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Perception of Prospective Teachers about Practices of Sustainable Competencies Learned During Pre-Service Teachers' Program

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Key Words

Teacher Education, Sustainable Competencies, Quality Education

Abstract   *The quality of teachers and teaching depends on prospective teacher education programs which have been enthusiastic to gain competencies among teachers. Therefore, to attain essential teacher competencies during teacher training programs has great meaning to prepare prospective teachers for the teaching profession. This research focused to explore the pre-service teachers' perceptions about practices of competencies they learned during the teacher education program. Through survey research data was collected from B.Ed. Hons student through an instrument. A convenient sampling technique was employed. The result of data shows no significant difference in competencies practices on basis of gender and sector, the only significant difference was seen in in-service teacher competencies, where in-service show high mean score in particular competencies practices as compared to the pre-service teacher. Researchers should focus on these variables and plan their orientations according to the perceived lack of prospective teachers.*

Introduction

Education report on the professional development of teachers has revealed that public demand for education has augmented in the present age (OECD, 2010). Educational institutes have been focused on learners' demands in a new era to compete or perform the task in the future reasonably and effectively. In this perspective, organizations are needed to sustain their learner with wide-ranging competencies to facilitate them to endure in the world of work. This condition emphasizes quality students. In this sense, the professional competency of teachers

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becomes more significant because teachers are the most effective role model for the learner at all levels of education (Darling-Hammond, 2006).

Teacher education renewal (Gatlin, 2009) need to care about the enhancement of teachers tasks based on developing a strong relationship between pupils and curricula, in the course of the provision of knowledge (Stronge, Ward, & Gran, 2011), and provision of effective learning environment that endure teacher competence development. This method modifies the everyday jobs of teachers: helper and initiator, learning instructor, concerned with expertise (Sturgis & Patrick, 2010).

For developing the quality of life, it is needed to change in learning. As Koichiro Matsuura, the director-general of UNSECO emphasizes "education is an utmost influential tool to achieve a required change intended for the development of sustainability (UNESCO, 2005-2014). There is no effective teacher education than the quality of teacher education (Lubanga, 2011). Teachers required specific content knowledge as well as pedagogic knowledge to implement the education for sustainable development. Mutually both practices of teacher's knowledge are fundamental for effective teaching and learning at schools and therefore a measure of professional competency (Bertschy, Künzli, & Lehmann, 2013). For the teaching profession, the teacher must promote his/her professional skills through teacher training according to learning standards. The basic objective of teacher education is to modify the learning system; an active teacher is who can integrate his personal and professional characteristics into his class. Effective teachers integrate particular rules and characteristics in education to follow the standards made for professional development code of conduct and their performance (Jumani, 2007).

Sustainable refers to thinking pattern revolves around future in which societal, financial and environmental concerns are well adjusted in term of improving life quality and development (Dean & McMullen, 2007). Sustainable refers to the capability to perform a task individually (Urdu, 2018). It is an ability to maintain at a particular level (Oxford dictionary, 2019). It is an ability to continue overtime or able to be maintained or continue (Cambridge Dictionary,2020). Competencies base is rested in the educational setting (Ploum, Blok, Lans, & Omta, 2017). If a nation wants to meet the goals of sustainability, they need to emphasize competencies of knowledge, skills, perceptions, and values that inspire and backing people's contribution and decision making of society (UNESCO, 2005-2014). Competencies refer to the disposition that needed by the individuals for performance and self-organization in challenging and demanding conditions. It seems that for sustainable development this knowledge, life skills, and behavior stem from individual competencies. Commonly it is mentioned as an effective performance of a job and solves the problem concerning real-life issues, tasks, and opportunities (Barth, Godemann, Rieckmann, & Stoltenberg, 2007 Dale & Newman, 2005).

Sustainable competencies are the list of competence that is carried through the scheme of study or program, including multiple curricular and educational frameworks (Ploum, Blok, Lans, & Omta, 2017). They are particular–contexts dispositions aimed at the accomplishment that can be attained through learning. Competencies relate to needs and demands in particular domains; it enables the learner to play a productive role in society (Trier & Peschar, 1995). It is the ability to know whether an individual is ready to cope with the challenges and requirements of their future life. It called life skills because it refers to grasping unanticipated jobs and demands (Binkley, Sternberg, Jones, & Nohara,1999) or cross-curricular (OECD,1997; Trier & Peschar, 1995).

The word competency shows the quality of individual or well- established mentally and physically to execute tasks induced by teaching career (MEB, 2006). In this term, the professional competencies of teachers become more important for educational structure. Competency of a teacher is defined as their knowledge, skills, and belief to execute the career effectively and efficiently (Medley, 1982; MEB, 2008; Brauer, 2010).

