Exploring Prospective Teachers' Perceptions of Transformational Leadership in Education for Sustainable Development: A Quantitative Study

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ABSTRACT

This research aims to investigate the perspectives and insights of prospective teachers on the role of transformational leadership in promoting Education for Sustainable Development (ESD). The study can provide valuable understanding of how future educators envision and implement sustainable development principles in their teaching practices. This study explored the perceptions of prospective teachers about sustainable development in context of influence of transformational leadership as change agent for improvement and development to enhance their transformational competencies. Five hundred prospective teachers were selected from Govt. and Private Universities of Lahore. A questionnaire was developed as a tool for data collection. Data was analyzed and interpreted. Mean and standard deviation was applied to know about the relationship of education for sustainable development and prospective teachers. Person correlational was applied to check the views of teacher for education sustainable development and transformational leadership.

Key Words: Education for sustainable development, transformational leadership, prospective teachers.

INTRODUCTION

The Education for Sustainable Development aims to open people's eyes in how they can change and start a sustainable life so that societies may undergo right transformations in the long run. (Ozturk, 2017). The UN's 2030 Agenda for sustainable development and the subsequent 17 sustainable development goals sought a better environment and, at the same time, a way forward. The fourth goal as well as the seventh target work towards improving quality education for everyone. (Giangrande et al., 2019).

Effective globalization is connected to the promotion of sustainable development, and education towards sustainable development. (Gough & Little, 2009). As the concept of globalization steadily unfolds and people strive to actualize the SDGs globally, the focus has now moved from a strict business economy style structure towards a wider concept of development that can be described as a triple bottom line system, people, planet, and profit. It is also recognized that legislation tools or technological approaches will not be sufficient for attaining the SDGs; however, modification of behavior and societal consciousness are also extremely significant for sustainable development. Thus, the function and extension services which are training and capacity development, extension education, popularization, applied/curative research, information dissemination, networks and partnerships and so on have become the key strategies for pursuing sustainable development goals. The SDG4 advocates for equal education for every person at all stages in life, sex, or disability and by origin right for education, this is in line with the SDG 16 that call to

foster communities that are inclusive and peaceful for sustainable development, justice and strong institutions. For further expansion of the SDG-4, It has got target where the phrase of 'quality education and promote lifelong learning opportunities for all. It also got objective which states that for make sure the quality Primary and Secondary education for all boys and girls with no cost makes sure that they got better and fair finding and ensure that they got better learning result to guarantee that end learners get sufficient expertise and competencies which relate to sustainable development.

Robert Wright, the author of A Short History of Progress, explains the fact indicating that the deepest levels of proficiency and expertise, which people possess and promote as significant, and traditions are often seen as obsolescent long before we reach our thirtieth birthday because of the kind of growth society experiences. Indeed, it can be argued that we have been rushing to acknowledge our own culture. Societies of hunters and gatherers boasted of this social structure as having a relatively more democratic setup in the ancient period. As Wright said, 'Leadership was shared, a tribal virtue, or an earned role, or the capacity to provide example'. Proper organization is the best way to induce authority and respect from the hunters' team members, furthermore if the hunter was successful, he got his meat in return. Leadership is a cross-cultural phenomenon which is evident in the world today. Leadership also continued to grow in its definition, and it can be considered from several perspectives and there are several opinions in such a way the roles of both leaders and subordinates have grown increasingly pronounced in terms of the complexity and advanced levels. The verb 'to transform' as a context pertains to alter something to such a significant extent that it is no longer recognizable or to change the condition of an individual or an object for the better. (Cambridge Dictionary, 2015). Transforming leaders provide a process that transform from self-interest of the followers into visions and missions of an organization through making and renewing relationship contracts in the followers and gaining the trust of followers in relation to visions and missions (Chitiga & M. 2018).

According to Stone, Russel, & Patterson (2004), Thus, culturally transformative leaders promote change in the school through improving the school environment as posited by (Stewart, 2006). This brings out the fact that leaders who use transformational leading styles and techniques vow to 'change' the followers, hence, setting many organizations that facilitate noble recognition of standard and acceptable norms. In this case, such an effect on followers makes the use of transformational leadership to have rapidly grown as the favorite approach to the majority of the study and implementation of leadership theory. In several respects, transformational leadership has assumed the position of favor and special status as cutting edge and beloved by scholars, practitioners, and students of leadership. (Bass & Riggio, 2006).

