



RESEARCH PAPER

Perceptions of Teacher Educators about Integration of (ESD) in Elementary Teachers Education Program

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PAPER INFO	ABSTRACT
<p>Received: July 03, 2021</p> <p>Accepted: October 15, 2021</p> <p>Online: October 20, 2021</p> <p>Keywords: B.Ed. 4 Years Elementary Curriculum, Sustainable Development, Integration, Teacher Education</p> <p>*Corresponding Author: rukhsana.durrani @aiou.edu.pk</p>	<p>Education and sustainable development have a close relationship as education provides sustainability to society. This study explored the perceptions of teacher educators for integration of Education for Sustainable Development (ESD) in B.Ed. 4 years' elementary program.</p> <p>Four major components of ESD i.e., Education, Social & Culture, Economic and Environment were included in study. 127 teacher educators from departments of education were randomly selected from public universities of Pakistan who were offering B.Ed. 4 years' elementary program. Data was collected through questionnaires from teacher educators. The findings recommended the inclusion of the components of Education for Sustainable Development (ESD) in curriculum of B.Ed. 4 years' elementary program.</p>

Introduction

Teacher Education and sustainability has a close relationship. Teachers are the most influential source for achieving sustainability (Esa, 2010). It is realized on a global level that the current economic trends are not sustainable, societies all over the world are facing serious environmental and cultural problems, so there is a need of public awareness and teachers training regarding sustainability to ensure the quality of life of all communities on earth (Rickinson, 2001). Teachers are the social agent of bringing change in society. Trained teachers can positively affect the behavior and attitudes of students for Sustainable Development Goals as it is reflected from the research of Anderson (2017) which states that there is a need of full integration of ESD in teacher education course work. This may provide them adequate knowledge of the concept of sustainable development, and they can play better role in educating the students for sustainable future. It is

significant for the teachers to have pedagogical, intercultural, and social communication competencies and skills (Trosellj, Papak & Zuljan, 2021) and teacher education at pre-service stage has a foundation role in making the professional vision and pedagogical skills of the prospective teachers (Kassymova, G., & Ciftci, H, 2020). Thus, pre-service teachers training need to be reoriented according to the current global trends and requirements in order to equip the prospective teachers for solution of emerging problems of society (Evans, 2012). The research of Alolaywi (2020) also emphasized on the revision of teacher curriculum and teaching practices for effective classroom instruction. Therefore, the training of prospective teachers based on the components of ESD become indispensable.

The research of Tomas, Girgenti, and Jackson (2017) and Samuelsson & Kaga (2008) states that sustainability may be achieved through teachers' education as ESD based curriculum can enable the teachers to change the behavior, values and skills of individuals for solution of economic, environmental and social problems. On the other hand, teacher educators have also a crucial role in training of the prospective teachers as it is arguing by the research of (Bentham, Sinnes, & Gjotterud, 2015) that expertise on the part of faculty members is also essential to deliver the ESD based curriculum to prospective teachers in its true spirit. ESD is a powerful source which push forward the society for more sustainable future. The role of higher education especially teacher education become very important as it educates the professionals of tomorrow who provides services to the communities. But the concept of ESD normally overlooked in practice and pedagogy in classrooms of higher education. This might be due to lack of resources or pedagogical constraints (Tomas et al., 2017).

Sustainable development may be defined through different ways, but Brundtland Commission Report has its original explanation which states that, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UNO, 1987). So, it can be derived from this definition that there is a need to sensitize the individuals about utilization and consumption of resources. But it needs to change the attitudes of the individuals towards the needs of others. However, it can be made possible through provision of proper training to citizens since their early ages in schools through teaching.

