several other countries including South Africa (Theron & Pasha, 2015), the United Kingdom (Florian, 2012), United States (Desimone & Garet, 2015), and Australia (Carroll, Forlin, & Joblin, 2003), Zimbabwe has institutionalized measures to develop in-service teacher competency in inclusive education. Some Universities and teachers training colleges are now offering in-service programs in inclusive education. This state university offers in-service bachelors of education in special needs education degree. It is a 3 year programme targeted to in-service teachers who had at least a 3 year diploma in education from an associate teachers college of the University of Zimbabwe. Unlike traditional teaching programs special education degree focus on overcoming the challenges of teaching children with special needs. The programme constituted the following modules; foundations and cultural issues in SNE, assessment issues in SNE, curriculum management, guidance and counselling, rehabilitation and transition of children and youth with

disabilities. Course work in instructional strategies for children with varying special needs like hearing and visual impairment, intellectual disability, learning disability, gifted and talented, physical and motor disabilities, health related disabilities.

Research Objectives: The study had the following objectives;

- To explore the teacher competences after training in special needs education.
- To establish skills being used by the in-serviced teachers.
- To establish future training needs.

2. Literature Review

Several international and Zimbabwean studies have examined the competencies of in-service teachers in inclusive education. In a quantitative study with 176 teachers in Ghana, found that these teachers had no exposure to special needs education in their in-service training (Agbenyega & Deku, 2011). Resultantly, they could not meet the individual needs of learners with disabilities in regular classes. It is evident that the complexity of teacher work, demands competences for everyday dealing with student learning, emotional and behavioural characteristics (Bukvic, 2014). This is especially true for teachers who cater for children with special educational needs that result from sensory, physical, behavioural, intellectual (cognitive) and learning disabilities. Inclusive education means full inclusion of children with exceptionalities (giftedness and disabilities) in all aspects of schooling that other children are able to access and enjoy (Kusuma & Ramdevi, 2013). Teacher competency is the ability to plan, control and facilitate appropriate interaction in the classroom, while taking into account the different needs and abilities of learners (Dyson & Squires, 2016).

These competences are explained as a complex combination of different knowledge, skills, understanding, values, attitudes and desire which lead to effective, embodied human action in the world, in a particular domain (Crick, 2008). It is, therefore important to understand that teacher competences are continually evaluated through the interaction with co-workers, student, parents and others. Teaching competencies are thus a complex combination of knowledge, skills, understanding, values and attitudes leading to effective actions in situations of learning. Another study found out that the perceived key competences for successful inclusion are screening and assessment, differentiation of instruction, classroom and behaviour management and collaboration (Majoko, 2019). Researches elsewhere reiterated the key areas of teacher competences as identification of children with special needs, planning to meet the needs, relevant material resources, instructional approaches, assessment and evaluation and effective collaboration with necessary stake holders (Cate, Markova, & Krischler, 2018). Teachers who have training in special needs education are pivotal in innovatively and collaboratively responding to the unique learning needs of all students.

Screening and Identification: Screening and identification of children with diverse needs is an important teacher competency in inclusive education. Referral and assessment procedures information, aids teachers in identification of children who require differentiated instruction and intensive instruction. Also knowledge of common characteristics of different exceptionalities was ranked as the most vital competence for inclusive education (Dingle, Falvey, Givner, & Haager, 2004). It is a key competency for the teacher to have extensive knowledge of the various types of behavioural, physical and psychological impairments that may affect students, and the effect of such impairments on children's education, development and quality of life. The teacher should be able to identify children who are in need of additional support due to exceptionalities, including gifted children or those with learning disabilities. Identification of learners with special needs is the first step in accommodating the learner in to the mainstream education setting.

Curriculum Differentiation or Individualised Instruction: Planning to meet the needs involves making curriculum and environmental adaptations. A teacher in an inclusive setting should be able to engage in the inclusion-with-modifications model. The program also incorporates practical teaching experience to facilitate the transfer of learned skills and knowledge to the reality of inclusive classrooms. It is therefore important to explore the competences of teachers who went through the 3 year in-service program. This study will assistant in explicating what competences to be included in in- service teacher training that prepares teachers to work in inclusive settings. The current study addressed the following research question what are the current teacher competencies of the in-serviced special needs education teachers? Appropriate curricula and

organizational arrangements are central in ensuring quality education for all in an inclusive classroom. The teacher in an inclusive setup should create an enabling environment for inclusive education (Atta, Shah, & Khan, 2006). It is also imperative for the teacher to be able to plan appropriate arrangements and adaptations of classroom physical environment (Kusuma & Ramdevi, 2013).

