Social and Technological Competencies among Teacher Educators: An Exploratory Study

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Abstract

Technological developments, the emergence of new pathways in instructional practices, movements to make higher education institutions edgeless, borderless, and liquid have provoked the idea of introducing emerging trends in the field of teacher education. In the field of teacher education, the promotion of social justice and preparing teacher educators to develop good communication and technology-related skills among pre-service teachers has become a matter of serious concern. Teacher educators require competencies to communicate and connect with diverse learners as well as enriched technological expertise for performing adequately in the present scenario. This study was designed to explore the level of social and technological competencies among teacher educators and the promotion of these competencies among pre-service teachers. A mixed-method research design was applied for this study. Pre-service teachers from six teacher training institutions of two main provinces (Punjab and KPK) of Pakistan constituted the population of the study. 450 pre-service teachers were selected as a sample by using a stratified random sampling technique. Close-ended questionnaire and interview guide were developed for collecting data from pre-service teachers. To ensure the reliability of the instrument, pilot testing was conducted and the calculated value was 0.87. The validity of research instruments was explored by getting experts' opinions. Data were collected by making personal visits to sampled institutions. For data analysis, descriptive statistics and thematic analysis were employed. Results of the study indicated that pre-service teachers were satisfied with the social competencies of teacher educators but the delivery of these competencies among pre-service teachers is not satisfactory. Therefore based on the findings, it has been recommended that for promoting social and technological competence among pre-service teachers, training sessions may be arranged for teacher educators by concerned authorities.

Keywords: Teacher Educators, Social Justice, Technological Expertise, Teacher Training Institutes, Pre-Service Teachers

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Introduction

Teacher educators who are also called teachers of teachers have multiple roles and responsibilities in the area of teacher education. It has been indicated by Zeiger (2018) that teacher educators must be capable of interacting effectively with students, creating a safe learning environment, developing interactive lessons, utilizing varied teaching strategies, designing and administering effective assessments, identifying students' needs, communicating effectively with all educational stakeholders, collaborate with staff members, maintain a professional appearance, and demonstrate a professional commitment. They may act as a supervisor, supporter, education specialist, content expert, organizers of educational activities, innovators, researchers, members of teachers' professional organizations, partners for educational stakeholders/ educational communities, critical social participants during the professional development program that is being organized for pre-service or in-service teachers (Cochran-Smith & Villegas, 2015).

Likewise, it has been indicated by the European Commission (2013) that teacher educators are those experts who generally work at institutions of higher education and take the responsibility of teaching pre-service teachers and training in-service teachers at their respective institutions by participating in the various activities that are organized for their professional development. It has been explored by Vieira et al. (2009) that the wave of social transformation demands teacher educators to make required amendments in their instructional practices with the major aim of training students to meet the requirements of the 21st century. Trans-disciplinary practices are required to ensure the transformation of pedagogical practices as these practices can contribute a lot to the promotion of reflexivity, self-regulation, democracy, innovation, and creativity among pre-service and in-service teachers. Furthermore, it has been identified by Baumert and Kunter (2006) that the beliefs of teacher educators have significant effects on their instructional practices, therefore it is the responsibility of educational institutions' administrators to arrange such activities of professional development which may strengthen their pedagogical, social, content-related, and technological beliefs as well as competencies. Besides, it has been identified that teacher educators must know the diverse learning needs of students and innovative strategies that may be utilized to ensure imperative learning experiences for students.

Along with these capabilities, to promote social justice, equity, and diversity among students, teacher educators need to have social and moral competencies. A research study conducted by the Australian Institute of Training and School Leadership (AITSL, 2011) revealed that teacher educators are required to get involved in the activities of self-assessment and reflective practices to improve their professional, pedagogical, technological, and social competencies (Dervenis et al., 2022). They must be capable of developing, revising, and evaluating multiple instructional strategies to ensure successful learning experiences for students. They are expected to have detailed knowledge about the physical, intellectual, and social development of students to deal effectively with students who come from diverse cultural and economic backgrounds. Nuraini et al. (2021) indicated that technological competencies among teachers can improve not only their professional and pedagogical competencies but can have a positive impact on students' performance as well. Keeping in view their active role, it has been highlighted by Dengerink (2015) that there is a dire need to check the level of professional competencies or expertise among teacher educators.

Their competencies can be explored from various dimensions such as content-related knowledge, pedagogical expertise, social and technological skills, and so on. This study was designed to explore the level of social and technological competencies among teacher educators and the promotion of these competencies among pre-service teachers. Data were collected from pre-service teachers to determine the level of these competencies among teacher educators and to get information about the ways that are being utilized by teacher educators to promote these competencies among pre-service teachers.