There are many perspectives about the competency of teacher or teacher competency. In one perspective, competency of the teacher is defined as their knowledge about the subject matter, knowledge about professional skills and its demonstration (Karasar & Eggen, 2005; Bandura, 1989) in another perspective, competency about culture and societal fairness (Ladson-Billings, 1995; Gay, 2005; Drling-Hammond & Bransford, 2005). While (Schon, 1983; Boyer, 1997) depicted competencies as arousing concentration in instruction and research.

Some other researches define it as reflective teaching, improvement, and demonstration of teaching practice, research, development of educational programs and leadership competency (Dewwy, 1916; Vygotsky, 1980; Schon, 1996; Pedro, 2006; Selke & Alouf, 2004; Farrell, 2004). According to a democratic and humanistic perspective, teacher competency is deliberated as the provision of quality education to all individuals as a request of humanoid rights (Laitsch, Heilman, & Shaker, 2002; Cochran-Smith, 2004). Whereas Fullen & Hargreaves, (1992) examine the competency of teachers as enhancing the spirit of collaboration in emergent tactics of pupils learning, numerous researchers define it as a contribution to the systematic and technological development of teacher training (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Friedman, 2005 Rogers, 2003). Moreover, (Brauer, 2010) deliberated it as a forecasting teaching process itself and its productivity. At this point, forecasting supports the prospective teacher to analyze whether their capabilities are effective and applicable for their career, the basic meaning of the teaching process is action or activity in the teaching-learning process. teacher competencies are identified and classified by different researchers. One common thing is that basic required skills are provided during teacher education program arranged for the pre-service teacher, so the educational organization needs to consider multiple characteristic e.g.

competency-based teaching techniques, knowledge about the organization, understanding about diversity, learner assessment, utilization of appropriate material for teaching-learning process, social understanding with multiple strategies and learning styles, assessment techniques, contact and guiding learner, adult learning, collaboration, and cooperation to facilitate their learners with adequate skills (Hawley & Valli, 1999; Garet, Porter, Desimon, Birman, & Yoon, 2001; Richardson & Placier, 2001; Mangin & Stoelinga, 2010;). They should focus on acquiring knowledge about content, subject matter, curricula, planning and managing teaching strategies, assessing teaching effectiveness, and managing learner behavior and their progress (Mangin & Stoelinga, 2009). It is awaited by prospective teachers to bring a set of pedagogical knowledge and skills in the classroom. They must have sufficient knowledge about the subject they are going to teach, knowledge about learner development, having command over multiple teaching strategies and organization intended for a start their teaching profession (Chong, Choy, & Wong, 2008). It is hoped from beginning teachers and schools that the teacher education program will arrange this knowledge and skills for them (Kervin & Turbill, 2003). Teacher education and development is a continual process (Feiman-Nemser, 2001). Basic knowledge and skills are provided by the teacher education program. Moreover, professional development plays a vital role in teaching progression and teaching skills. It is a shift away from the uneven sight of preparation of pre-service teachers and the development of unique ongoing teacher development over time. Without action, educational outcomes can't be achieved (Subba, 2014).

It is contingent upon the harmonization of multiple fundamental skills and their transference into actual life and job conditions, which have been obtained in the organization or during training (Merriënboer et al., 2007). Equally, it is the requirement of the new era that is auxiliary and fruitful activities for pupils to enable them to transfer the composite cognitive skills to their routine life involving a wide-ranging set of actual domains (Merrienboer, Clark, & Croock, 2002). Quality and effective teaching is an effective instrument of the 21st century to bring revolutionary modifications in the educational sector in term of achieving the progressive economic goal for quality and stress-free life of individuals by maintaining the safekeeping, prosperity, and peacetime among peoples, and communities in worldwide. It is not possible to enhance the quality of work if we don't produce a good number of effective teachers who are effectively trained and dedicated to continual of the profession. Continuous learning of teachers based on the development of a healthy structure of professional development and effective approaches for professional development that facilitates a range of competencies. It is not sufficient to improve teacher competencies; it is necessary to construct and sustain the useful, cooperative and collaborative environment, and permit them to do work cooperatively in a condition that facilitates learning for teacher and learner. Effective teacher education must promote teacher learning and

competences. Moreover, it is also necessary to ensure who is sustained and can effectively support learning. Effective teaching always exists in the quality of teachers which base on their knowledge skills and dispositions to demonstrate in a particular manner e.g. collaboration with peer and modification of instruction to support learner achievement. Whereas, quality teaching stated as durable teaching that facilitates an extensive range of learners to learn. These instructions help the program, the learning objective, and the demands of the learner in certain conditions (Darling-Hammond, 2014).

