

Teaching and Research: A Study of Symbiotic Relationship

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ABSTRACT

The present study was conducted to understand the relationship between Researcher-like disposition and teaching effectiveness of teacher educators in two phases. The first Phase was the quantitative Phase, in which Pearson product-moment correlation was carried out to understand the relationship between the variables. One hundred teacher educators are teaching B.Ed. A stratified sampling technique selected the course. The second Phase was the qualitative Phase, in which only 20 teacher educators were randomly selected and interviewed to understand the problems faced by teacher educators in teaching & conducting research. The present study's findings revealed a significant and positive relationship between researcher-like disposition and teaching effectiveness of teacher educators, and the researcher-like disposition has positively contributed to enhancing the teaching effectiveness of teacher educators ($p < 0.01$ level). However, the findings also revealed that the teaching workload, inadequate research pre-service training, infrastructure constraints, Lack of training in ICT, and involvement in other administrative work were the various factors affecting teaching effectiveness and research performance. In a rapidly changing teaching and learning scenario, conducting research is one of the most potential approaches and thoughtful ways to inspire, motivate, and equip teacher educators with skills to teach evidence-based methods. The result of the present study provides a clear picture to the educationists and policymakers to improve the teaching effectiveness and research performance of teacher educators teaching in B.Ed. Institutions.

INTRODUCTION

"If teachers are the most important in-school factor influencing the quality of students' learning, the competencies of those who educate and support teachers must be of the highest order." [The European Commission \(2012\)](#)

Professional development means all formal and informal measures need to be introduced to enhance the knowledge and skills and considered the crucial factor in the students learning and achievement ([Darling-Hammond, 2000](#); [Villegas-Reimers, 2003](#)). Similarly, the professional development of teacher educators is a key feature for the preparation of quality teachers ([Swennen, A., Jones, K., & Volman, M. \(2010\)](#), [Snoek et al., 2010](#), [Kennedy \(2005\)](#)). Therefore, training prospective

teachers and producing new knowledge in teacher education are the fundamental duties that have to perform by the teacher educator simultaneously ([Zeichner, K. 2005](#)).

The concept of 'inquiry as stance' was given by [Cochran Smith, M & Lytle, S. L. \(2015\)](#) for the teacher educator's professional development and defined as a continuous and systematic process of inquiry by which teacher educators resolve queries and assumptions and produce new knowledge to solve educational problems. Research provides powerful strategies to improve teaching ([Dinkelman, 2003](#)). Therefore, research is a key element in the professional development of teacher educators ([Lunenberg et al., 2014](#)).

Theoretical Framework

Researcher-like Disposition of Teacher Educator

Every researcher has a personal tendency to act in a specific way while conducting research. Some researchers might observe the existing phenomenon critically, and others might focus on developing innovative ideas. This unique combination of tendencies to act or think is called disposition. Disposition combines three psychological components: sensitivity, inclination, and ability to handle the situation ([Perkin et al. 1993](#)). These components help to elucidate positive belief towards the completion of the task successfully. The dispositions are the tendencies to act in a particular situation. From a cognitive psychological point of view, the disposition is tendencies towards particular behavior ([Katz and Raths 1985](#)). On the other hand, the transformative theory of learning ([Mezirow,1996](#)) believes that every individual has a unique concept, values, feeling, response, and interpretation towards a particular situation. Based on these experiences, individuals construct their frame of reference to understand the world. These frames of reference are transformed by critical reflection. The disposition theory ([Perkin et al. 1993](#)) & transformative theory of learning ([Mezirow,1996](#)) provide theoretical support to understand the term Researcher-like Disposition. According to [Hanna Tack and Vanderlinde \(2016\)](#), Researcher-like Disposition can be understood based on three aspects: (1) cognitive aspects include the knowledge and belief required by teacher educators to conduct research. (2) Behavioral aspects refer to practices that teacher educators perform to conduct research and integrate the research result with the teaching practice to improve it. (3) Affective aspect refers to the fact that teacher educators value the significance of a research-oriented and cooperative approach to the profession of teacher educators.