Research Questions: To address the purpose of the study, following research questions were developed:

- How effectively teacher educators are reflecting social and technological competencies during their instructional practices?
- To what extent teacher educators are playing their role to make pre-service teachers responsible and professional individuals?
- What kind of initiatives teacher educators are taking for the promotion of moral and social values among pre-service teachers?
- What kind of technological tools teacher educators are using during their instructional practices?
- To what extent teacher educators are preparing pre-service teachers for facing societal changes and for making effective use of technology during instruction?

Significance of the Study: The findings of this study will be significant for teacher educators as it will support them to identify the areas of improvement and develop themselves professionally. Findings will be also supportive for pre-service teachers as well as they will be able to highlight the areas in which they are facing deficiencies and in this way can play a pivotal role in improving the quality of professional development programs. Not but not least, the findings of the study will be significant for administrators of higher education institutions to revise and update their policies regarding the professional development of pre-service and in-service teachers.

Literature Review

In the field of teacher education, the promotion of social justice and preparing teacher educators to develop good communication and technology-related skills among pre-service teachers has become a matter of serious concern. Darling-Hammond and Bransford (2005) stated that until and unless teacher educators themselves are socially, culturally, and technologically competent, it cannot be possible to promote these skills among pre-service teachers. Therefore, it is expected that teacher educators must acquire in-depth knowledge about societal changes, cultural activities, and economic conditions in those areas from where pre-service teachers are coming. It has been also identified by researchers (Gay, 2002; Cochran-Smith, 2005) that teacher educators must have command of diverse teaching learning strategies that may be utilized in the class where students from diverse cultural backgrounds are present and they have varied academic and social requirements.

To ensure that quality learning experiences are being provided to students, teacher educators must be trained to play a constructive and transformational role in teacher training

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institutions. They are required to have complete knowledge regarding social, economic, political, and cultural changes as well as their effects on education and professional development programs. It has been suggested by Loo (2020) that to improve the knowledge and skills of teacher educators, there is a need to ensure their workplace-based learning. Technological developments, the emergence of new pathways in instructional practices, and movements to make higher education institutions edgeless, borderless, and liquid have provoked the idea of introducing emerging trends in the field of teacher education (Barnett, 2013). To ensure an effective learning environment for ore service teachers and other students, ensuring required modifications in professional learning activities and instructional practices of teacher educators has become an urgent need (Bradwell, 2009). It has been advocated by Barber et al. (2013) that to upgrade the value, quality, and relevancy of the teaching-learning process, educational administrators are required to offer facilities to practice innovative and flexible instructional strategies.

Watling (2009) advocated that the practice of innovative strategies demands teacher educators to be socially and technically smart. It has been argued by Voogt, Fisser, Roblin, Tondeur, and Braak (2013) that pre-service teachers are required to be trained for designing and implementing lessons based on the usage of technological gadgets and such training may be only possible if teacher educators are trained in these areas. According to Polly et al. (2010), it is the responsibility of teacher educators to provide a socially and technologically enriching environment to pre-service teachers at institutions of teacher education. It has been suggested by Mishra and Koehler (2006) that for ensuring the successful integration of technology at educational institutions, TPACK (Technological Pedagogical Content Knowledge) model may be utilized by teacher educators as it has been used effectively for the last 10 years by various educational experts an offering very fruitful results. This model is equally useful for all courses and some amendments may be made in the practice of this model keeping in view the nature of course content and contextual requirements. Kay (2006) and Voogt et al. (2013) also supported the idea of implementing this model by teacher educators for the successful integration of technology during the instructional process.

Researchers (Wetzel, Foulger, Buss, & Lindsey, 2014) also share their concerns about the implementation of this model by stating that successful implementation of that model demands many administrative and environment-related transformations. It has been described by Barton and Haydn (2006) that additional technical and moral support must be provided to teacher educators so that they can assist pre-service teachers in the successful integration of technological devices during the development of instructional plans (Goktas, Yildirim, and Yildirim, 2009; Polly et al., 2010). Despite all these arguments, it has been realized by Borthwick and Hasnen (2017) that defining the level of expertise that is expected from teacher educators is not an easy task as teacher educators are expected to be capable of utilizing technological resources at all levels of instruction from planning till evaluation. It has been further explored by researchers (Borthwick & Hasnen, 2017) that teacher educators lack needed social, pedagogical, technological, and content-related competencies and this situation demands drastic changes in the structure and policies of teacher education programs.