The success of any educational system depends upon the trained teachers (Louis, Leithwood, Wahlstrom, & Anderson, 2010). Teachers have a positive role in maintaining sustainability (Sadaf & Huma, 2021) and execution of the educational policies, therefore investment on teacher education is not only beneficial for teachers but also for community (Tilbury, 1995) as they have a transforming role. But in there is very less investment on training of teachers or teacher education which results their incapability of managing not only with classroom problems but also educating the individuals for coping with emerging societal problems. However, the research of Natividad. A (2020) reflected that teacher education become more demanding as ever before, therefore, the teacher education institutions need to rethink to provide such training to prospective teachers which enable them to cope with the challenges of 21st century. The research of Tuncer, Tekkaya, Sungur, Cakiroglu, Ertepinar, & Kaplowitz (2009) also discuss that insufficient teachers training is a weak factor which hinders efforts of environmental protection and teaching of ESD curriculum.

Generally sustainable development has three main key areas i.e., are economic, social, and environmental and there is a need to interconnect these three areas with teacher training curriculum (Arima, Konare, Lindberg, & Rockefeller, 2006). To learn about the role of teacher education and sustainable development it is essential to integrate knowledge of the main components of ESD i.e., social, economic, and environmental in pre-service training of teachers because it will provide deep understanding of social and environmental issues to teachers (McKeown, 2006).

Growing population consume more resources which create imbalance between the production and consumption of resources (Cough & Scott, 2007) and this is one of the major challenges in current scenario on glob. So, there is a need of such teachers training which create future vision in people for systematic solution of problems and preservation of resources (Tilbury & Mula, 2009). Therefore, reorientation of education and teachers training become the main focus of attention all over the world (Sisitka, Shumba, Lupele, and Wilmot, 2017).

The contemporary world is facing the challenging problems such as climate change, gender disparity, lack of tolerance, economic development, consumption and production of resources, population growth, disaster risks, chemical imbalance, and environmental damages of growing population and increasing rate of consumption of resources. It is essential to pay special devotion to these problems. Consequently, the concept of ESD become more important as before. Therefore, education for sustainable development is a preferred option to overcome these problems (Samuelsson & Kaga, 2008). But the research have shown that primary school level teachers have less knowledge of ESD. Similarly, the curriculum of B.Ed. 4 years' elementary program has also gapes related to the concepts of ESD and the knowledge about ESD is missing even in the objectives of the curriculum of B.Ed. 4yraes program. Though, the knowledge of different concepts of ESD become indispensable both for teachers and students in the changing scenario on global level. (Turncer et al., 2009).

The United Nations Decade of Education for Sustainable Development (2005-2014) grasp the attention of nations to reorient their educational programs in the light of ESD. Therefore, many countries such as UK, USA, Japan, Canada, Belgium, and France etc. introduced many programs and training kits for different level of education from early childhood to higher education to create awareness about ESD (UNESCO,2007). But there is a less work on ESD in Pakistan beside major social, environmental, and economic problems. The curriculum of B.Ed. 4years program was revised during 2012 but the concept of ESD is not reflected in the curriculum. The study of Jumani & Abbasi (2015) shows that there is a gap between the concept of ESD and teacher education of B.Ed. 4 years elementary program and the concept of ESD is no reflected in the contents, even it is missing in the objectives of teacher education curriculum. To achieve the goal of UNO of transforming the world towards a sustainable future by 2030, there is a need of integration of the components of ESD in curriculum of teacher education to equipped them with training and knowledge of the concept since their pre-service education. Therefore, the current study was conducted with main purpose to investigate the perceptions of teacher educators about integration of education for sustainable development (ESD) in teacher training program of B.Ed. 4 years.

Hypothesis

There is no significance difference between the opinion of teacher educators for integration of the components of ESD in teachers training curriculum of B.Ed. 4 years' elementary program.

