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Development and Validation of a Research Practices Scale for Teacher Educators (RPS-TE)

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Abstract
Research has become a fundamental component of professional development and educational innovation in teacher education. Despite the increasing emphasis on research productivity and scholarly engagement, the availability of standardized instruments specifically designed to assess research practices among teacher-educators remains limited. Therefore, this study aimed to develop and validate the Research Practices Scale for Teacher Educators (RPS-TE). The study adopted a scale development research design and involved 141 teacher educators working in teacher education institutions affiliated with Tamil Nadu Teachers Education University (TNTEU) in and around the Tiruchirappalli district. The scale development process included conceptual framework construction, item pool generation, expert validation, pilot administration, and psychometric testing of the scale. Initially, 35 items were developed based on an extensive review of the literature and expert consultation. Following content validation, 29 items were retained for the final scale development. The reliability of the instrument was established using Cronbach's alpha, which yielded an excellent internal consistency coefficient of 0.95. Exploratory Factor Analysis (EFA) was conducted to determine the construct validity of the scale. The Kaiser–Meyer–Olkin (KMO) value of 0.829 and a significant Bartlett's Test of Sphericity ($\chi^2 = 3548.327$, $p < 0.001$) confirmed the suitability of the data for factor analysis. The analysis extracted two factors, namely Research Competence and Scholarly Engagement (RCSE) and Research Supportive Institutional Environment (RSIE), which together explained 55.09% of the total variance in the data. The item-total correlations ranged from 0.50 to 0.77, and the factor loadings ranged from 0.51 to 0.86, indicating satisfactory item discrimination and construct representation. Discriminant validity analysis revealed a moderate positive correlation ($r = 0.615$, $p < 0.01$) between the two dimensions, confirming that they are related but distinct constructs. The findings demonstrate that the RPS-TE is a reliable and valid instrument for assessing research practices among teacher-educators. The scale can be effectively used for self-assessment, professional development, institutional evaluation, quality assurance, and policy formulation aimed at strengthening the research culture in teacher education institutions. Further studies may be based on qualitative methods to provide deeper insights into research practices. Further studies can apply SEM to strengthen the robustness of the tool.

Keywords: Institutional Research Support, Reliability, Research Competence, Research Practices, Scale Development, Scholarly Engagement, Teacher Educators, Validity

Introduction

In a contemporary knowledge-driven society, research has become a keystone for educational progression and novelty. In the edification system, teacher education, a decisive component, plays a central role in preparing competent teachers who can react effectively to the growing demands of the 21st century. In this context, teacher educators are not only facilitators of knowledge but also contributors to educational research, engaging in systematic inquiries to improve teaching-learning processes and outcomes.

Research practices among teacher educators encompass a wide range of activities, including identifying research problems, designing studies, collecting and analyzing data, publishing scholarly work, and applying research findings to practice. These practices are essential for fostering reflective teaching, promoting evidence-based decision-making, and enhancing the overall quality of teacher-education programmes. Despite the growing emphasis on research, many teacher educators face challenges such as limited research skills, lack of institutional support, inadequate access to resources, and minimal engagement in scholarly activities. Diery et al. (2020) reported that novice nurses face greater challenges in accessing, interpreting, and applying research findings than their experienced counterparts.

In recent years, educational reforms and quality assurance mechanisms have highlighted the importance of strengthening the research culture within higher education institutions. Accreditation bodies, such as the National Assessment and Accreditation Council, emphasize research productivity, innovation, and professional development as key indicators of institutional quality. Similarly, national education policies advocate integrating research into teacher education to ensure continuous professional growth and improved educational outcomes. Challen (2025) recommended strengthening institutional research capacity and promoting collaborative professional learning.

Despite these developments, there is a lack of standardized tools to assess research practices among teacher educators. Existing measures often focus on general research competence or output without capturing the multidimensional nature of research engagement, including institutional support, collaborative practices, and scholarly dissemination. Walędziak (2025) concluded that institutional culture and research opportunities strongly influence teacher educators' research practices and recommended policies that strengthen the research–teaching nexus. This gap necessitates the development of a comprehensive, reliable, and valid Research Practices Tool tailored to the unique context of teacher education. Claros (2025) highlighted that institutional mentoring and research training play important roles in sustaining teachers' research engagement. Gallegos (2025) demonstrated that structured research training, collaborative inquiry, and reflective dialogue significantly enhance teachers' ability to connect educational research with classroom practice.