Teaching effectiveness of Teacher Educators

A conceptual model or framework PCK ([Shulman, 1986](#)) & TPACK ([Mishra & Koehler, 2006](#)) on teacher knowledge provides a theoretical base to assess teaching effectiveness, Which includes knowledge about the aims and rationale of educational activity learner, content, pedagogy, technology, curriculum, educational context. TPACK is the combination of content, pedagogy, and technology through which subject matters are prepared, modified, and presented according to the interests and abilities of learners. Effective teaching makes teaching-learning interesting, motivating, easy, understandable, and significant. Effective teaching and students' educational success have a positive and significant relationship ([Kiadese, A.L.,2011](#); [Adekola, B.O., 2006](#)). As the quality of students' achievement depends on the quality of teachers, the quality of teachers depends on the quality of teacher educators. They are actively concerned directly or indirectly with the education of teachers. Hence, more emphasis should be given to teacher educators, who are accountable and responsible for the quality of teacher education.

Need of the Research

The need and importance of research to enhance the teaching effectiveness and for the professional development of teachers, educators are observed by many researchers and experts in the field of teacher education in India and abroad ([Rust, F. 2009](#), [Munn, P. 2008](#), [Swennen, A. et al., 2010](#)). Several studies have been done on teaching research linkage on faculty of higher education abroad, but in India, this area is under-researched ([Barman, P., Bhattacharyya, D., & Barman, P. 2015](#)). After observing the gap in the research literature, the researcher intended to conduct a study on researcher-like-dispositions of teacher educators about their teaching effectiveness. Hence, the purpose of the study is:

1. To ferret out the role of researcher-like-dispositions to improve the teaching effectiveness of teacher educators.
2. This study is exclusively related to teacher educators in the Indian context, which has been rarely studied, as evident from the research review.

METHODS

The study was carried out in two phases. The first Phase was the quantitative Phase in which Pearson product-moment correlation was carried out to understand the relationship between Researcher-like disposition and teaching effectiveness of teacher educators. The population consists of all the teacher educators of Delhi teaching B.Ed. Course. The sample size was 100 teacher educators selected by stratified random sampling technique. The second Phase was the qualitative Phase, in which 20 teacher educators were interviewed to understand the problems faced by the teacher educators while teaching and doing research.

Research tool

1. The present study was carried out with the help of the following tools. First, the teacher educator's researcher-like-disposition scale (TERDS) developed and standardized by Hanna Tack &Vandenlinge (2016) was adopted.
2. The researcher developed and standardized the teacher educator's teaching effectiveness scale (TETES). The reliability of the teaching effectiveness scale was established by the Test-Retest method(0.85), Split-half method(0.79), and by Cronbach's Alpha(0.926). The scale has 54 items distributed in nine dimensions. Their student teachers assessed the teaching effectiveness of the teacher educators.
3. Interview schedule for teacher educators

RESULTS AND DISCUSSION

Correlation Phase 1

Table 1. Relationships between Researcher-like disposition and teaching effectiveness (showing r among the variables)

Variables	Teaching Effectiveness	Researcher-like disposition
Teaching effectiveness	1.00	
Researcher-like disposition	0.552*	1.00

*Correlation is significant at the 0.01 level

The correlation coefficient between Teaching effectiveness and researcher-like disposition is 0.552, significant at a 0.01 level of confidence. Hence, the hypothesis is that there is no significant relationship between researcher-like disposition and teaching effectiveness of teacher educators working in B.Ed. Therefore, the institution of Delhi is rejected. It represents the moderate and positive relationship between researcher-like disposition and teaching effectiveness of teacher educators. The positive relationship shows that the researcher-like disposition contributes to the teaching effectiveness of the Teacher Educators.