Likewise, it has been indicated by Redecker (2017) that developing digital (technological) competencies among teacher educators has been very important as these competencies can

enable them to train pre-service teachers keeping in view the demands of the 21st century. In the same scenario, a study was conducted by Drange and Danielsen (2019) to explore the competencies of teacher educators and the findings of the study indicated that teacher educators have basic technological competencies and they are communicating with students and colleagues effectively via using online resources but the level of their social competencies is not up to the mark and this area requires special considerations. Furthermore, it has been explored that teacher educators are not too efficient in developing social competencies and habits of collaborative work among their students. Notwithstanding this requirement, relative competency in the arena of teacher education, particularly in Asia, is a dearth that encounters their training for the occupation and is the motive for this study.

Above and beyond, teacher educators' were preceding self-preparation associated absolutely with job commitment and gratification (Richter et al., 2021). Feeling overwhelmed by unaccustomed responsibilities in an innovative atmosphere leads to motivational tiredness and decreases job fulfillment (Richter et al., 2021). Moreover, teacher educators' education is work-based, dynamic, and life-long so they increasingly refine their services in their professional life (Cochran-Smith, 2003; Berry, 2021). Their proficiencies are designed through capabilities at work and their consideration to figure out what works for them. To comprehend this applied information, the image of practices should be apprehended through descriptions of their qualified life. It has been prompted by Moreno-Olivos (2019) that to ensure that teacher educators are capable enough to meet the demands of the 21st century, it is very important to reflect on their social competencies. They further indicated that social competencies are not limited to a specific set of skills that vary according to the culture but these must be understood from the broader perspective of integrating thoughts, behaviors, feelings, and interpersonal relationships.

Nguyen (2023) as a result of his research study indicated that key competencies that must be part of teacher educators' personality are based on the following four areas: knowledge and skills, ethical manners, motivation, and self-reflection about personal values. Features of demonstrating good teaching highlight the significance of professional assessment as an additional vital feature in teacher education that encompasses productive investigation of teacher educators' teaching and self-learning, as well as their students' learning and student-teaching (Celik, 2011). In prompting responses to what it means to be a good language teacher educator, Smith (2005) found modifications amongst the understandings of learner teachers and teacher educators, regardless of a wide-ranging settlement on the declaration that good teacher educators be responsible for sustenance and demonstration tolerance and compassion to student teachers for the sake of their development. Based on the above-mentioned arguments, a mixed-method approach was adopted to explore the level of social and technological competencies among teacher educators.

Research Methodology

Research Design: A mixed methods approach based upon concurrent triangulation strategy was used to view a holistic situation. In this design, researcher collects quantitative and qualitative data and analyses it. After analyzing both types of data in the next step triangulate the results. A brief description of this design is as follows:

Figure 1
Concurrent Triangulation Strategy (Cresswell, 2003)
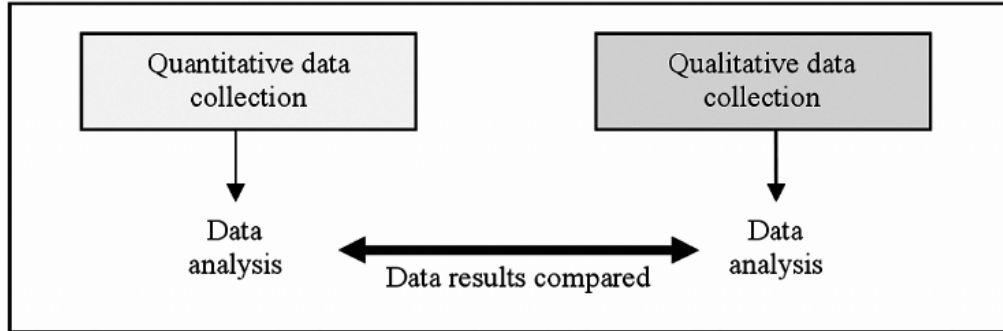
Population and Sample*:* Pre-service teachers from six teacher training institutions of two main provinces (Punjab and KPK) of Pakistan constituted the population of the study. 450 pre-service teachers were selected as a sample by using a stratified random sampling technique for getting quantitative data and 10% of the total sample (45 pre-service) was selected for interviews.

Instrumentation: Close closed-ended questionnaire and interview guide were developed for collecting data from pre-service teachers. To ensure the reliability of the instrument, pilot testing was conducted and the calculated value was 0.87. The validity of research instruments was explored by getting experts' opinions.