The factors social, economic and ecological that describes the ESD & TL perceptions of prospective teachers to a great extent is valid. The described approach to build the conflict-solving skills of students regarding sustainable education can lead to positive changes not just on the school level, but also on the macro level which means the city, enterprises or public institutions. At the moment, the modules in the Teaching for a Sustainable World project handbook indicate how environmental and development educations are related and provide assistance to teacher educators if they desire to link the two. An intensive expansion program between 1993 and 1994 included workshops in all faculties of education in Australia. (Fien & Demirel et al., 2018). In doing so, this research establishes the background by identifying the knowledge that the prospective teacher has of education for sustainable development as well as transformational leadership.

Objective

The objectives of the study are:

- Investigate the views of prospective teachers about education for sustainable development and transformational leadership.

- Explore the relation between education for sustainable development and transformational leadership skills of prospective teachers.

Significance of the Study

The implication of this research resides in enlightening the possibility of relationship of education for sustainable development and transformational leadership to transform and enrich the outlook of the future teachers to improve and implement the quality education for all. It is crucial to understand the potential future teachers' views about transformational leadership and education for sustainable development due to multifaceted influencing practitioners in the fields of education and sustainability, as well as leadership skills development.

The importance of teacher education for sustainable development and transformational leadership perceptions of prospective teachers is a vital contribution for all the stakeholders of the education system. The study supports progressing of institution-based teacher education programs for future researchers, offer and improve information for policy makers and educational administrators in designing and evaluation of different sustainable curriculum and efficient teaching programs.

LITERATURE REVIEW

From the theoretical perspective, according to (Ndarwa and Mulinge, 2023) there are four categories of transformational leadership behavior "idealized influence, intellectual stimulation, individualized consideration, and inspirational motivation" that any leader is to understand, learn, and apply in a certain manner in order to fulfill the certain tasks. If there is one thing, they are missing in the organization they will not be able to develop and sustain themselves and there will be a vice versa relationship between the managers and employers. according to Ngaithe et al. (2016), idealized influence is the ability of the transformational leader to explain the vision to the followers clearly, stimulate their direction, and function toward achieving it. Intellectual stimulation is an element of organizational learning and change as it involves appealing to the followers to achieve and develop in attractive ways (Jung et al., 2003). Individual consideration refers to the leader's support for employees and consideration of the subordinates' needs toward work-task achievements. Based on such needs, the leader guides and advices toward task completion (Zhang et al., 2024). As stated clearly, inspirational motivation refers to the leaders' clarifying and relaying visions to inspire and motivate their followers to achieve the established goals (Judson et al., 2024).

ESD stands for education that focuses on the protection of the environment. It is considered as a process of learning that brings environmental, economic and social sustainability to the delivery of education and operation of the school. Transformational leadership helps to explain the logic of change and transformation process by unlocking creativity, innovation and may be, the risk taking. In the context of Leadership at school the above postulates seem to suggest that, in leadership, the approach of transformational leadership enhance effectiveness of achieving the target of a school as it leads the teachers, learners, the broader community towards the path mapped out by the director of the learning institution. The critics of transformational leadership may defend that, innovation grown in the way mentioned above is elitist, male chauvinistic and too grand that contains the evidence of nobility in it (Marks et al., 2003).

The interpretation seems to capture argument that transformational leaders make their followers self-motivated to want more from the firm and act beyond self-interest for collective gain (Kanyimba et al., 2015). Whilst leadership and human resource management have been established as two key contingencies in the development of internal capacities and sustained competitive advantage for any organization (Leroy et al., 2018). A leader, through individual consideration, ensures subordinate personal commitment by dealing with their problems and by enhancing and maintaining the quality of their working life 'always' and offers vast and often support at various organizational levels which makes the followers feel easy to come up with new ideas and methods; therefore the value of the leader lies 'So,' if at all, it could just be

argued that transformational leaders can formulate a vision to help the followers perform their duties effectively Such transformational leadership behavior is understood broadly and researched intensively in the current literature as a variable that allows for the positive change in the desired behaviors among the employees (Bass & Riggio, 2006) & (Hoch et al., 2018).