Education supports environmental, societal and economical changes in community and progress through training should be sustainable so that modifications and creativeness in behavior as the outcome of education must be constructive and long-lasting (Jumani & Abbasi, 2015). Teacher training and teacher education program is a toll to offer instructive opportunities to learners to achieve the objectives of education to generate the knowledge-based procedure for sustainable development. The organizations for teacher training are expected to analyze their part to undertake sustainable education in terms of training of prospective teachers (UNESCO, 2012). Generally, the goal of the teacher education program is to endorse "analytically reflected style to the whole feature of curricula, specifically subjects like residency, which relates to social aspect that headed for Education for Sustainability (EFS).

Teachers and educational organizations must think that learners should respect their environment (Killen, 2005). Sustainability is needed in each phase of development for the strong association to attain the aims of education to minimize the existing challenges and for the certification of sustainability in the teacher education program that will help for the improvement of prospective teacher's professional development through practices and structuring abilities. A possible limitation rose from partial competencies on the bases of teacher organizing is professional practices. For attaining the inclusive goals of sustainable education, it is important to improve sustainable competencies among prospective teachers. Competencies are a collection of knowledge, abilities, and attitude, which assist an individual to execute a task successfully. Whereas, competence refers to dispositions which person requires in this situation for performing and self-directed in multifaceted conditions and environment. It can be described as personal dispositions to self-direction which comprise intellectual, affecting, and psychomotor features; there are linked with knowledge, capabilities, skills, drives and affective dispositions program for a prospective teacher. It assists self-directed act in multifaceted conditions, based on assigned particular conditions and settings (Rieckmann, 2011). The teacher's competence toward a career is an important matter for teacher education providers and various educational organizations that hire these teachers. In this study, sustainability refers to the capability to continue at a definite level (Oxford Online Dictionary, 2020). Sustainability is professional development that transforms the prospective teachers (National Academies of

Sciences, 2018). Whereas, professional development depicted as the modification of competence. In this research, sustainable competencies are capabilities of prospective teachers' skills they have learned effectively to perform their job, which directly linked with pupil learning and improvement. Effective practices are acknowledged as being accurate and are to perform a task frequently to become skillful (Webster, 2020).

Objectives

- To find out the practices of sustainable competencies learned by pre-service teachers during B.Ed. Hons program.
- To compare competencies practices of male and female pre-service teachers.
- To compare the competencies practices of public and private sector pre-service teachers.
- To compare the competencies practices of in-service teachers and pre-service teachers.

Research Hypothesis

H1: There is no significant difference between male pre-service teachers and female pre-service teacher's competencies practices.

H2: There is no significant difference between competencies practices of public and private sector pre-service teachers.

H3: There is no significant difference between competencies practices of pre-service teachers and in-service teachers.

Methodology

It was quantitative research employing survey research design that is used to get the opinion of the participant about the particular research topic and the main objective of this design to define the basic characteristics of a specific population (Fraenkel, Wallen, & Hyun, 2012). This is the most famous design in research; it is an instrument to collect data that answer the characteristic of a particular population. The data is collected to analyze the hypothesis or answer the people's opinion on a particular issue. (L.R.Gay, Mils, & Peter, 2012). Mostly it is used to apply on a large population or for generalization to be made about particular selected variables (Cohen, Manion, & Morrison, 2007). The population is the large group of people to whom we generalize our data. All the participants relate to the population have the same characteristic (Fraenkel, Wallen, & Hyun, 2012). The population of this research was the pre-service teachers enrolled in B.Ed. Hons program of 2 public & 2 private universities of district Lahore. It is not always possible for the researcher to choose a random sample. Therefore, the researcher

must select convenience sampling or purposive or systematic samples (Fraenkel, et al, 2012; Etikan, et al, 2016). Convenient sampling was deployed by the researcher. 445 pre-service teachers were selected from public and private universities, and 54 in-service teachers were selected from different schools to know whether after the accomplishment of this degree they practicing those skills frequently or not. Data was collected using a questioner. Likert scale data was analyzed using SPSS Ver.22, which comprise inferential and descriptive statistic such as mean score, Std. Deviation, and t-test. The tool was fairly reliable as the Cronbach Alpha. The reliability of questioner was .961. Questioner comprised 10 factors and 59 items.