Material and Methods

It was a quantitative research and survey was used to collect data. The population of this research comprised (146) teacher educators of those (15) formal and public universities of Pakistan, who were offering B.Ed. 4 years' elementary program. The basic purpose of the sample is to deliver information about population. Keeping in view the importance of representative sampling, random sampling techniques was used for collection of data from the subjects. Among 15 public universities of Pakistan 10 universities were selected through random sampling technique, similarly (127) teaching faculty members (who were teaching to students of B.Ed. 4 years program) from (146) faculty members from department of education of sampled universities were also randomly selected. A questionnaire was developed for collecting the data from teacher educators. The four main areas of ESD i.e., environment, society and culture, economics and education were derived from review of literature and were focused on the questionnaires respectively. It was a closed ended questionnaire with 5 point Likert scale. The questionnaire was validated by putting forward it to five experts from the relevant fields. Some changes were made in the light of their opinion to make it more clear for respondents. Pilot testing was conducted on 30 respondents who were not included in actual sample of the research. The alpha coefficient of the instrument was calculated with value of (Cronbach's alpha =0.84).

The data was collected from the faculty members of department of education of ten sampled universities. For this purpose, a focal person was approached in each university who was given the responsibility of collecting and distribution of questionnaires among faculty members. Permission and time schedule were fixed with the faculty members in advance to avoid wastage of time. Both type of inferential and descriptive statistics was used for analysis of data.

Results and Discussion

To answer the main question of the research study that whether the components of ESD need to be integrated in B.Ed. 4 years' program? And to test the null hypothesis, descriptive and inferential statistics were applied. The overall results of research show that teacher educators recommended the integration of the components of ESD in teacher education of B.Ed. 4 years' program. Below table reflects the quantitative results of the research study.

Table 1
Descriptive Statistics of the Components of ESD

Components of ESD	Mean Values	Std. Deviation
Social & culture	19.57	3.05
Education	19.38	2.734

Environment	17.87	3.990
Economics	18.26	3.530

Table 1 shows that the mean value for the social & culture component of ESD is 19.57 while the value of Std. Deviation for the same component is 3.05. Similarly, the mean value of the component of Education of ESD is 19.38 whereas the St. Deviation for this component is 2.734. The mean value of the environment components of ESD is 17.87 with the Std. Deviation of 3. 990. The component of economic has a mean value of 18.26 with the Std. Deviation of 3.53. The mean values of the opinion of teacher educators in the above table show variation, therefore, it is derived from the above mean values that the difference between the components of ESD exists. Therefore, ANOVA statistics were applied to find out where the difference is existing.

Table 2
ANOVA Statistics Score of the Components of ESD

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	263.259	3	87.753	7.753	.000
Within Groups	5670.634	501	11.319		
Total	5933.893	504			

The results of the Table No:2 shows that F Value (7.753) and p value (.000) is significant at 0.05 level. It means that null hypothesis is rejected, and the significant difference is found between the components of ESD. To find out that which components of ESD is significantly make difference, Post Hoc Test was applied.

Table
3 Post Hoc Analysis of the components of ESD

	(I) category	(J) category	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
						Lower Bound
LSD	Social & Culture	Education	.196	.425	.645	-.64
		Environment	1.701*	.422	.000	.87
		Economics	1.315*	.422	.002	.49
	Education	Social & Culture	-.196	.425	.645	-1.03
		Environment	1.505*	.425	.000	.67
		Economics	1.119*	.425	.009	.28
	Environment	Social & Culture	-1.701*	.422	.000	-2.53
		Education	-1.505*	.425	.000	-2.34
		Economics	-.386	.422	.361	-1.22
	Economics	Social & Culture	-1.315*	.422	.002	-2.14
		Education	-1.119*	.425	.009	-1.95
		Environment	.386	.422	.361	-.44

Table No: 3 shows that the social & culture and education component of ESD are not significantly different with the p value of (.645) while the social & culture and environment components of ESD are significantly different with the P value of (.000). Similarly, the significant difference was found between the opinion of teacher educators for the components of Social & culture and economics at P value of (.002). Likewise, the above table shows that there is a significance difference between the opinion of teacher educators for the ESD component of Education and environment and education and economic with the P value of (.000) and (.009) respectively. The components of environment and economics were also significant with the p value of (.361). So, it is derived from the above table that the components of social & culture and education and the components of environment and economics have not significantly difference in the light of the perception of teacher educators.