Curriculum adaptation is an on-going dynamic process that modifies and adapts the prescribed program of studies to meet the learning requirements of a student with special needs. The teacher in an inclusive class is expected to use different methods of teaching accommodating both different styles of learning and rates of learning. The use of the individual educational plan is important teaching technique that gives the teacher the right and responsibility to adapt the curriculum to meet the student individual needs. The teacher is expected to be able to instruct students in ways that permit them to master content at a pace suited to their abilities, needs and interests. A competent teacher in an inclusive classroom should be able to design a variety of alternative teaching strategies in order to compensate the deficient area of SEN children (Kusuma & Ramdevi, 2013). In the process of designing alternative teaching strategies the teacher employs adaptive instruction which requires teachers to assess the characteristics and capabilities of each student, collaborate and consult with others to plan developmentally appropriate instruction (Wang, 1984). This means the teacher should be able to instruct students in ways that permit them to master content at a pace suited to their abilities, needs, and interests.

Assessment and Evaluation: One key teacher competency is the use of evaluation data to assess the attainment of goals set in Individualised Education Plan and to set new goals (Kusuma & Ramdevi, 2013). Teachers may assess special needs student in the inclusive class by providing multiple test formats. An effective teacher in an inclusive class will collect data through notes, checklists, sticky notes, and audio notes in order to keep track of student strengths and needs (Eredics, 2018).

Collaboration: In order to provide adequate education for scholars with special needs the teacher should seek out consultative relationship with support personnel. This requires the teacher to take a holistic approach to the education of student, in particular students with special needs (Majoko, 2019). Competent teachers simultaneously translate theory into practice and consider the learner population and the socio-cultural contexts in which teaching and learning take place (Majoko, 2019). This means that the competent teacher collaborates with other relevant stakeholders such parents and other professionals (psychologists, social workers, occupational therapists and speech therapists) to cater for the needs of every learner. Collaborative problem solving between teachers and other support professionals promotes inclusive education (Atta, Shah, & Khan, 2006). The teacher should build stable and cooperative with support personnel, parents and other stakeholders for procurement of relevant special educational material. This will assist in creating an optimal learning experience for children with special needs. A study of Australian teachers revealed a grave concern pertaining to the lack of support services available to the students and themselves and disclosed a perceived inability to provide optimal educational program to children with special needs because of inadequate teacher preparation and lack of adequate resources (Carroll, Forlin, & Joblin, 2003).

Classroom Management/Behaviour Management: Several studies show that currently, instruction in inclusive settings is inadequate and usually does not meet the needs of diverse children with special needs (Majoko, 2019; Kuyini & Mangope, 2011; Selvi, 2010). Research reveals that there is inadequate training of teachers on inclusive education as well as the appropriate differential instruction for a class with learners with diverse needs. This necessitates the examination of the competencies that teachers require to meet the needs of children. In their investigation of 20 inclusive classrooms, established that several teachers utilized very few adaptive teaching strategies in their delivery of lessons in regular classrooms (Kuyini & Desai, 2008) in another study, established that adapting instructional materials, behaviour management among others were important competences and also availability of teaching materials, support teachers, more training as key support resources which may enhance in the classroom (Kuyini & Mangope, 2011).

Similar findings by) revealed that children with special needs are not likely to benefit from the teaching and learning opportunities offered in regular classrooms (Agbenyega & Deku, 2011). In the United States and Europe it is generally stated that effective inclusive practise requires teachers to be able to deliver specialised

instructional practice geared towards the individualised needs of all students (Oddome, 2016; Watkins, 2012). Due to their unique characteristics learners with special needs may require to be taught certain subjects over and above those detailed in the regular school syllabus. Such subjects include typing, orientation and mobility, activities of daily living skills, perceptive training, sign language and individual speech training (Kigen, 2017). Therefore adequately trained professionals are required in the provision of meaningful educational services to children with special needs in an inclusive class. Qualitative methodology provides a systematic avenue to comprehend complex phenomena and events within a specific context.