The present study aims to address this gap by developing and validating a Research Practices Tool for Teacher Educators. The tool is expected to provide a systematic framework for assessing research-related competencies and practices, identifying areas for improvement, and supporting professional-development initiatives. Furthermore, it will assist institutions in strengthening their research culture and aligning with quality standards and policy expectations of the Indonesian government.

In essence, the development of such a tool is a significant step toward enhancing research engagement among teacher educators, thereby contributing to the improvement of teacher education and the broader educational landscape in the country.

Need and Importance

The research practices of teacher educators are commonly measured using fragmented indicators. In line with the NEP 2020, research integration in teacher education is mandatory (Clause 5.14), which strengthens the professional development of teacher educators. In accordance with NAAC criteria, institutional accountability is monitored by research engagement, research culture, publication output, and reflective practices of teacher educators. A structural tool assists in identifying gaps in research competence and facilitates the organization of targeted capacity-building programs for teacher educators. A validated tool promotes benchmarking performance, comparing institutions, and identifying best practices. Therefore, a standardized, reliable, and valid tool is needed to systematically measure research engagement, skills, and productivity. A validated tool cancel can serve as a diagnostic instrument that supports professional development by identifying training needs, planning targeted professional development programs, increasing publication output, encouraging collaborative research, improving classroom practices, and enhancing student learning outcomes. The data

from the tool can exhibit research policies, funding allocations, and strategic planning. The developed and validated tool ensures systematic assessment and enhancement of research competencies, but also strengthens and institutionalizes quality, aligning with policy expectations and fostering teacher educators to contribute publishable research output.

Review of Related Literature

Batool (2021) recommended that universities should fortify their research culture through adequate funding, research infrastructure, incentives, mentorship, and continuous professional development programs. Faculty members should be encouraged to improve their research competencies through regular participation in research activities and collaborative projects. Hussain (2021) indicated that although faculty members recognized the importance of research for professional development and institutional reputation, actual engagement in research activities remained moderate. Caingcoy (2020) demonstrated that teachers generally have moderate research capabilities. Research competence was significantly associated with research engagement, professional development activities, institutional encouragement, prior research experience, and research training. Pateña (2020) revealed that institutional barriers such as inadequate research funding, limited administrative support, heavy teaching workload, insufficient research facilities, and lack of mentoring significantly influenced faculty members' attitudes towards research.

Objectives of the Study

General Objective

To develop and validate a Research Practice Scale for Teacher Educators (RPS-TE).

Specific Objectives

- The data were analyzed to determine whether they followed a normal distribution.
- To standardize the Research Practices Scale with acceptable levels of reliability.
- To identify the dimensions of Research Practices among Teacher Educators.
- The content validity of the tool was established through an expert review.
- The tool was pilot tested to examine its clarity, relevance, and feasibility.
- To determine the construct validity of the tool using statistical methods.
- To examine the inter-construct correlation between dimensions through discriminant validity.

Method

Research Model

This study was a scale development study. A new scale was developed to measure the research practice level of teacher educators.

Participants

A total of 141 teacher educators from teacher education colleges affiliated to TNTEU in and around Tiruchirappalli district were included in the study. The demographic data of the participants are presented in Table 1.

Table 1 Demographic Profile of the Sample

Variables	Sub Samples	F	%
Gender	Male	72	51.1
	Female	69	48.9
Age	30 to 35	11	7.8
	35 to 40	38	27.0
	40 to 45	59	41.8
	45 and Above	33	23.4
Educational Qualification	M.Phil	64	45.4
	Doing PhD	30	21.3
	PhD	47	33.3

Field of Study	Arts	76	53.9
	Sciences	65	46.1
Teaching Experience	1 to 5	10	7.1
	6 - 10	55	39.0
	11 to 15	40	28.4
	16 and Above	36	25.5
Designation	Assistant Professor	119	84.4
	Associate Professor	15	10.6
	Professor	7	5.0
Interested in	Teaching	114	80.9
	Research	27	19.1

Table 1 presents the participants' demographic profiles. The sample consisted of 51.1% male and 48.9% female participants, with the majority of respondents being in the 40–45 years age group (41.8%). Most participants held an M.Phil. degree (45.4%) and were PhD holders (33.3%), with a predominant representation from the arts field (53.9%). Regarding teaching experience, 39.0% of participants had 6 to 10 years, and 80.9% were primarily interested in teaching. Most participants held the position of Assistant Professor (84.4%), reflecting the focus on individuals in the early stages of their academic careers.