**Table 4
Homogeneous Sub-sets Analysis of components of ESD**

	Components	N	Subset for alpha = 0.05	
			1	2
Duncan ^{a,b}	Environment	127	17.87	
	Economics	127	18.26	
	Education	124		19.38
	Social & Culture	127		19.57
	Sig.		.363	.644

The results of table No 3 shows that the components of environment and economics have homogeneous mean values and can be place under one homogeneous set while the components of education and social & culture have homogeneous mean values and can be place in homogeneous sub-set while addressing the components of ESD in teachers training curriculum.

Discussion

The findings of the study show that most of the teacher educators were of the view that ESD is essential to be incorporated in curriculum of pre-service teachers training. This might be due to the reason that teachers are the most powerful social agents to bring positive change in attitude and behavior of individuals. This study significantly reflected that a trained teacher who has an adequate knowledge of ESD can further provide good training to students for future vision of solving societal and environmental problems. There are very few research conducted on ESD and teachers training in Pakistan however the findings of this study supported by the research of Jumani & Abbasi (2015) which argue that socio-economic change can be brought through teachers, therefore, it is necessary to reorient teachers training curriculum in the light of ESD. Their research further stated that the objectives of ESD are missing in pre-service teachers training curriculum which results less knowledge of ESD of prospective teachers. Elementary level of education is the stage where the teachers change the believes and attitudes of students, therefore, the training of teachers at elementary level become more crucial, therefore, the current research endorsed the inclusion of ESD in the teachers training program to create awareness in students since their early school about a sustainable society. This argument is also supported by the

research of Liu (2009) which discusses that the integration of the knowledge of ESD in the contents of teachers training curriculum is important to reduce the major problems such as low literacy rate, peace, intercultural understanding, terrorism, and extremism from society.

This research study may positively contribute to training of prospective teachers as ESD based training can enable them to address the problems of lack of tolerance, environmental damages, and utilization of resources in their day to day teaching. The research of Evan (2012) conducted on various teachers training programs in Australia also revealed that the curriculum based on ESD, can enable the teachers to relate their teaching learning process to environmental and social systems in their local situation.

The research of Thomas et al. emphasized on integration of education for sustainable development in pre-service teacher training program. Their study elucidates that the student teachers acclaimed that education for sustainable development is relevant to their degree program as it may make them better understanding of the concept of ESD which may result informed teaching to students about sustainability. Therefore, the current study may have significance for teachers training. The results of the current research are also in harmony with the research findings of Laurie et al. which argue that the knowledge of ESD can contribute to professional development of teachers and ultimately in maintenance of a sustainable society through integration of the contents of ESD in curriculum in local, environmental, social, and economic context.

The research study reflected that the need of integration of the concept of ESD in pre-service teacher education is strongly recommended by the teacher educators. The finding of the current study is in lined with research of Esa (2010) which revealed that there is need of integration of the concept of ESD in teacher education because the findings reflected that those teachers who were have a good knowledge of concept of environment, they displayed good practice regarding teaching about change of climate, environmental pollution, and recycling of resources. This further support the research of Tuncer et al., (2009) that the awareness about preservation of natural resources and environmental problems and issues may be solved when the teachers themselves have good knowledge of environmental literacy.

In the light of the objectives of the study regarding perception of teacher educators about inclusion of ESD in the curriculum of teacher education of B.Ed. 4 years' program, the finding of the research endorsed the integration of the concept of ESD with its components of education, economics, society and cultural and environment in the curriculum of teacher education for pragmatic training of prospective teachers.

Conclusion

Teacher education is one of the main sources which can transfer the knowledge and skill of ESD. The students learning on ESD may not be fruitful if the teachers are not properly trained about ESD. Therefore, the current research provides quantitative evidence for integration of the concept of ESD in teacher education program. However, more research may be needed on the areas that where and how ESD can be integrated in the curriculum or subjects of teacher education. This study recommended that the curriculum

of B.Ed. 4 years' program might be revise in the light of the concepts of ESD to provide a sound training to prospective teachers. This is also recommended further research in the field such as to investigate the areas that where or in which subjects the components of ESD might be integrated.

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