Analysis

Table 1. Mean Standard Deviation and Reliability Coefficient for Sustainable Competencies

Respondent	No of item	Means	Std.deviation	Alpha.Cronbach Reliability
500	59	247.08	27.130	.961

Table 1 reflects that there were 500 respondents and there were 59 statements and the range of score on the Likert scale for each statement was 1-5. It means the participant could a maximum score of 5 and a minimum score of 1 on each statement. The mean score above 3 was considered as above average score toward agreement and below 3 was considered as below average score (disagree). The table shows that the mean score of pre-service teachers' competencies was above average.

Table 2. Mean of Factors

Factor	N	No of Items	Mean	Std. Deviation
Content knowledge	500	5	21.09	2.280
Professional skills	500	4	16.64	2.903
Pedagogical competencies	500	10	41.63	6.575
Use of technologies	500	7	29.43	3.325
Deployment of resources	500	4	16.73	2.204
Assessment	500	6	24.73	3.628
Moral and social competencies	500	8	33.81	4.073
Communicational competencies	500	4	16.51	2.315
Cooperation and collaboration	500	6	129.51	2.755
Citizenship	500	5	21.94	2.350

It is evident from the table that teacher competencies about; Cooperation and collaboration (M=129.51, SD= 2.755) , Pedagogical competencies (M=41.63, SD=6.575), Moral and social competencies (M=33.81, SD=4.073), Use of technologies (M=29.43, SD=3.325), Assessment (M=24.73,SD= 3.628), Build and maintain learning partnership with learner or good citizenship (M=21.94,SD=2.350), Content knowledge(M=21.09,SD=2.280), Deployment of resources (M=16.73, SD=2.204), Professional Skills (M=16.64,SD=2.903), and communication (M=16.51,SD=2.315) shows high mean score.

Table 3. Comparison of Pre-Service Teacher Practice Based on Gender there is no Significant Difference Between Male Pre-Service Teachers and Female Pre-Service Teacher's Competencies Practices

Variable	Group	N	Mean	SD	Df	t	p
Content knowledge	Male	277	21.21	2.34	498	1.27	0.201
	Female	233	20.95	2.19			
Pro-skill	Male	277	16.81	2.70	498	1.51	0.131
	Female	233	16.42	3.12			
Pedagogy	Male	277	42.01	5.87	498	1.43	0.152
	Female	233	41.16	7.34			
Technology	Male	277	29.57	3.39	498	0.992	0.322
	Female	233	29.27	3.24			
Resource	Male	277	16.70	2.18	498	0.335	0.738
	Female	233	16.76	2.22			
Assessment	Male	277	24.87	3.42	498	.998	0.319
	Female	233	24.55	3.86			
Moral	Male	277	33.90	4.31	498	0.517	0.606
	Female	233	33.71	3.75			
Communication	Male	277	16.70	2.25	498	2.04	0.041
	Female	233	16.28	2.37			
Cooperation & Collaboration	Male	277	129.61	2.57	498	0.938	0.349
	Female	233	129.38	2.97			
Citizenship	Male	277	21.91	2.40	498	0.325	0.746
	Female	233	21.98	2.27			

To test the first hypothesis, a t-test was conducted. Based on the analysis result summarized in table 3, the above results reflect that no significant difference was established between the competences of male pre-service teachers and that of females in nine out of ten variables. However, a significant difference was established in one variable (8) in the favor of male pre-service teachers who had higher mean value (M=*16.70, SD=2.25)*, respectively, rather than in female pre-

service teachers who had (M=*16.28, SD=2.37)*, respectively. Overall, it can be concluded that no significant difference was established between practices of competence of males and that of female pre-service teachers, thus the null hypothesis was accepted.

Table 4. Comparison Between Competencies Practices of Public and Private Sector Pre-Service Teachers

Variable	Group	N	Mean	SD	df	T	p
Content knowledge	Public	319	21.15	2.36	498	0.790	0.430
	Private	181	20.98	2.12			
Pro-skill	Public	319	16.58	3.24	498	0.518	0.605
	Private	181	16.72	2.18			
Pedagogy	Public	319	41.57	7.22	498	0.253	0.800
	Private	181	41.73	5.24			
Technology	Public	319	29.79	3.03	498	3.17	0.002
	Private	181	28.81	3.71			
Resource	Public	319	16.81	2.23	498	1.10	0.270
	Private	181	16.58	2.14			
Assessment	Public	319	24.82	3.85	498	0.730	0.465
	Private	181	24.57	3.20			
Moral	Public	319	33.90	4.23	498	0.618	0.537
	Private	181	33.66	3.78			
Communication	Public	319	16.49	2.44	498	0.251	0.802
	Private	181	16.55	2.08			
Cooperation & collaboration	Public	319	129.51	2.93	498	.044	0.965
	Private	181	129.50	2.41			
Citizenship	Public	319	21.96	2.33	498	.272	0.786
	Private	181	21.90	2.39			