Procedure for Scale Development Process

The researcher outlined the steps to be followed in scale development and followed the steps such as building the conceptual framework phase, item pool generation phase, getting opinion phase, pilot administration phase, testing validity and reliability phase (Scaledevstat, 2007; Mcmillan & Schumacher, 2006).

Building the Conceptual Framework Phase

In the first step, the studies of Batool (2021) on the correlation of personal and institutional factors with research productivity among university teachers, (Pateña, 2020) on personal, social, and institutional barriers in relation to attitude towards conducting research among general education faculty members, Hussain (2021) on current research practices in higher education institutions of Khyber Pakhtunkhwa, and (Caingcoy, 2020) on the research capability of teachers: its correlates, determinants, and implications for continuing professional development were reviewed.

To build the conceptual framework, the opinions of the researcher, research supervisor, and faculty members of teacher education colleges were considered under the aspects of research attitude, planning skills, data analysis skills, reporting skills of teacher educators, and institutional support for scholarly activities were taken into account to frame the scale RPS-TE.

Item Pool Generation Phase

The researcher re-analyzed the aspects discussed in conceptual framework phase such as research attitude, planning skills, data analysis skills, reporting skills of teacher educators and institutional support for scholarly activities & prepared the item pool with 35 items within the context of Research Competence and Scholarly Engagement and Institutional Research Support Environment

Getting Expert Opinion (Content Validity) Phase

Following the item pool generation phase, the scale developed was presented to two subject experts for their opinions. The expert excluded six items for being imprecise and overlapping. The ultimate scale consists of 29 items with research efficiency and Research-Conducive Institutional Environment.

Pilot Administration Phase

As part of the scale development, a pilot study was conducted to check the quality of the tool. The tool with 29 items with 5 point likert scale (5-Straongly Agree,4- Agree, 3 -Neutral, 2- Disagree, 1- Strongly

Disagree) were distributed to 141 teacher educators of Teacher Education Colleges in and around Tiruchirappalli district and to fill within the duration of 20 minutes. Based on the suggestions given by the respondents in terms of language, expression, and structure, the final form of the tool was revised.

Testing Validity and Reliability Phase

To test validity and reliability, the data collected from 141 teacher educators were used to test the validity using the Kolmogorov Smirnov test for normal distribution. From the above test, the Kurtosis and Skewness values indicate normality.

Statistical Procedure for Scale Development

Assessment of Normality

Table 2 Normality of the Research Practices using Kolmogorov Smirnov Test

N	Valid	141
	Missing	0
Skewness		-0.48
Std. Error of Skewness		0.20
Kurtosis		-0.28
Std. Error of Kurtosis		0.40

Table 2 shows that the normality of the RPS-TE was examined using skewness and kurtosis statistics. The skewness (-0.48) and kurtosis(-0.28) values fell within the acceptable range, indicating that the data were approximately normally distributed (Pallant, 2007). Hence, the assumption of normality was satisfied for further parametric analyses.

Reliability Analysis

Reliability analysis was conducted to determine the consistency, stability, and dependability of the research instrument. Cronbach's alpha is widely used to assess the internal consistency of items on a scale.

Table 2 Reliability Statistics using Cronbach's Alpha for Internal Consistency

Cronbach's Alpha	N of Items
0.95	29

The reliability of the scale was assessed using Cronbach's alpha, which yielded a value of 0.950 for the 29 items. This high value indicates excellent internal consistency, suggesting that the scale items reliably measure the same constructs.

Exploratory Factor Analysis (Construct Validity)

To determine whether the data were suitable for factor analysis, the Kaiser–Meyer–Olkin (KMO) Test and Bartlett's Test of Sphericity were used. EFA was used to identify the underlying factor structure of a set of variables to group items that are highly correlated with one another into common factors, to establish construct validity, and to refine the scale.

