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Innovative measures in enhancing educational research in teacher education

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Abstract

Teacher education programs are implementing innovative approaches to enhance educational research that can improve teaching and learning outcomes. This paper explores how teacher education plays a crucial role in equipping educators with the necessary skills and knowledge to engage in research that informs and improves educational practices. These innovative measures include research dissemination of research findings, adequate research duration to engage in research publishing, enhances linkages, partnerships and collaboration research integrity, research funding innovations and developing faculty research proficiency. By adopting innovative measures and tactics, teacher education programs are at the forefront of promoting research excellence and fostering a culture of inquiry among educators and discusses various strategies used to promote research engagement. Additionally, it emphasizes the need for continuous professional development and collaboration within the field of teacher education to further advance educational research and innovation.

Keywords: Innovative measures, tactics, educational research, teacher education

Introduction

In the rapidly changing landscape of education, teacher education programs are seeking innovative ways to improve educational research. The goal is to equip educators with the tools needed to carry out research that informs and enhances teaching practices, and ultimately, improves student outcomes. These strategies include digital platforms which streamline research processes and improve data management, making it easy for researchers to collect, analyze, and disseminate data.

By partnering with various entities (e.g., universities, government agencies, community organizations, and industry partners), educators can access a broader range of expertise, resources, and funding opportunities.

Continuous learning opportunities, such as research methodology training and grant writing workshops, are provided. These initiatives empower educators to become proficient researchers, boosting their ability to contribute effectively to educational research.

Using Data-Driven Approaches, these ensure valuable insights are accessible for future research and decision-making purposes.

Innovative measures are also being used to improve the management of educational research and foster an environment conducive to high-quality research. Such measures include technology integration for collaboration, strategic partnerships for interdisciplinary research, and professional development initiatives.

Higher Education Institutions (HEIs) are playing a role in improving leadership and organizational development approaches in research. They are developing programs for capacity building and attracting greater faculty involvement in research activities. The ultimate goal is to advance their research capabilities, improve educational outcomes, and contribute to the broader field of educational research.

Various researchers have contributed innovative approaches to enhance educational research. Brennan (2019) ^[11] presented an approach for enhancing student teachers' engagement with research methods, while Aggarwal (2014) ^[2] and Pipere (2006) ^[34] discussed strategies for teaching and the use of educational action research, respectively.

Research is a fundamental mission of universities, as it underpins teaching and learning. It is crucial not only in the classroom but also for the advancement and creation of knowledge,

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and for addressing societal problems (Cheetam, 2007; Rosas, 2013) ^[13, 39]. Pereira (2016) ^[46] argues that identifying a research problem, reviewing literature, collecting and analyzing data, and interpreting the information are all crucial parts of developing good research that can be used in the educational community.

There are various approaches to enhancing educational research. These include classroom research (McDonagh *et al.*, 2014) ^[26], building research capacity at the institutional level (Cheong *et al.*, 2020) ^[14], involving students as active members of the research team (Saunders *et al.*, 1989) ^[41], and using funding schemes to support small projects in educational development (Morris, *et al.*, 2006) ^[27].

In their case study, Kuzhabekova & Lee (2018) ^[22] expanded the contextualized knowledge base, conducted research relevant to policy priorities, broadened the area of research dissemination, and integrated the university into the global research networks. Qvortrup (2016) ^[37] posited that effectively linking research and practice necessitates an ability enhancement method that involves cooperating within the practical school setting through an issue-based learning tactic.

Creating a culture of research is also essential, where research is expected, discussed, produced, and valued. This impacts how research is conducted by both faculty and students, influencing the teaching-learning process in institutions and benefiting the outside community (Cheetam,

2007) ^[13]. All these initiatives enhance the quality and effectiveness of educational research conducted by educators and researchers in the field

Materials and Methods

The study used a mixed methods approach combining quantitative surveys with qualitative interviews and FGDs to collect comprehensive data on research management in the college. The findings from the two approaches were then integrated to provide a more complete understanding of the issues.