3. Methodology

This makes it an ideal way to generate scientifically based evidence and insight to inform practice in educations and provide the basis for future research within the qualitative research approach a case study design was employed (Mcmillan & Schumacher, 2010). Graduates from a state university who were full time were targeted for the purposes of evaluating the in –service training program. Purposive sampling was used in selecting the participants. Data was collected using semi structured telephone interviewing technique. Interviews gave the participants a chance to express their experiences freely. Telephone interviewing was utilised for its convenience as the participants are scattered in different geographical locations where they work. Interviews allows for the collection of word rich information (Yin, 2014). In this study the concern was to investigate/or explore the special needs education related competences and training needs of individual teachers to build up a picture of the general situation of teacher competencies and training needs. Qualitative data analysis was used to analyse the data using the following steps, data reduction, coding and categorization into themes (Creswell, 2013). The major themes that emerged from the data were supported verbatim quotes when necessary.

Ethical Considerations: In any research study researchers demonstrate integrity and competence. Aspects of trustworthiness and ethics were considered to uphold rigor. As a way of observing ethics, informing participants of the purpose of study as well as the freedom to withdraw was done. Names of the participants were not to be revealed for anonymity reasons.

Sampling: Purposive sampling was used to select 15 participants who are former students at the state University who specialized in special needs education, and had at least two years-experience teaching children with disabilities in an inclusive class. This is because it is assumed that they had managed to put special needs education theory that they had learnt in to practice in the work environment.

4. Results and Discussion

This section discusses the major findings of the study based on the research questions of the study. The following themes were generated from the data collected;

Knowledge Dimension: It was revealed that training provided the teachers with the ability to identify students with special needs. Respondents reported that they are able to detect and deal with children with intellectual disabilities, visual impairment, hearing impairment, learning disabilities, autistic, epilepsy, physical cerebral palsy and emotional dyslexia. This confirms views that, extensive knowledge of the various types of special needs and the effects of such in child development is an essential element of inclusive education (Dingle, Falvey, Givner, & Haager, 2004). All respondents correctly reported that they can identify children with special needs by observation, physical appearance, and testing through academic performance. Therefore the ability to identify special needs of children was a vital competence for inclusive teaching. When asked about policies and legislation that guide provision of special needs education, most teachers who graduated from the in-service training programme indicated an awareness of policies and legislation that guide special needs education in the country. Most teachers reported knowledge of the Education Act 2006, Constitution of Zimbabwe 2013, and the Secretary's Policy Circular p36 of (1990). Only a few of the respondents mentioned the Salamanca statement of 1994.

Curriculum Differentiation/Individualised Instruction: Results showed that all teachers could make curriculum and environmental adaptations depending on the special need identified. This is also evident

enough that they have mastered the ability to transfer theory to real work practise. Curriculum adaptations reported by most respondents include children writing less and different work, individual exercises, content, methodologies, large print for low vision, planning separately using individual instruction plan, simplifying content, breaking down matter into teachable units, task analysis and exam modification. Some respondents professed the use of peer tutoring, buddy systems and interaction groups where children with special needs have models to imitate. Environmental adaptations reported included making rumps, front seating positions, rails and ramps for children with visual impairment, raised tables, larger desks for braille books, inclusive toilet and closing potholes in classrooms. This is in line with the recommendation made that a teacher in an inclusive setup has to create an enabling environment for inclusive education (Atta, Shah, & Khan, 2006). However, A few respondents who reported making ramps as environmental adaptations did not report having children using wheelchairs in their classrooms.

Provision of the necessary physical facilities like ramps and rails for children with physical impairments in schools is necessary. It is those with specialist knowledge in inclusive education who should make such recommendations to the school authorities. All respondents reported use of individual education plan for learners with special needs. The popular methods included giving the students individual attention, planning and teaching one on one, check learners' progress, drafting learning program for each child and assess learner's performance and plan suitable work from point of mastery. However, one respondent reported that the school's psychological services department was not providing the required assistance; hence she was facing challenges in implementing her knowledge. This calls for the need for all stakeholder involvement in special need education. Reports on material resources being used by teachers indicate that some suitable materials are being used. Material resources being used include ICT tools, mobile visuals, computers, braille machines, and large print books, projectors, learning blocks, real objects, charts and sign language charts. The issue of quantity of the material resources was raised. However, the major challenge in using these materials is the rampant power load shedding that the country is experiencing as reported by most respondents.