Data Collection: Data were collected by making personal visits to sampled institutions. A supportive letter was issued by the department to get prior permission from the administrators of teacher education institutions for collecting data. Questionnaires were distributed in the first round and in the second round filled questionnaires were collected from study participants. Interviews were recorded with the consent of the sampled participants.

Data Analysis and Interpretation

For data analysis, descriptive statistics and thematic analysis were employed. The major objective of this study was to explore the level of social and technological competencies among teacher educators and ways to promote these competencies among pre-service teachers. Therefore, researchers asked key statements related to social and technological competencies from pre-service teachers to determine the level of these competencies among teacher educators. Data related to social competencies has been given in Table 1.

Table 1

Social Competencies of Teacher Educators

Teacher Educators show positive attitude towards:	**Percentages** Un-satisfied	Neutral	Satisfied	Total	**Mean**
Encourage collaboration	18.6%	18.7%	62.7%	100%	3.65

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Promoting professional Attitude	26.7%	18.7%	54.6%	100%	3.51
Help teachers to reflect on their attitudes	16.6%	32%	51.4%	100%	3.49
Networking and sharing practice	21.3%	28%	50.7%	100%	3.47
Remaining up to date with developments	12.7%	33.3%	54%	100%	3.61
Working with groups of diverse backgrounds	13.4%	28.6%	58%	100%	3.59
Building relationships with teachers of diverse disciplines	26.7%	31.3%	42%	100%	3.19
Encouraging to explore ways of improvement positively	26.6%	24.7%	48.7%	100%	3.33
Influencing decision makers and promoting changes	25.3%	30.7%	44%	100%	3.20
Showing responsiveness to societal changes and issues	19.3%	31.3%	49.3%	100%	3.40
Practicing and promoting education related community services and voluntary work	21.3%	25.3%	53.4%	100%	3.51
Demonstrating strong interpersonal skills	26%	22%	52%	100%	3.38

Five point Likert scale was utilized for the collection of data. For presenting the data in tabular form, responses of very us-satisfied and somewhat un-satisfied were merged into one category "un-satisfied" and responses of very satisfied and somewhat satisfied were merged into one category "satisfied". For the interpretation of mean scores; the range suggested by Oxford (1990) was utilized: 1.0-2.4 (low level of satisfaction), 2.5-3.4 (medium level of satisfaction), 3.5-5.0 (high level of satisfaction). Data of Table 1 indicated that mean scores for five statements were within the range of a high level of satisfaction (3.5-5.0). While mean scores for seven statements were within the range of medium level of satisfaction (2.5-3.4). These mean scores indicated that pre-service teachers were highly satisfied with the teacher educators' collaboration skills, professional attitude, knowledge related to changing circumstances, group work, and community-related services. They were moderately satisfied with their skills related to reflective practices, networking, and sharing, building relationships, encouragement for initiating changes, promoting changes, showing

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responsiveness to societal changes, and demonstrating interpersonal skills.

Table 2

Technological Competencies of Teacher Educators

Teacher educators are proficient in:	Percentages				Mean
	Un-satisfied	Neutral	Satisfied	Total	
Dealing with technological problems	15.3%	36%	48.7%	100%	3.45
Developing and maintaining a system for storing and retrieving learning materials	18.7%	29.3%	52%	100%	3.47
Using technology to facilitate own professional development	16%	21.3%	62.6%	100%	3.65
Utilizing content-specific technologies	15.3%	20.7%	64%	100%	3.61
Evaluating the effectiveness of content-specific technology	24%	26.7%	49.3%	100%	3.40
Preparing teacher candidates to make use of technology	16.7%	24.7%	58.6%	100%	3.70
Providing opportunities for teacher candidates to reflect on their attitudes about using technology	18%	28%	54%	100%	3.49
Utilizing online tools to enhance learning	26%	23.3%	50.7%	100%	3.35
Using technology to differentiate instruction	19.3%	30.7%	50%	100%	3.46
Demonstrating the role of assistive technologies	14.6%	30.7%	54.7%	100%	3.57
Providing opportunities to create learning activities	14.7%	24.7%	60.6%	100%	3.70
Finding solutions to problems related to technology	18.6%	24.7%	56.7%	100%	3.65

Results of Table 2 reflected that mean scores for six statements were within the range of medium level of satisfaction (2.5-3.4). While mean scores for the remaining six statements were within the range of a high level of satisfaction (3.5-5.0). These mean scores reflected that pre-service teachers were moderately satisfied with the teacher educators' ability to deal with technological devices, develop and maintain data storing and retrieving systems,

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evaluate the effectiveness of content-specific technology, offer reflection-related opportunities to pre-service teachers about using technology, utilize technological devices for discussion, and utilize technology for differentiating instruction. High mean scores also indicated that pre-service teachers were satisfied with the teacher educators' ability to use technology for supporting learning, utilize content-specific technologies, motivate pre-service teachers to use technology, demonstrate the role of assistive technology in satisfying individual learning needs, and find solutions to technology-related problems effectively.