The quantitative phase utilized a survey questionnaire to analyze the general findings using statistical procedures. The qualitative phase used focus group discussions (FGDs) and interviews to strengthen and validate the questionnaire responses.

The research data were collected from 22 permanent faculty members of Catanduanes State University's Panganiban Campus. FGDs and unstructured interviews were conducted to validate the questionnaire responses.

Results

The summary of the measures for the enhancement of the challenges encountered in conducting research activity is shown in Table 1. Although respondents have individual preferences on the innovative measures, the over-all results reflect their ranking:

Table 1: Innovative Measures to enhance educational research

Innovative Measures	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank Weighted Mean	Over-all Rank
Participation in research agenda formulation	2	1	3	2	1	2.89	8
Clear research policy to all	1	3	2	2	5	3.54	12
Research Integrity and transparency	2	1	3	2	0	2.63	4
Adequate research duration to engage in publishing	4	6	1	3	1	2.40	2
Technology integration	2	0	0	2	2	3.33	9
Research impact assessment	2	0	3	1	1	2.86	7
7. Fostering Faculty proficiency	2	2	1	2	1	2.75	5.5
Research funding innovation	1	1	1	0	1	2.75	5.5
Enhance linkages, partnerships, and collaborations	1	3	1	0	1	2.50	3
Increasing the perceived value of research.	0	1	0	0	1	3.50	11
Support staff participation in research training/workshops and conferences/Virtual	0	1	1	3	0	3.40	10
Research dissemination of research findings	5	1	1	0	1	1.88	1

Based on the insights gathered from interviews and focus group discussions with faculty, several measures could improve the status of research at the institution. Research capacity building through training opportunities and conferences would develop faculty skills and expertise in conducting research. Improving research infrastructure like reliable internet access and adequate funding would create an environment conducive to research productivity. Taking initiatives from the research coordinating office to conduct and promote research activities among faculty would serve to increase overall research output. Better dissemination of information on research-related activities, partnerships, and collaborations would facilitate collaboration and connections.

The focus groups also provided valuable insights into current challenges facing faculty researchers, needed support programs, and suggestions for improving the research environment and support provided by the institution. Implementing some of these measures, such as research capacity building, improving infrastructure, and sharing information on opportunities, has the potential to

boost research output, productivity and overall status at the institution by empowering faculty researchers

Discussion

Innovative Measures to Address Educational Research Problems

1. Research dissemination of research findings: The study found that dissemination of research findings was not a priority for faculty members. They felt there were limited opportunities to share their research results within the institution and few journals to publish in. As a result, many research results end up sitting on shelves without being put to practical use. This wastes the efforts of conducting good-quality research (Smith, 2015) ^[44].

There are ways to improve dissemination include: encouraging faculty to present at conferences, both within and outside the institution; including presenting at conferences as part of annual evaluations; and utilizing multimedia channels to reach a wider audience (Jones *et al.*, 2018) ^[19].

The institution's management needs to create opportunities and incentives for faculty to disseminate their research findings more widely in order to maximize the potential impact and practical application of the results (Brown, 2020) ^[12].

Wider dissemination through knowledge translation to practitioners, policymakers and the general public can enable research findings to have a greater influence (Brown, 2020) ^[12].

2. Adequate research duration to engage in research publishing: Adequate research duration to engage in research publishing. This requires the Time Management for Faculty. The study found that faculty members place a low priority on disseminating their research findings due to limited opportunities within the institution and few publication outlets. As a result, much valuable research goes unused (Smith, 2015) ^[44].

Faculty members cited a lack of time as a major obstacle to conducting research, with teaching responsibilities claiming most of their time and attention. Addressing this time constraint through improved scheduling, workload planning and evaluations could enable faculty to engage in more meaningful research (Jones *et al.*, 2018) ^[19].

The institution can take several steps to support faculty research and knowledge dissemination: (1) Encourage faculty to present at conferences and include conference presentations in evaluations to incentivize dissemination (Brown, 2020) ^[12]. (2) Provide more time for research by reducing teaching assignments or adjusting workload percentages for teaching vs research (Brown, 2020) ^[12]. (3) Promote open-access publication to increase the visibility and impact of faculty research (Brown, 2020) ^[12]. (4) Utilize multimedia channels to share research results with broader audiences (Jones *et al.*, 2018) ^[19].