METHODOLOGY

The methodology of research is the particular practical strategy used in the identification, collecting, processing, and analysis of data pertaining to a particular problem. The current study present correlational research aimed at exploring the connection between education for sustainable development and transformational leadership in the views of future educators. The sample of the study was all prospective teachers who registered in the teacher training programs. Stratified random sampling technique was used to sure that sample included both male and female prospective teachers from public and private universities of distract Lahore. The sample size was composed of 483 prospective teachers were given adequate amount of data for statistical consideration from selected five public and private sector universities. Sustainable development is independent variable while transformational leadership is dependent variable. the questionnaire was used to determine the relationship between education for sustainable development and transformational leadership on the perception of prospectives teachers. The data were collected through questionnaires by shared google form with the prospective teachers registered in educator training programs of selected universities. In order to collect the sample for this study we visited the selected five universities which are located in distract Lahore. The gathered data was organized and evaluated for clarification the relationship of education for sustainable development and transformational leadership in views of prospective teachers through different techniques. According to research hypothesis Pearson Correlation techniques were applied on knowledge of education for sustainable development of aspiring educators are positively correlated with their knowledge of transformational leadership. Independent t-test were applied to find out gender wise difference education for sustainable development and transformational leadership. ANOVA was applied for the analysis to find out universities' wise differences education for sustainable development and transformational leadership. Descriptive statics were applied to analysis or the respondence responses regarding education for sustainable development and transformational leadership in the views of prospective teachers. Mean and standard deviation were calculated by descriptive analysis.

Tool Development

A questionnaire consisting of 30 statements was used in this study. Statements related to two constructs i.e. the transformational leadership and education for sustainable development, response for each item was rated on five-point Likert scale ranging "strongly agree to strongly disagree". The instrument was self-developed which is prospective teacher's perception about ESD and transformational leadership questionnaire. The 15 items were related to transformational leadership and 15-items education for sustainable development. The questionnaire was subdivided into two parts; part I is associated with the ESD. It has three indices, namely economic sustainability, education sustainability and environmental sustainability. Part-II is connected to the notion of transformational leadership. It comprises of two sub elements namely; social & delegation of transformational leadership.

Validity and approving tool of the research were done by taking opinions from many academicians and research specialists to test the validity of the self-developed tool for this study. The instrument was pilot tested to ensure reliability. To guarantee the credibility of the questionnaire, pilot testing has been carried out at two universities, one is the public sector and the other is private sector. The reliability of tool ESD and transformational leadership was (α = .950). Cronbach's alpha value above 0.80, indicating that it has high internal consistency and reliability (Dhammika et al., 2013), making it a standard tool for measuring transformational leadership and education for sustainable development.

ANALYSIS

The gathered data was organized and evaluated for clarification the relationship of education for sustainable development and transformational leadership in views of prospective teachers through different techniques. According to research hypothesis Pearson Correlation techniques were applied on knowledge of education for sustainable development of aspiring educators are positively correlated with their knowledge of transformational leadership. Mean and SD was calculated through Pearson Correlation techniques, while the research was used to find out the relationship of education for sustainable development and transformational leadership in views of prospective teachers by applying inferential statistics. Independent t-test were applied to find out gender wise difference education for sustainable development and transformational leadership. ANOVA was applied for the analysis to find out universities' wise differences education for sustainable development and transformational leadership. Descriptive statics were applied to analysis or the respondence responses regarding education for sustainable development and transformational leadership in the views of prospective teachers.

Table 1

Relationship between education for sustainable development and transformational leadership, perception of prospective teachers

Variables	R	Sig
Education for sustainable development Transformational leadership	.775(**)	.000

This table exposed that the calculated r-value was .775 and sig was .000 that showed significant strong relationship between education for sustainable development and transformational leadership. This indicated that education sustainable development highly effected to the transformational leadership.

Views of prospective teachers about education for sustainable development and transformational leadership.

Table 2
Independent sample t-test for the analysis to find out gender wise difference in the opinion of respondent regarding education for sustainable development.

Gender	N	*M*	*SD*	*t*	*df*	Sig.
Male	193	57.64	8.608	.039	481	.292
Female	290	57.61	8.420			

α = .05

The above table discloses that the generated t-value (.039) <than table (1.966) value at 481 *df* and generated *p = .292 > than α* = .05 which bespeak that gender wise no statistically significant change was seen between the opinion of genders wise respondents about education for sustainable development. Concluding that male & female prospective teachers had the same opinion about education for sustainable development. Therefore, concluding that male and female prospective teachers had same opinion about the effectiveness of education for sustainable development

Table 2
Independent sample t-test to find out gender wise difference in the effect of education for sustainable development on transformational leadership regarding the group of gender.

Gender	N	*M*	*SD*	*t*	*df*	Sig.