Instructional Competence: All respondents could name at least two teaching approaches they used in an inclusive class. The approaches included use of games, songs, look and say, storytelling, child centred approach, pair work, peer tutoring, experimenting, role play dramatization projects, multisensory approach, cooperative learning, direct instruction, mobility and discovery learning. These approaches are meant to enhance cognitive, social and emotional development within a cultural context, one of the core issues in the University's curriculum. A teacher in an inclusive setting is expected to use different methods of teaching for successful inclusion. In most of the responses however, a respondent indicated using at most two methods. In evaluation of the students' academic performance, also proposed use of multiple formats in order to keep track of student's strengths and needs (Eredics, 2018). Most respondents reported using one or two formats of assessment. The use of various formats is important as one format can address the weaknesses of another. A highly competent teacher puts into practise a number of assessment formats. The formats of evaluation reported by most respondents include writing exercises and making use of assessment tests, group work activity, classroom assessment, assignments, criterion tests and curriculum-based tests. One respondent in particular reported multiple Assessment formats, he reported that: Assessment of progress of all learners is done through observation and recording, oral and written tests, daily exercises, tests, group work activity, and continuous assessment.

Collaboration: Most of the respondents reported stakeholder participation as important in inclusive education. The respondents reported collaborating with parents, other teachers and professionals. However, a very few respondents reported lack of stakeholder participation. These reported lack of corporation from other teachers, the school's psychological services department, lack of parental cooperation, and lack of support from school administration. Collaboration with stakeholder participation is important as inclusive education requires a holistic approach to ensure its success (Majoko, 2019). In his findings he established that collaboration is a key competence in inclusive education. A competent teacher should be aware of the communication techniques to ensure collaboration. When asked about areas of collaboration with parents the participants reported issues including welfare of the learners, in writing ecological inventories, in behaviour management, teaching and modifying behaviour, in staff development, homework, writing social record, transportation, identifying children with special needs out of the school and monitoring the learners. Other

important stakeholders identified by respondents were remedial tutors, educational psychologists, doctors, nurses, police, counsellors, schools' psychological services personnel, audiologists and opticians.

Challenges Experienced in Meeting the Children's Needs: Most respondents reported lack of resource as the major challenge faced in meeting the learning, behavioural, emotional and psychological needs of children. Half of the respondents reported lack of time and assistive devices as a crippling challenge. One respondent in particular said "children with special needs are not prioritized both at home and at the school" Several challenges were encountered by teachers when teaching and interacting with learners in an inclusive class. Challenges reported included modifying behaviour, inadequate resources, communicating and engaging with the children with hearing impairment, maths teaching using braille, meeting the needs of all the learners, grouping, large class size and use of IEP. The above concurs with the finding which reveal that inclusive education is met with a number of challenges in implementation such as those reported by the participants (Kuyini & Desai, 2008). I am now able to handle cases that involve learners with special needs, offer assistance to my counterparts, and guide children with special needs to achieve their optimal performance.

Teachers Perception of the In-Service Program: Most of the teachers interviewed reported that the specialist training prepared them adequately to teach children in an inclusive classroom. The respondents reported that they have been equipped with the ability to manage the curriculum and learning environment for the sake of students with special needs. They were also able to translate different learning theories to practise, and collaborate with some stakeholders. One respondent in particular said: the program has been of much relevance to my work. However, a small number of the respondents interviewed responded by saying that their training in special needs education had not adequately prepared them. These felt that they are still finding it difficult to teach children with hearing impairment because the program was mostly theoretical.

One respondent had this to say: the training had been mostly theoretical; I had no opportunities to actually visit people with disabilities during the training. Another respondent said: I lacked practical experience because I did not manage to carry out my teaching practice at schools that have special need education in line with the training requirement as a result of logistic problems. When asked about how they solve problems encountered, most of the teachers reported that they consulted specialists and seek advice from more experienced teachers. Contacting parents was also cited as a strategy of problem solving. Teachers also instigated that when they encountered problems, they would inform the administration and some consult journals as problem solving strategies. Some reported that they would work out solutions for themselves while others indicated that they would seek advice from colleagues.

Future Needs: Teachers reported the need to further training in the development and use of the IEP, communication techniques and sign language. Some of the respondents indicated they needed more information about autistic children. Further expressed need for teaching guide for inclusive practices, teaching aids. Another group of teachers reported that there was need for exposure to children and adults with disabilities.

Recommendations: An all-inclusive approach, where all stakeholders must be involved must be implemented so that inclusive education does not only become the role of those with specialist training, this will ensure cooperation and buy in from relevant stakeholders. It is also recommended that teachers should be evaluated in all teaching methods so that they develop multiple skills in teaching children with special needs and in assessing them. The use of micro teaching during training and exposure to children with special needs is also recommended**.** It is further recommended that the government make it a policy to include inclusive education in the general education curriculum to enhance cooperation from other teachers in general in as much as inclusive education is concerned.

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