To test the second hypothesis, a t-test was conducted. Based on the analysis result summarized in table 4 the above results reflect that no significant difference was established between the competences of public pre-service teachers and that of private in nine out of ten variables. However, a significant difference was established in one variable (4) in the favor of public pre-service teachers who had higher mean value (M=*29.79, SD=3.03)*, respectively, rather than in the private sector who had (M=*28.81, SD=3.71)*, respectively. Overall, it can be concluded that no significant difference was established between practices of competence of the public and that of private-sector pre-service teachers, thus the null hypothesis was accepted.

Table 5. Comparison of Pre-Service and In-Service Teacher Practice there is no Significant Difference Between Competencies Practices of Pre-Service Teachers and In-Service Teachers

Variable	Group	N	Mean	SD	df	T	p
Content knowledge	Pre-service	445	21.05	2.33	497	0.790	0.430
	In-service	54	21.42	1.77			
Pro-skill	Pre-service	445	16.50	3.01	497	3.07	.002
	In-service	54	17.77	1.34			
Pedagogy	Pre-service	445	41.34	6.84	497	2.77	.006
	In-service	54	43.96	2.87			
Technology	Pre-service	445	29.30	3.43	497	2.50	.013
	In-service	54	30.50	1.93			
Resource	Pre-service	445	16.68	2.27	497	1.34	.179
	In-service	54	17.11	1.43			
Assessment	Pre-service	445	24.59	3.77	497	2.30	.022
	In-service	54	25.79	1.80			
Moral	Pre-service	445	33.65	4.20	497	2.46	.014
	In-service	54	35.09	2.34			
Communication	Pre-service	445	16.34	2.40	497	2.13	.033
	In-service	54	17.14	1.26			
Cooperation & Collaboration	Pre-service	445	129.39	2.86	497	2.66	.008
	In-service	54	130.44	1.25			
Citizenship	Pre-service	445	21.89	2.40	497	1.22	.220
	In-service	54	22.31	1.86			

The above results reflect that a significant difference was established between the competences of pre-service teachers and that of in-service teachers in seven out of ten variables. However, a significant difference was established in seven variables (2, 3,4,6,7,8, and 9) in the favor of in-service teachers who had higher mean values 17.77, 43.96, 30.50, and 25.79, 35.09, and 130.44, respectively, rather than in pre-service teachers who had 16.50,41.34, 29.30, and 24.59,33.65, and 16.34, 129.39), respectively. Overall, it can be concluded that a significant difference was established between practices of competence of in-service teachers and that of pre-service teachers, thus the null hypothesis was rejected.

Discussion and Conclusion

This study aimed to examine the pre-service teacher competencies in terms of content knowledge, professional skills, pedagogical skills, resource deployment, use of technologies, collaboration and cooperation, assessment, moral and social

competence, and citizenship based on the variable gender, sector, and pre-service and in-service teacher. Teacher competencies refer to effectively and efficiently utilization of knowledge, skills, and attitude to carry out teaching career (Education, 2017). The understanding of the preparation of teachers is essential, as the literature derived on the teacher education program may reshape the offered courses, to be able to modify and develop these competencies among prospective teachers. Based on the finding s, it has been reflected that generally, the prospective teacher showed no significant difference in particular competencies when compared between the public and private sector and gender. The only significant difference was seen in in-service teacher competencies, where in-service show high means score in particular competencies practices as compared to the pre-service teacher. Most participants strongly agreed that they learned the specific competencies and practicing these competencies during teaching practice and after the accomplishment of pre-service teacher training. These competencies are the essential goal of educational systems. These competencies are referred by Walid et al., (2010) i.e. collaboration, use of technologies, citizenship, moral and social competencies, Resource deployment competencies, Communicational competencies, Build and maintain learning partnerships with learner/good citizenship, etc. These competencies are also incorporated in National Professional Standards (2009) to enhance quality education (Sahito & Vaisanen, 2017) that are basic steps toward globalization intended by Pakistan Government. The communicational skills, honesty and dedication to the job, quality of job performance, resourcefulness, creativeness, inventiveness management quality and readiness to task performance are the most essential qualities for the teacher (Ranjan & Rahman, 2003). Collaboration among teachers refers to the sharing of knowledge, ideas, and issues regarding job and learning which is helpful for pre-service teachers (Darling-Hammond, Wei, & Andree, 2010). Shulman (1987) firstly introduce the pedagogical content knowledge as an ideal for explaining how teachers gain new considerate content knowledge that they teach in class and how these considerate affect their teaching-learning process.