Male	193	56.80	8.710	-.952	481	.351
Female	290	57.58	8.753			

α = .05

The above table disclosed that the generated t-value (-.952) <than table (1.966) value at 481 *df* and generated *p = .351 > than α* = .05 which bespeak that gender wise no statistically significant difference existed in the effect of education for sustainable development on transformational leadership. Therefore, concluding that gender wise prospective teachers had same opinion about the effectiveness of transformational leadership.

Table 3
Analysis of the Variance for the analysis to find out universities' wise differences in the opinion transformational leadership.

	SS	Df	MS	F	Sig
Between Groups	284.866	4	71.217	.933	.445
Within Groups	36489.680	478	76.338		
Total	36774.547	482			

α =.05

The above table (4.3b) disclosed that generated *F –* value .933 < that table (2.39) at 4, 482 *df* and generated *p* = .445 > α =.05 which bespeak that universities wise there is no statistically significant effect of education for sustainable development on transformational leadership. Concluding that university wise prospective teachers had the same opinion about the effect of education for sustainable development on transformational leadership. Therefore, concluding that universities wise prospective teachers had same opinion about the effectiveness of transformational leadership.

FINDINGS

The researcher conducted a study on the integrate education for sustainable development and transformational leadership as perceived by prospective teachers.

- There was strong relationship between education for sustainable development and transformational leadership.
- Education for sustainable development highly effected to the transformational leadership.
- Male and female prospective teachers had same opinion about the proficiency of education for sustainable development.
- Gender wise prospective teachers had same opinion about the effectiveness of transformational leadership.
- The universities wise prospective teachers had same opinion about the effectiveness of education for sustainable development.
- The same opinion about the effectiveness of transformational leadership university wise prospective teachers.
- A majority of prospective teachers believe that ESD should be an integral part of school curricula, contributing to preparing students for future environmental challenges, enhancing learning through interdisciplinary approaches, and incorporating social justice and equity. They also support hands-on activities, technology integration, and community involvement in ESD initiatives.

- Most prospective teachers feel confident in their ability to teach ESD concepts effectively, though a small minority expressed doubts. They also agreed that ESD should address both local and global environmental issues.
- The majority of prospective teachers understand key transformational leadership concepts, such as intellectual stimulation, individualized consideration, and role-modeling. They agree that transformational leaders should inspire others, build trust, empower people, and continuously seek feedback for improvement. However, some expressed disagreement on certain aspects of transformational leadership, such as building trust and recognizing its impact on organizational culture.
- Most prospective teachers feel prepared to implement transformational leadership principles in their future careers and recognize the importance of communication, emotional intelligence, and adaptability in leadership.

DISCUSSION

The outcome of education that there is a result of relationship between education for sustainable development and transformational leadership in the views of prospective teachers. Researcher found that there is strong relationship between education for sustainable development and transformational leadership. Research found that it is interpreted that the value is non-significance for all education for sustainable development and transformational leadership. The non-significant value that expressed that there is no significant difference between male and female about education for sustainable development and transformational leadership. The non-significant value that expressed that there is no significant difference between private and public sector universities about education for sustainable development and transformational leadership. The significant effect of ESD on transformational leadership indicates that incorporating sustainability principles into teacher education can cultivate leaders who are capable of driving systemic change in schools. (Davis,2014). The consistency in opinions between male and female prospective teachers regarding ESD and transformational leadership suggests a shared understanding of the importance of these concepts across genders. This is consistent with studies indicating that both male and female educators recognize the value of collaborative and transformative practices in teaching (McFarland et, al, 2018). The uniformity in opinions across different universities regarding the effectiveness of ESD and transformational leadership implies a collective recognition of their importance in teacher education. The majority agreement on the necessity of integrating ESD into the school curriculum underscores a critical shift towards sustainability in education. Research indicates that ESD enhances students' awareness and skills to tackle environmental challenges.

CONCLUSION

The study concludes that there is a strong, positive relationship between education for sustainable development (ESD) and transformational leadership among prospective teachers. Both male and female participants, regardless of their university affiliation, shared similar views on the importance and effectiveness of ESD and transformational leadership, indicating no significant differences based on gender or institutional background. The majority of prospective teachers recognized ESD as essential for preparing students for future challenges, promoting critical thinking, and fostering hands-on learning. They also emphasized the importance of integrating social justice and equity within ESD initiatives. Regarding transformational leadership, participants understood key concepts such as intellectual stimulation, individualized consideration, and role-modeling, and expressed confidence in applying these principles in their future careers. Communication, emotional intelligence, and adaptability were seen as vital leadership skills, with a strong consensus on the value of feedback for continuous improvement.

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