Table 4 Test for Dataset is Suitable for Performing Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.829
Bartlett's Test of Sphericity	Approx. Chi-Square	3548.327
	Df	406
	Sig.	.000

Table 4 reveals that the suitability of the data for factor analysis was examined using the Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO value was 0.829, indicating a meritorious level of sampling adequacy for the data. Bartlett's Test of Sphericity was found to be statistically significant ($\chi^2 = 3548.327$, $df = 406$, $p < 0.001$), suggesting that the correlation matrix is not an identity matrix. Therefore, the data were appropriate for conducting a factor analysis.

Table 5 Total Variance Explained by the Extracted Factors during the Factor Analysis

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.21	44.04	44.04	13.21	44.04	44.04	9.24	30.80	30.80
2	3.31	11.05	55.09	3.31	11.05	55.09	7.29	24.29	55.09

Table 5 presents the total variance explained by the extracted factors. The factor analysis identified two factors with Eigen values greater than 1, explaining 44.04% and 11.05% of the variance. Together, these factors accounted for a cumulative variance of 55.099. After rotation, the variance explained by the factors was redistributed to 30.80% for Factor 1 and 24.29% for Factor 2, whereas the cumulative variance remained unchanged. This indicates that the two factors sufficiently represent the scale's underlying structure. Based on the above table 5, Factor 1 is named A. Research Competence and Scholarly Engagement, and Factor 2 is named B. Research Supportive Institutional Environment.

Table 6 Factor Structure of the Scale, Along with the Mean, Standard Deviation, Item–Total Correlation, and Rotated Factor Load Values

S. No	Statements	Mean	SD	Item total correlation	Rotated factor load values
A. Research Competence and Scholarly Engagement					
1.	Engagement in research practices enhances professional skills and capabilities.	4.13	0.93	0.64	0.72
2.	Interested in exploring new areas of research beyond the core subject.	3.78	0.92	0.60	0.67
3.	Research practices enhance eligibility for promotion and career advancement.	3.89	0.99	0.66	0.77
4.	Investigating and addressing classroom issues through research enhances a sense of empowerment.	3.72	1.03	0.77	0.78
5.	Research topics are formulated with specific, measurable, and achievable objectives.	3.76	0.99	0.64	0.73
6.	Lack of proficiency in reviewing related literature. (negative item)	3.92	1.07	0.54	0.56
7.	Capable of preparing a research plan and focusing on specific issues.	3.73	0.83	0.62	0.77
8.	Impotent to formulate a clear statement of the problem. (negative item)	3.62	0.95	0.62	0.61

9.	Adequate competence in representing research design.	3.57	1.03	0.50	0.63
10.	Competent to choose an appropriate sample for the study.	3.94	0.85	0.56	0.71
11.	Proficient in formulating an original research instrument.	3.61	0.98	0.58	0.66
12.	Use of sources adheres to ethical standards.	3.93	0.91	0.57	0.55
13.	Skills in executing statistical analysis.	3.62	1.06	0.66	0.68
14.	Provides recommendations based on research conclusions.	3.66	0.99	0.63	0.68
15.	Lacking capability to write a clear research report. (negative item)	3.74	1.04	0.72	0.64
16.	Defends research report with accuracy.	3.85	0.94	0.68	0.72
17.	Revises research report based on the recommendations of panels.	3.76	0.99	0.57	0.64
B. Research Supportive Institutional Environment					
18.	Institution provides research grants for conducting research projects.	3.69	1.17	0.62	0.664
19.	Institution offers travel funds to attend conferences, seminars, and workshops.	3.62	1.16	0.57	0.75
20.	Institution provides research assistantship for data collection and analysis.	3.70	1.09	0.55	0.75
21.	Institution has established research centres that provide a supportive environment for conducting research.	3.79	1.04	0.63	0.86
22.	Institution ensures adequate research resources such as journals, books, and databases.	3.69	1.02	0.62	0.69
23.	Institution provides access to a technology-enriched environment to conduct research.	3.71	1.11	0.65	0.74
24.	Institution organizes research-supported conferences, seminars, and workshops to enhance research skills among teachers.	3.85	1.15	0.62	0.51

25.	Institution does not arrange mentorship programmes to provide guidance and support. (negative item)	3.74	1.05	0.61	0.71
26.	Institution has established a research community or network to receive feedback.	3.82	0.95	0.54	0.53
27.	Institution encourages interdisciplinary research collaboration across various disciplines.	4.04	0.89	0.50	0.55
28.	Institution establishes partnerships with schools to conduct research in real-world settings.	3.82	1.17	0.59	0.72
29.	Institution fosters international research collaboration with colleges from other countries.	3.81	1.02	0.57	0.79

Table 6 presents the factor structure, descriptive statistics, item–total correlations, and rotated factor loadings of the scale developed to measure Research Competence and Scholarly Engagement (RCSE) and Research Supportive Institutional Environment (RSIE) among teacher educators. The results indicate that the scale has satisfactory psychometric properties.