The development of pedagogical knowledge includes teachers' application and incorporation of a distinct group of teacher knowledge as they design and demonstrate. For prospective teachers, several categories of knowledge like knowledge about pupils, subject matter, educational context, content knowledge, particular pedagogical knowledge, are attained through teacher educational courses (Abell, 2007). Whereas it is problematic for teachers to identify how their content knowledge creates coordination for practices and it is criticized by pre-service and in-service teachers that practically pedagogical knowledge is not concerned with the teacher (Halim, M. Meerah, & Buang, 2010). The result of his study shows that pre-service teachers are competent in content knowledge but not in pedagogical knowledge (Halim, M.Meerah, & Bunag, 2010; Pinamang & C,

2017). It is recommended by Pinamang & C, (2017) opportunities should be provided to prospective teachers that what they are going to teach at ground level.

According to Darling Hammond (2000), the success of learners depends on the pedagogical and content knowledge of the teacher. A study was conducted by Udomkan & Suwannoi, 2018 result of their research shows that the pre-service teacher education program improves their pedagogical skills that increase their confidence and effectiveness for their future. It encompassing lesson plans, teaching strategies, assessment, blend of pedagogy and content in the classroom, and micro-teaching. This study also reveals that science pre-service teachers made a progression in the knowledge of every aspect of pedagogical content knowledge through the teacher education program. The result of this study also shows that teacher content and pedagogical competence on bases of gender have no differences they learn and practice the same competences learn during teacher education programs. To solve learner problems, the pr-service teacher must have proper pedagogical skills and content knowledge (Depaepe, Roy, Torbeyns, & Kleickmann, 2018).

In terms of quality of education, it highlights that pre-service teachers are working toward sustainability. The current study emphasis on the significance of core teaching skills that must be taught to prospective teacher. Core competencies address the group of objectives (Ranjan & Rahman, 2003). If teachers learn these skills, they will be able to earn and perform other skills that facilitate them in making an effective teacher (M.S.Bawa & Nagpal, 2010). It highlights that pre-service teachers are working toward sustainable development at the local level. These are the basic components of an effective and quality teacher education program and professional development. So, the pre-service teacher education program can focus on these variables and plan their orientations according to the perceived lack of prospective teachers.

This result creates a sense when looking at the courses' offered during semesters, which has been planned step by step improvement. Competencies of pre-service teachers are not only based on professional skills, pedagogical or technological but other factors i.e. citizenship, assessment, social and moral skills are also important. It is more essential to consider that teachers must be trained and master in pedagogical and technological and content skills before entering in the actual field.

As a conclusion, this study has ultimately inferred that prospective teachers have an optimistic acceptance of practicing those competencies during their teaching practices and enthusiastic to do after the accomplishment of their degree. On the other hand, various improvements are needed to make sure that the above-mentioned factors are functional and revealed in all courses of the teacher education program. Moreover, these competencies may be accepted and applied not only to pedagogical skills, content knowledge, or technology but have to be
 mutually covered by all (Abbitt, 2011).

References

Abbitt, J. T. (2011). An investigation of the relationship between self-efficacy beliefs about technology integration and technological pedagogical content knowledge (TPACK) among preservice teachers. j*ournal of Digital Learning in Teacher Education*, 134-143.

Abell, S. K. (2007). *Handbook of Research on Science Education.* Mahwah, NJ: Lawrence Erlbaum Associates.

Bandura, A. (1989). Social cognitive theory. In R. Vasta, *Annals of Child Development* (pp. 1-60). Greenwich: CT: JAI Press.

Bellah, R. N., Madsen, R., Sullivan, W. M., Swidler, A., & Tipton, S. M. (1985). *Habits of the Heart: Individualism and Commitment in American Life.* University of California Press.

Bertschy, F., Künzli , C., & Lehmann , M. (2013). Teachers' Competencies for the Implementation of Educational Offers in the Field of Education for Sustainable Development. *sustainability*, 5068-5080.

Boyers, E. L. (1997). *Scholarship reconsidered: Priorities of the professoriate.* San Francisco: Jossey-Bass.

Brauer, J. (2010). Teacher creativity and teacher professional competency. *Teacher/Mentor*, 1-22.

C, T. S. (2004). *Reflective Practice in Action:80 reflection Breaks for Busy Teacher.* Thousand Oaks, CA: Corwin Press.