For the analysis of qualitative data collected through interviews from pre-service thematic analysis techniques (reading, classifying, and describing) were utilized. Pre-service teachers further indicated that for promoting social technological competencies, teacher educators are utilizing various strategies:

- Motivation to participate in social works
- Providing guidelines to join social networking groups
- Clarifying the importance of following societal norms and values
- Preparing for unexpected societal changes
- Developing the ability to respect individuals coming from diverse backgrounds
- Promoting the culture of group activities in classrooms
- Showing esteem towards students having diverse religious and economic backgrounds
- Motivating students to participate in programs that have been initiated for public welfare
- Use of LMS (Learning management system) for sharing course updates
- Utilizing multimedia for class presentations
- Aligning their lectures with online available material
- Motivating students to utilize various websites and videos for concept clarification
- Directing students to share soft copies of assignments with fellows
- Encouraging the use of social media forums such as WhatsApp, email, and blogs for educational discussion
- Instructing students to upload assignments and reading material at the class portal

Conclusions and Discussion

Pre-service teachers were moderately satisfied with their skills related to reflective practices, networking, and sharing, building relationships, encouragement for initiating changes, promoting changes, showing responsiveness to societal changes, and demonstrating interpersonal skills for strengthening these competencies, they must get involved in activities of professional development. It has been also indicated by the Australian Institute of Training and School Leadership (AITSL, 2011) that teacher educators are required to get involved in the activities of self-assessment and reflective practices to improve their professional, pedagogical, and social competencies. Pre-service teachers were moderately satisfied with the teacher educators' ability to deal with technological devices, develop and maintain data storing and retrieving systems, evaluate the effectiveness of content-specific technology, offer reflection-related opportunities to pre-service teachers about using technology, utilize technological devices for discussion, and utilize technology for differentiating instruction.

It has been also argued by Watling (2009) that the practice of innovative strategies and technologies demands teacher educators to be socially and technically smart Polly et al. (2010) stated that it is the responsibility of teacher educators to provide a socially and technologically enriching environment to pre-service teachers at institutions of teacher education and it is only possible in that case if they will be equipped with high level social and technological competencies. Pre-service teachers indicated that though teacher educators are utilizing various strategies for promoting social and technological competencies, they must be trained to promote these competencies with true spirit by ensuring required amendments in the classroom and instruction environment. These findings are supported by Vieira et al. (2009) as they indicated that the wave of social transformation demands teacher educators to make required amendments in their instructional practices with the major aim of training students to meet the requirements of the 21st century.

The moral means of teacher educators imitates equally their proficient and principled performance, which is reinforced by Celik (2011) in the illustration of suitable manners. Being welcoming, gentle, passionate, and sympathetic indicates an encouraging educational atmosphere for student teachers. Student teachers in prior training also approved that these constructive approaches style good teacher educators (Smith, 2005). Furthermore, the consciousness of the occupation's purity is projected in the belongings of teacher educators. This approach stimulates them to self-reflect on their teaching expertise and accurate means so that they can be a good role model for their students. The role model attribute is meaningfully presented in teacher educators' aptitude comprising their optimistic intellectual, mystical, and social facets (Dervenis et al., 2022). Besides, study findings have been also supported by Moreno-Olivos (2019) who stated that the social competencies of teacher educators must be upgraded to enable them to meet the challenges of the 21st century and these competencies must be understood in the broader perspective of integrating interpersonal skills, behaviors, and abilities.

Recommendations
Based on the findings of the study, it has been recommended that along with professional development programs for pre-service and in-service teachers, suitable training sessions may also be conducted by concerned authorities for the professional development of teacher educators. Teacher educators at higher education institutions are required to adopt a multifaceted approach for ensuring the development of technological and social competencies among pre-service and in-service teachers as well. Effective coordination among policymakers, teacher educators, and pre-service teachers may be ensured to develop a comprehensive list of competencies that are required to inculcate among teacher educators and subsequently among pre-service and in-service teachers. Teacher educators are expected to understand clearly the complexity of their role at teacher training institutions and then they may adopt required measures to upgrade their competencies accordingly.

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