Lessening the teaching burden through adjustments to workload, course load and research leave would give faculty more time to focus on research, publishing and wider dissemination - leading to greater knowledge diffusion and impact. The institution's management has a key role to play in facilitating this process (Brown, 2020) ^[12].

3. Enhances linkages, partnerships and collaboration:

The study found that building quality research relationships, linkages and collaboration is vital for research capacity building and skill development among faculty. Qvortrup (2016) ^[37] and Tan (2015) ^[45] noted that effective collaboration and trust can enhance knowledge sharing, research skills, and the overall research process.

Networking and partnership with other academic institutions, researchers, policymakers and professional groups can: (1) Expose faculty to new research ideas (2) Exchange and enhance knowledge and research skills (Qvortrup, 2016; Tan, 2015) ^[37, 45] (3) Provide benefits throughout the entire research process (Qvortrup, 2016) ^[37] Sawyer (2004) ^[42] and NERF (2000) stated that research capacity includes factors like funding, infrastructure, time, and incentives - which can be enhanced through collaboration across the education system. Leveraging different expertise between departments also complements capacity-building efforts (Huang, 2014) ^[18].

The Institutions can enhance research capacity by: (1) Encouraging collaboration between departments to leverage different expertise (Sawyer, 2004; NERF, 2000) ^[42] (2) Establishing partnerships with universities, agencies, organizations and industry (3) Tapping into broader expertise, resources and funding opportunities through interdisciplinary collaboration (Sawyer, 2004; NERF, 2000) ^[42].

Through this, collaboration and linkages are essential mechanisms for building and disseminating research capacity among faculty members. Institutions should facilitate and incentivize collaborative research in order to maximize the potential benefits for knowledge generation and sharing, as highlighted by the cited authors.

4. Research Integrity: Ananiadou and Mayo (2019) ^[7] noted that research integrity encompasses ethical principles and practices like responsible conduct of research, avoiding plagiarism, ensuring data integrity and transparent reporting of methods and results.

Forster and Boer (2020) ^[15] found that transparency in research policies and practices is necessary to encourage faculty members to engage in research activities. Though processes may be in place, faculty need awareness of how research proposals are submitted, evaluated and approved (Godecharle *et al.*, 2013) ^[16].

Participants noted that it took a long time for proposals to be evaluated, which discouraged them from continuing with their research (Marshallsay, 2020) ^[25]. There is a need for more transparency in policies and practices to build motivation for conducting research (Anagnostopoulos *et al.*, 2019) ^[6].

Research transparency involves: (1) Appropriately disseminating research policies in response to the specific institutional context (Godecharle *et al.*, 2013) ^[16] (2) Informing faculty of the flow and timelines for research processes like proposal submission and evaluation (Adam, 2017) ^[1] (3) Providing timely evaluation and feedback on proposals to facilitate continued momentum in research efforts (Anagnostopoulos *et al.*, 2019) ^[16]

Transparency helps build motivation and accountability by: (1) Clarifying expectations upfront (Forster and Boer, 2020) ^[15] (2) Avoiding undue delays (Godecharle *et al.*, 2013) ^[16] (3) Highlighting areas for improvement (Marshallsay, 2020) ^[25] (4) Focusing researchers on achieving desired research outcomes (Ananiadou and Mayo, 2019) ^[7]

The adherence to principles of research integrity like responsible conduct, avoiding plagiarism and transparent reporting-as highlighted by Ananiadou and Mayo (2019) ^[7] is essential. Transparency in research policies, practices and processes is also needed-as found by Forster and Boer (2020) ^[15] and others-to fully enable and motivate faculty members to initiate and sustain high-quality research.