Table 2. Coefficient of correlation between the various dimensions of Researcher-like-Disposition and Teaching Effectiveness

S. No.	Dimensions of Teaching Effectiveness	Dimensions of Researcher-like- Disposition			
		Smart consumer of the research	Valuing research	Able to conduct research	Conducting research
1.	Personality	0.499*	0.578*	0.201*	0.330*
2.	Subject expertise	0.307*	0.241*	0.565*	0.207*

S. No.	Dimensions of Teaching Effectiveness	Dimensions of Researcher-like- Disposition			
		Smart consumer of the research	Valuing research	Able to conduct research	Conducting research
3.	Student-teacher and teacher educator relation	-0.044	0.116	0.067	0.107
4.	Teaching strategy	0.328*	0.141	0.128	0.673*
5.	Classroom management	0.093	-0.054	0.161	0.048
6.	Professional competence	0.228*	0.199*	0.385 *	0.239*
7.	Communication skills	0.098	-0.128	0.047	-0.063
8.	Assessment and feedback	0.076	0.085	-0.027	0.102
9.	Use of ICT	0.264*	0.197*	0.172	0.129

*Correlation is significant at the 0.05 level

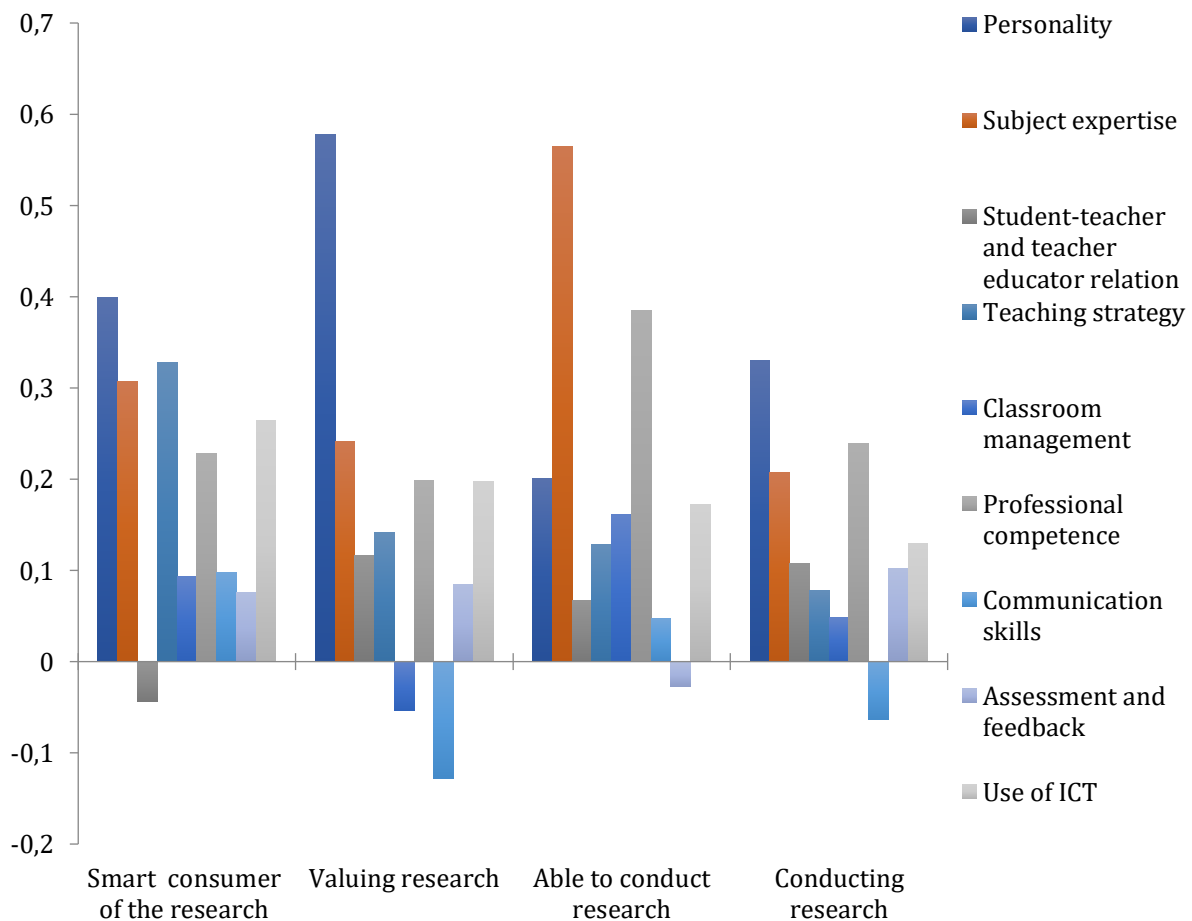


Fig.1. Histograms representing the statistical metrics showing a correlation between the dimensions of Researcher-like Disposition and Teaching effectiveness

Table 2 show the Coefficient of correlation between the various dimensions of Researcher-like-disposition and Teaching Effectiveness:

1. The Coefficient of correlation between the smart consumer of research& various dimensions of teaching Effectiveness viz. Personality($r=0.499$), subject expertise($r=0.307$), teaching strategy ($r=0.328$), professional competence ($r=0.288$), use of ICT($r=0.197$) which are positive and more than critical value of 'r' at 0.05 level of significance. Therefore, the null hypothesis is rejected that there is no significant relationship between the dimension smart consumer of the research and various dimensions of teaching effectiveness. The result indicates that the research plays an active role in enhancing teaching effectiveness.
2. The Coefficient of correlation between valuing research& various dimensions of teaching Effectiveness viz. Personality($r=0.578$), subject expertise($r=0.241$), professional competence ($r=0.199$), use of ICT($r=0.264$) which are positive and more than the critical value of 'r' at 0.05 level of significance. Therefore the hypothesis that there exists no significant relationship between the dimension valuing research and various dimensions of teaching effectiveness is rejected. The result indicates that research help to improve the teaching effectiveness of teacher educators.