Interpretation of Descriptive Statistics

The mean scores of the items ranged from 3.57 to 4.13, indicating that respondents generally expressed a moderate to high level of agreement with the statements. This suggests that teacher educators perceive themselves as reasonably competent in research practices and acknowledge the presence of institutional support for such activities.

The standard deviation values ranged from 0.83 to 1.17, reflecting moderate variability in the responses. This indicates that although the participants differed in their perceptions, the responses were not highly dispersed, showing reasonable consistency among the respondents.

Research Competence and Scholarly Engagement (Items 1–17)

The first factor represents teacher educators' competence in conducting research and their engagement in scholarly activities.

Item–Total Correlation

The item–total correlation values ranged from 0.50 to 0.77, which were above the acceptable threshold of 0.30. This indicates that all items contribute meaningfully to the overall construct and demonstrate satisfactory internal consistency. The highest item–total correlation was"Investigating and addressing classroom issues through research enhances a sense of empowerment" (0.77), indicating a strong alignment with the construct. Comparatively lower correlations, though acceptable, were observed for "Adequate competence in representing research design" (0.50).

Rotated Factor Loadings

The rotated factor loadings ranged from 0.55 to 0.78, demonstrating good construct representation. Item 4 "Investigating and addressing classroom issues through research enhances a sense of empowerment" (0.78), Item 3 "Research practices enhance eligibility for promotion and career advancement" (0.77),Item 7 "Capable of preparing a research plan and focusing on specific issues" (0.77) with high loadings, which indicate that these items are strong indicators of research competence and scholarly engagement.

The negative items also demonstrated acceptable loadings: Item 6 "Lack of proficiency in reviewing related literature" (0.56), Item 8 "Impotent to formulate a clear statement of the problem" (0.61)

and Item 15"Lacking capability to write a clear research report" (0.64), which suggests that the reverse-worded items functioned appropriately within the scale after reverse scoring.

Overall, the findings reveal that the RCSE factor adequately captures competencies related to research planning, literature review, research design, statistical analysis, report writing, scholarly presentation, and professional growth through research.

Research Supportive Institutional Environment (Items 18–29)

The second factor measures the extent to which institutions provide a research-conducive environment.

Item–Total Correlation

The item–total correlation values ranged from 0.50 to 0.65, indicating acceptable homogeneity among the items. Item 23, "Institution provides access to a technology-enriched environment to conduct research" (0.65),Item 21"Institution has established research centres that provide a supportive environment" (0.63), have the highest item correlation. These findings suggest that institutional infrastructure and technological support strongly contribute to the overall perception of research support.

Rotated Factor Loadings

The factor loadings ranged from 0.51 to 0.86, indicating strong factorial validity. Item 21, "Institution has established research centres that provide a supportive environment for conducting research" (0.86), has the highest loading, indicating that research centers are a highly significant component of a supportive institutional environment.

Negative item 25, "Institution does not arrange mentorship programmes to provide guidance and support" (0.71), also showed a satisfactory loading, confirming that it effectively measures the absence of institutional support after reverse scoring.

These findings imply that institutional encouragement, collaboration opportunities, infrastructure, funding, and mentorship are important dimensions of a research-supportive environment.

Discriminant Validity

Discriminant validity was established by examining the inter-construct correlation between the ((RCSE) and Research-Supportive Institutional Environment (RSIE). In the present study, discriminant validity between Research Competence and Scholarly Engagement (RCSE) and Research Supportive Institutional Environment (RSIE) was examined using Spearman's correlation coefficient.

Table 7 shows that the two constructs are distinct and measure different concepts. The Spearman's rho correlation coefficient obtained between the RCSE and RSIE was 0.615, which is below the commonly accepted threshold value of 0.85 (or 0.90) for discriminant validity. This indicates that although the two constructs are positively related, they are not identical and represent different dimensions. The moderate positive correlation suggests that RCSE measures the individual research competence and scholarly engagement of teacher educators, whereas RSIE measures the institutional support and environmental factors that facilitate research activities.