Chong, S., Choy, D., & Wong, A. L. (2008). *Pedagogical Knowledge and Skills of Preservice Primary School Teachers.* AARE Conference.

Cochran-Smith, M. (2004). Taking Stock in 2004: Teacher Education in Dangerous Time. *Journal of Teacher Education*, 12(3), 247-256.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education.* USA: Taylor & Francis e-Library.

Darling-Hammond, L. (2006). Constructing 21st Century teachers education. *Journal of Teacher Education*, 300-314.

Darling-Hammond, L. (2014). One Piece of the Whole: Teacher Evaluation as Part of a Comprehensive System for Teaching and Learning. *American Educators*, 4-14.

Darling-Hammond, L., Wei, R. C., & Andree, A. (2010). *How High-Achieving Countries Develop Great Teachers*. Lasuen Mall Stanford: Stanford Center for Opportunity Policy in Education.

Dean, T., & McMullen, J. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, 22, 50-76.

Depaepe, F., Roy, P. V., Torbeyns, J., & Kleickmann, T. (2018). Stimulating pre-service teachers' content and pedagogical content knowledge on rational numbers. *Educational Studies in Mathematics*, 197-216.

Dewwy, J. (1916). *Democracy and Education, An Introduction to the Philosophy of Education*. New York, Macmillan.

Dictionary, O. O. (n.d.). Retrieved February 11, 2020, from https://www.google.com/search?q=meaning+of+sustainable&oq=menaing+of+sust&aqs=chrome.1.69i57j0l5.9776j1j8&sourceid=chrome&ie=UTF-8

Darling-Hammond, L., & Bransford, J. (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco, CA: Jossey-Bass.

Education, M. o. (2017). *Generic Teaching Competence*. Ankara: Head Office of Teacher Training and Development.

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 1013-1055.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to Design and Evaluate Research in Education*. America New York: McGraw Hill Companies.

Friedman, T. L. (2005). *The world is flat: A brief history of the twenty-first century*. New York: Farrar, Straus, and Giroux.

Fullen, M., & Hargreaves, A. (1992). *Teacher Development and Educational Change*. New York: The Falmer Press.

Garet, M. S., Porter, A., Desimon, L., Birman, B., & Yoon, K. S. (2001). What makes Professional Development Effective? Results from a National Sample of Teachers. *American Educational Research Journal*, 915-945.

Gatlin, D. (2009). A Pluralistic Approach to the Revitalization of Teacher Education. *Journal of Teacher Education*, 469-477.

Gay, G. (2005). *A synthesis of scholarship in multicultural education.* Naperville, IL: North Central Regional Educational Laboratory.

Halim, L., M. Meerah, T., & Buang, N. A. (2010). Developing pre-service science teachers' pedagogical content knowledge through action research. *Procedia Social and Behavioral Sciences*, 507–511.

Hawley, W., & Valli, L. (1999). *The Essentials of Effective Professional Development: A New Consensus. In L. Darling-Hammond, & G. Sykes (Eds.), Teaching as the Learning Profession: Handbook of Policy and Practice.* San Francisco, CA: Jossey-Bass.

Jumani, N. B. (2007). *STUDY ON THE COMPETENCIES OF THE TEACHERS TRAINED THROUGH DISTANCE EDUCATION IN PAKISTAN.* Islamabad: Allama Iqbal Open University Islamabad, Pakistan.

Jumani, N. B., & Abbasi, F. (2015). Teacher Education for Sustainability in Pakistan. *common creativeness attribution*, 1-5.

Karasar, D., & Eggen, P. (2005). *Introduction to Teaching: Becoming a professional.* Upper Saddle River, NJ: Pearson Education.

Kervin, L. K., & Turbill, J. (2003). Teaching as a craft: Making links between preservice training and professional practice. *English Teaching: Practice and Critique*, 22-34.

Killen, R. (2005). *Effective Teaching Strategies: Lesson from Research and Practices.* Australia: Thomson.

L.R.Gay, Mils, G. F., & Peter, A. (2012). *Educational Research Competencies for Analysis and Applications.* United State of America: Pearson Education, Inc.

Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 465-491.

Laitsch, D. A., Heilman, E. E., & Shaker, P. (2002). Teacher Education, Pro-Market Policy and Advocacy Research. *Teaching Education*, 13(3):251-271.

Lubanga, F. X. (2011). *Competency Profile for the Primary School Teacher in Uganda.* Uganda: Ministry of Education and Sports.

M.S.Bawa, & Nagpal, B. M. (2010). *Developing Teaching Competencies.* Daryaganj, New Delhi: Vinod Vasishtha for Viva Books Private Limited.