3. The Coefficient of correlation between Able to conduct research& various dimensions of teaching Effectiveness viz. Personality($r=0.201$), subject expertise($r=0.565$), professional competence ($r=0.385$) which are positive and exceed the critical value of 'r' at 0.05 level of significance. Therefore the concerned null hypothesis that there is no significant relationship between the dimension able to conduct research and various dimensions of teaching effectiveness is rejected. The result indicates that up to some level, reading Research articles helps enhance knowledge and trigger the teaching effectiveness of the teacher educators.
4. The Coefficient of correlation between conducting research& various dimensions of teaching Effectiveness viz. Personality($r=0.330$), subject expertise($r=0.207$), professional competence ($r=0.239$),teaching strategy(.673) which are positive and exceed the critical value of 'r' at 0.05 level of significance. Therefore, the concerned null hypothesis that no significant relationship exists between conducting research and various teaching effectiveness is rejected. The result indicates that, to some extent, conducting research is very important for developing professional competencies among teacher educators.

Interview Phase

Twenty teacher educators (out of 100 teacher educators selected for quantitative analysis) were interviewed to know the complexities and get a clear picture regarding the Researcher-like Disposition and teaching effectiveness of teacher educators. The interview also served the purpose of triangulation. The inductive thematic analysis was employed to recognize teaching effectiveness and research performance factors. It was carried out in six-phase procedures such as transcription, coding, generating themes, reviewing themes, refining the themes, and combining themes into big themes. The main findings were-

1. University teacher educators have significantly higher researcher-like disposition than college teacher educators
2. Teacher educators having more than ten years of teaching and research experience have a better researcher-like disposition
3. Teaching/workload hurts research output
4. Inadequate research orientation and Poor quality of research work in teacher educator preparation program
5. Infrastructure constrain
6. Lack of training in ICT
7. Involvement in other administrative work