Table 7 Discriminant Validity Analysis Correlations

			RCSE	RSIE
Spearman's rho	RCSE	Correlation Coefficient	1.000	.615**
		Sig. (2-tailed)	.	.000
		N	141	141
	RSIE	Correlation Coefficient	.615**	1.000
		Sig. (2-tailed)	.000	.
		N	141	141

**. Correlation is significant at the 0.01 level (2-tailed).

As the correlation was significant but not excessively high, the constructs demonstrated adequate discriminant validity. Therefore, it can be concluded that the scale dimensions are sufficiently distinct from one another and measure different constructs.

The first procedure to test the validity of the Scale for Research Practices for Teacher Educators

(RPS-TE) was to test the content validity of the item pool. Then, exploratory factor analysis (EFA) was conducted for construct validity to present the factor construct of the scale, and item validity was conducted to present the item discrimination index of each item.To test the reliability of the SRP-TE, internal consistency coefficients (Cronbach's alpha) were calculated. Data collected to develop the scale were analyzed using SPSS 20.0(Statistical Package for the Social Sciences).

Major Findings

Final Version of the Scale

S. No	Statements	SA	A	N	D	SD
Factor A: Research Competence and Scholarly Engagement						
1	Engagement in research practices enhances professional skills and capabilities.					
2	Interested in exploring new areas of research beyond the core subject.					
3	Research practices enhance eligibility for promotion and career advancement.					
4	Investigating and addressing classroom issues through research enhances a sense of empowerment.					
5	Research topics are formulated with specific, measurable, and achievable objectives.					
6	Lack of proficiency in reviewing related literature. (negative item)					
7	Capable of preparing a research plan and focusing on specific issues.					
8	Impotent to formulate a clear statement of the problem. (negative item)					
9	Adequate competence in representing research design.					
10	Competent to choose an appropriate sample for the study.					
11	Proficient in formulating an original research instrument.					
12	Use of sources adheres to ethical standards.					
13	Skills in executing statistical analysis.					
14	Provides recommendations based on research conclusions.					
15	Lacking capability to write a clear research report. (negative item)					
16	Defends research report with accuracy.					
17	Revises research report based on the recommendations of panels.					
Factor B: Research Supportive Institutional Environment						
18	Institution provides research grants for conducting research projects.					
19	Institution offers travel funds to attend conferences, seminars, and workshops.					
20	Institution provides research assistantship for data collection and analysis.					
21	Institution has established research centres that provide a supportive environment for conducting research.					
22	Institution ensures adequate research resources such as journals, books, and databases.					
23	Institution provides access to a technology-enriched environment to conduct research.					
24	Institution organizes research-supported conferences, seminars, and workshops to enhance research skills among teachers.					
25	Institution does not arrange mentorship programmes to provide guidance and support. (negative item)					
26	Institution has established a research community or network to receive feedback.					

27	Institution encourages interdisciplinary research collaboration across various disciplines.					
28	Institution establishes partnerships with schools to conduct research in real-world settings.					
29	Institution fosters international research collaboration with colleges from other countries.					

Practical Implications of the Study

To level up the research practices of teacher educators, this scale serves as a foundational framework that enriches teacher educators to assess their own research competencies and practices, identify strengths and areas that need improvement, and promote self-directed learning and continuous professional growth. Moreover, educators with strong research practices can channelize student teachers in action research and dissertations, encourage inquiry-based and reflective teaching methods, and amplify student critical thinking and problem-solving skills. In a related vein, institutions can design targeted professional development programs, organize specialized training programs for early career teacher educators, establish research centers and innovation hubs, frame research policies, allocate sufficient research grants, provide incentives for research productivity, incorporate research output assessment into faculty evaluation systems, provide constructive feedback, and bind research performance with promotions and career advancement.

Notably, this scale can be used as supporting evidence for quality benchmarks prepared by bodies such as the NAAC to demonstrate faculty research engagement, support documents for accreditation reports, and align with quality indicators related to research and innovation. This scale serves as a multi-faceted tool that extends beyond assessment to professional development, institutional improvement, and policy implementation, ensuring data-driven decision-making.