Mangin, M. M., & Stoelinga, S. R. (2010). The Future of Instructional Teacher Leader Roles. *The Educational Forum*, 49-62.

Mangin, M., & Stoelinga, S. (2009). *The Future of Instructional Teacher Leader Roles.* The Educational Forum, Kappa Delta Pi.

MEB. (2006). *Generic teacher competencies.* Ankara: Turkish Republic Ministry of National EducationGeneral Directorate of Teacher Training.

MEB. (2008). *Öğretmenlik yeterlikleri.* Ankara: Öğretmenlik mesleği genel ve özel alan yeterlikleri.

Medley, D. M. (1982). Teacher competency testing and the teacher educator. *Association of Teacher Educators and Bureau of Educational Research in Charlottesville*, 1-43.

Merriënboer, J. J., & KirsChner, P. (2007). Ten Steps to Complex Learning: A New Approach to Instruction and Instructional Design. 244-253.

Merrienboer, J. J., Clark, R. E., & Croock, M. B. (2002). Blueprints for complex learning: The 4C/ID-model. *Educational Technology Research and Development*, 39-61.

National Academies of Sciences, E. a. (2018). *Supporting Mathematics Teachers in the United States and Finland: Proceedings of a Workshop.* Washington, DC: The National Academies Press.

OECD. (2010). *Teacher Professional Development: Europe in international comparison.* Office for Official Publications of the European Union.

Pedro, J. (2006). Taking Reflection into the Real World of Teaching. *KAPPA DELTA PI RECORD*, 129-132.

Ploum, L., Blok, V., Lans, T., & Omta, O. (2017). *Toward a Validated Competence Framework for Sustainable Entrepreneurship.* Wageningen, Netherlands: SAGE Publications.

Ranjan, N., & Rahman, N. (2003). *Role of Teacher in Enhancing Learning Achievement of Child & Emphasis on Teacher Skill Development, Knowledge Building, and ICT.* India: OneWorld South Asia.

Richardson, V., & Placier, P. (2001). Teacher Change. In V. R.'s son, *handbook of research on teaching 4th ed* (pp. 905-47). New York: Macmillan.

Rieckmann, M. (2011). *Developing Key Competencies for Sustainable Development.* Leuphana University of Lüneburg: Institute for Environmental and Sustainability Communication.

Rogers, E. M. (2003). *Diffusion of Innovations (5th Ed).* New York: Free Press.

Sahito, Z., & Vaisanen, P. (2017). Dimensions of Quality in Teacher Education: Perception and Practices of Teacher Educators in the Universities of Sindh, Pakistan. *International Journal of Higher Education*, 44-54.

Schon, D. A. (1983). *The reflective practitioner: How professionals think in action.* New York: Basic Books.

Schon, D. A. (1996). *Educating the Reflective Practitioner. Toward a New Design for Teaching and Learning in the Professions.* San Francisco, CA: Jossey-Bass.

Selke, M., & Alouf, J. (2004). *Position Framework.* Association of Teacher Educators.

Stronge, J. H., Ward, T. J., & Gran, L. W. (2011). What Makes Good Teachers Good? A Cross-Case Analysis of the Connection Between Teacher Effectiveness and Student Achievement. *Journal of Teacher Education*, 339–355.

Sturgis, C., & Patrick, S. (2010). When Success Is the Only Option: Designing Competency-Based Pathways for Next Generation Learning. *Nellie Mae Foundation Education*, 42.

Subba, D. (2014). Democratic Values and Democratic Approach in Teaching: A Perspective. *Science and Education Publishing*, 37-40.

UNESCO. (2005-2014). *UN Decade of Education for Sustainable Development.* Paris: United Nations Educational, Scientific Cultural Organization.

UNESCO. (2005-2014). *United Nations decade of education for sustainable development.* Paris: international implementation scheme, UNESCO, Paris.

UNESCO. (2012). *Education for sustainable development.* Paris: United Nations Educational, Scientific and Cultural Organization.

Urdu, W. (2018, 07 22). *http://urdu.wordinn.com/sustainable.* Retrieved 07 22, 2018, from www.goggle.com: http://urdu.wordinn.com/sustainable

Vygotsky, L. (1980). *Mind in Society: The Development of Higher Psychological Processes.* Cambridge: Harvard University Press.

Webster, M. (2020, February 24). *https://www.merriam-webster.com/dictionary/practice.* Retrieved from Google Chrome.

Yuksel, İ., & Saglam, S. (2018). Are pre-service teachers competent enough? Across-sectional analysis of ELT pre-service teachers perceived teacher competencies. *European Journal of*