The perception of teacher educators regarding the relationship between Researcher-like Disposition and teaching effectiveness was positive, and all the respondents acknowledged that conducting research is a better model to keep updated, an important component of teacher educator's career and demand of the profession ([Lunenburg,2014](#)). It was also mentioned that we could teach through prescribed textbooks at a certain level, but teaching at a higher-level, research-based, or evidence-based approach is essential to improving teaching standards and skills. Twelve teacher educators were engaged in research to produce new knowledge; six teachers reported that they updated their knowledge by reading research literature, and nine teacher educators mentioned that they solved

the classroom problems through action research. Teacher educators were also aware of the recent steps taken by the Government of India to improve research productivity and teaching-learning among teacher educators-

1. Impactful policy research in social science (IMPRESS)
2. Pandit Madan Mohan Malavia scheme for teacher education (PMMMNMTT)
3. Study Webs of Active-learning for Young Aspiring Minds (SWAYAM)
4. Various funding agencies such as UGC, ICSSR, and other private agencies also give funds to conduct research activities and promote teaching-learning.

Discussion and education implications

The study identified a moderate and positive relationship between Researcher-like Disposition and the teaching effectiveness of teacher educators. It means that the teacher educators who have better Researcher-like-Disposition exhibit better Teaching Effectiveness. It is widely accepted and proven by many research studies that research enhances knowledge by doing creative and systematic investigations ([Lunenberg et al., 2014](#)). Research emphasizes on creation of knowledge, and teaching emphasizes the diffusion of knowledge. Teaching and research are the two sides of the same coin and interrelated. Thus, research is a way to strengthen the teaching-learning process and contribute to the teacher educators' professional development. ([Lunenberg, 2014](#)). An effective teacher educator engages in research to improve evidence-based practice. He has a unique tendency to identify the difficulties, applies new methods and strategies to solve the problems (Perkin theory of disposition and transformation theory of learning ([Mezirow, 1996](#)), and integrate his/her content, pedagogical and technological knowledge to make teaching more interesting and meaningful with the help of TPACK model on teacher knowledge ([Mishra & Koehler, 2006](#)).

The teacher educators should take suitable actions to research to improve evidence-based practice. The teacher educators should be involved in research activities to understand better their student learning, teaching, and general teacher education. It was also reported that experienced teacher educators are better at research productivity. In addition to this, it was also noted that excessive teaching and administrative load negatively affect teaching and research productivity. The ranking of the institutions is also associated with the quality and quantity of research work of the employees. Therefore, the teacher education institutions should provide a positive and healthy research environment by organizing workshops on research methodology, conferences, seminars, and faculty development programs to improve teacher educators' research productivity and teaching effectiveness. In the present scenario of a rapidly changing teaching and learning environment, conducting research is one of the most potent approaches to elevate teacher educators' teaching effectiveness ([Kimberly M. Williams, 2021](#)). It would be a promising and reflective way to equip the teacher educators with skills to teach with evidence-based methods to inspire and motivate new teacher educators and pre-service teachers.

CONCLUSION

The current study indicated a positive and significant correlation between the Researcher-like-Disposition and Teaching Effectiveness of Teacher educators and identified researcher-like disposition's contribution to improving teacher educators' teaching effectiveness. The research orientation of teacher educators is an important component for their teaching career and helps produce autonomous, innovative, creative, and professional sound school teachers ([Lunenburg, 2014](#)). It is evident that the teacher educators who have better Researcher-like-Disposition and engage in the production of new knowledge exhibit better Teaching Effectiveness. They are mutually reinforcing to each other. Hence, Institutions should create a research environment by honoring the faculty and students who contribute to new knowledge, organizing research orientation workshops, and providing journal publication support and infrastructure support by the institutions. Institutional funds should be generated to support research activities and boost research capacities to improve teaching. The meta-cognitive research strategies such as integration of concrete experiences, reflective observation, abstract conceptualization, and active experimentation should be included, and more schemes should be initiated, such as IMPRESS and PMMMNMTT to strengthen the teacher education programs.

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