Limitations of the Study

This study has some limitations that should be acknowledged. The study has limited geographic coverage, which limits its generalizability to a broader population. This scale analyzes self-reported responses, which makes it subject to social desirability bias and over-or underestimation of research practices, which may affect the accuracy of responses. The study focuses primarily on selected dimensions such as research competence and institution support, while other factors such as organization culture, personal motivation, and leadership support may not be fully explored. This study focuses on the cross-sectional nature that captures research practices at a single point in time and does not reflect change over time. Although reliability and validity have been established, advanced techniques may not have been applied because of practical limitations.

Suggestion for the Further Study

Further studies may strive to expand to diverse contexts across regions and states and test its applicability in varied institutional settings, such as science and engineering colleges. Further longitudinal studies are needed to track changes in research practices over time and evaluate the impact of professional development programs. Future studies should combine quantitative tool-based assessments and qualitative methods to provide deeper insights into research practices. In future research, researchers may design and test training programs, mentorship models, and institutional support systems to examine their effectiveness in improving research practices. Further studies can apply SEM to strengthen the robustness of the tool and focus on norms or benchmarks that may be established in upcoming research. The present study provides a foundational framework for assessing research practices addressing these limitations, and extending their research can significantly enhance the validity, applicability, and impact of the tool in diverse educational contexts. Policymakers must initiate mandatory, structured professional development programmes on research methodology, academic writing, statistical analysis, research ethics, and emerging digital research tools forteacher-educators.

Policies should promote collaboration among teacher education institutions, universities, schools, industries, and international organizations to boost interdisciplinary and practice-oriented research. Every teacher education institution should establish a dedicated research support center to provide guidance on proposal writing, statistical analysis, publication strategies, funding opportunities and ethical research practices. Institutions should launch incentives, such as seed grants, publication awards, conference support, reduced teaching workload, and recognition for high-quality research contributions.

Conclusion

In the contemporary landscape of teacher education, research has become an indispensable component of professional competence, educational innovation and evidence-based practice. As teacher educators are expected to impart knowledge and generate and apply research to improve educational outcomes, the availability of a valid and reliable instrument to assess their research practices has become increasingly important. The present study was undertaken with the primary objective of developing and validating a comprehensive Research Practices Scale for Teacher Educators (RPS-TE). One forty one teacher educators working in teacher education institutions affiliated with Tamil Nadu Teachers Education University (TNTEU) in and around Tiruchirappalli district were involved in the study

To achieve this objective, the study systematically identified the major dimensions of research practices through an extensive review of the literature and expert consultation, leading to the development of relevant scale items. The instrument was subsequently subjected to rigorous psychometric evaluation, including content validation, reliability analysis, and exploratory factor analyses. The findings established that the scale possessed excellent internal consistency and satisfactory construct validity, confirming that it is a reliable and valid instrument for assessing research practices. The extraction of two meaningful dimensions—Research Competence and Scholarly Engagement (RCSE) and Research Supportive Institutional Environment (RSIE)—provides a comprehensive framework for understanding both individual research capabilities and the institutional conditions that facilitate research engagement.

Furthermore, the validated scale provides a strong foundation for future research. This enables researchers to conduct comparative studies across different institutional settings, disciplines, and geographical regions, as well as longitudinal investigations that examine changes in research practices over time. The instrument also provides opportunities for advanced validation studies using Confirmatory Factor Analysis (CFA) and structural equation Modelling (SEM), thereby enhancing its applicability and generalizability in diverse educational contexts.

In conclusion, strengthening research practices among teacher educators is fundamental to improving the quality of teacher education and fostering a culture of inquiry, innovation, and evidence-based teaching in the field. The Research Practices Scale for Teacher Educators (RPS-TE) developed in the present study addresses an important gap in the assessment of research practices by providing a scientifically validated and reliable instrument. Its application can promote professional growth, strengthen institutional research capacity, support quality assurance processes, and inform educational policies. Ultimately, sustained efforts to enhance research competence and institutional support will contribute to the development of a vibrant research culture, thereby improving the overall quality and effectiveness of teacher education in the country. The study recommends that policymakers initiate compulsory, structured professional development programmes on research methodology, academic writing, statistical analysis, research ethics, and emerging digital research tools for teacher educators. Policies should encourage collaboration among teacher education institutions, universities, schools, industries, and international organizations to enhance interdisciplinary and practice-oriented research.

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