5. Research Funding and Infrastructure: Naqvi (2018) ^[31] found that enhancing infrastructure, resources and funding enables faculty members to conduct research. Adequate facilities, services and resources are vital for promoting educational research (Muhammad *et al.*, 2019) ^[29]. Though the institution was developing, respondents noted a lack of key research facilities like journals, references in the library, laboratory spaces, Internet access and funding (Phillips *et al.*, 2020) ^[35]. This lack of

infrastructure was seen as hindering research productivity (Muhammad *et al.*, 2019) ^[29].

Rafiq and Ameen (2019) ^[38] stress that adequate funding is needed to create a successful research environment on campus. A research center requires modern facilities to support academic studies, a well-stocked library with international journal subscriptions and reliable Internet connectivity (Naqvi, 2018) ^[31].

Improvements in infrastructure should include: (1) Up-to-date library collections and online resources (Rafiq and Ameen, 2019) ^[38] (2) Dedicated laboratory and research spaces (Muhammad *et al.*, 2019) ^[29] (3) Reliable Internet and computing resources (Phillips *et al.*, 2020) ^[35] (4) Sufficient funding for materials, equipment and travel (Naqvi, 2018) ^[31]

Muhammad *et al.* (2019) ^[29] conclude that lack of key infrastructure elements like funding, facilities and library resources inhibits research productivity among faculty members. Developing adequate infrastructure through resource investments and funding innovations can help enable and drive greater scholarly contributions from within the institution.

Developing faculty research proficiency: Pathania (2014) ^[33], Koksal (2011) ^[21] and Salom (2013) ^[40] found that enhancing research skills is an important factor in building a successful research culture within an institution. Participants suggested conducting training and workshops for faculty with limited research skills.

Beheshti *et al.* (2016) ^[9] noted that developing research knowledge, competencies and skills encourages creativity and innovation among faculty members. Equipping educators with evidence-based teaching methods and assessment techniques by incorporating research into practice can contribute to advancing educational research and student learning outcomes.

In addition to conferences, faculty wanted further development of their "research know-how" (Pathania, 2014) ^[33]. Educators can integrate technology since it has revolutionized educational research, enabling larger-scale data collection, analysis and collaboration (Anwyll, 2020) ^[8]. This fosters global exchange of ideas through online communities (Serdyukov, 2017) ^[43].

Omotayo (2015) ^[32] found that developing successful educational research begins with enhancing faculty members' research skills. Institutions and faculty both have roles to play in cultivating patience, perseverance and industriousness required for research (Kanyongo, 2005) ^[20]. When research knowledge is valued, it can lead to greater research productivity (Amin *et al.*, 2015) ^[5].

A strong academic workforce enables institutions to carry out research activities successfully (Al-Aama, 2014) ^[3]. Senior faculty with research experience can serve as research group leaders, attract external funding and participate in research networks (Amankwaa, 2016; Kwon *et al.*, 2013) ^[4, 23].

Providing training, resources and support to develop faculty research proficiency is fundamental to building a successful research culture within an institution.

While there are barriers exist as cited in the studies, Godfrey (2016) ^[17] stated that an ecosystem approach to developing a school research culture, involves systemic connectedness, leadership for knowledge creation, research-informed teaching practices and viewing the school as a learning organization.

Through these innovative measures, governments and institutions can take measures like providing funding, training, infrastructure and strategic support to help overcome these obstacles and develop meaningful research capacity among educators - enabling them to contribute to advancing educational research and practice.

Research Management Model to enhance educational research

Strategies to address research problems in teacher education followed the RESEARCH management model developed by Berces, J.A. (2021) ^[10]. The RESEARCH (Research leadership in the Enhancement of knowledge and Skills development through Encouragement and Engagement in Research activities with appropriate funding and infrastructure and Research dissemination in Collaborative and Hard work research endeavor) model highlights the goal of sustainable research culture. To provide a culture of research, Berces (2021) ^[10] emphasized that the institution needs to move beyond individual responsiveness towards enhanced research productivity through the identified research components followed by the enhancement of research capacities, dissemination of research through paper presentations and publication and finally the utilization of research in the form of extension program, policies, patents of technologies and changes in the socio-economic status of the clientele that the college serve.

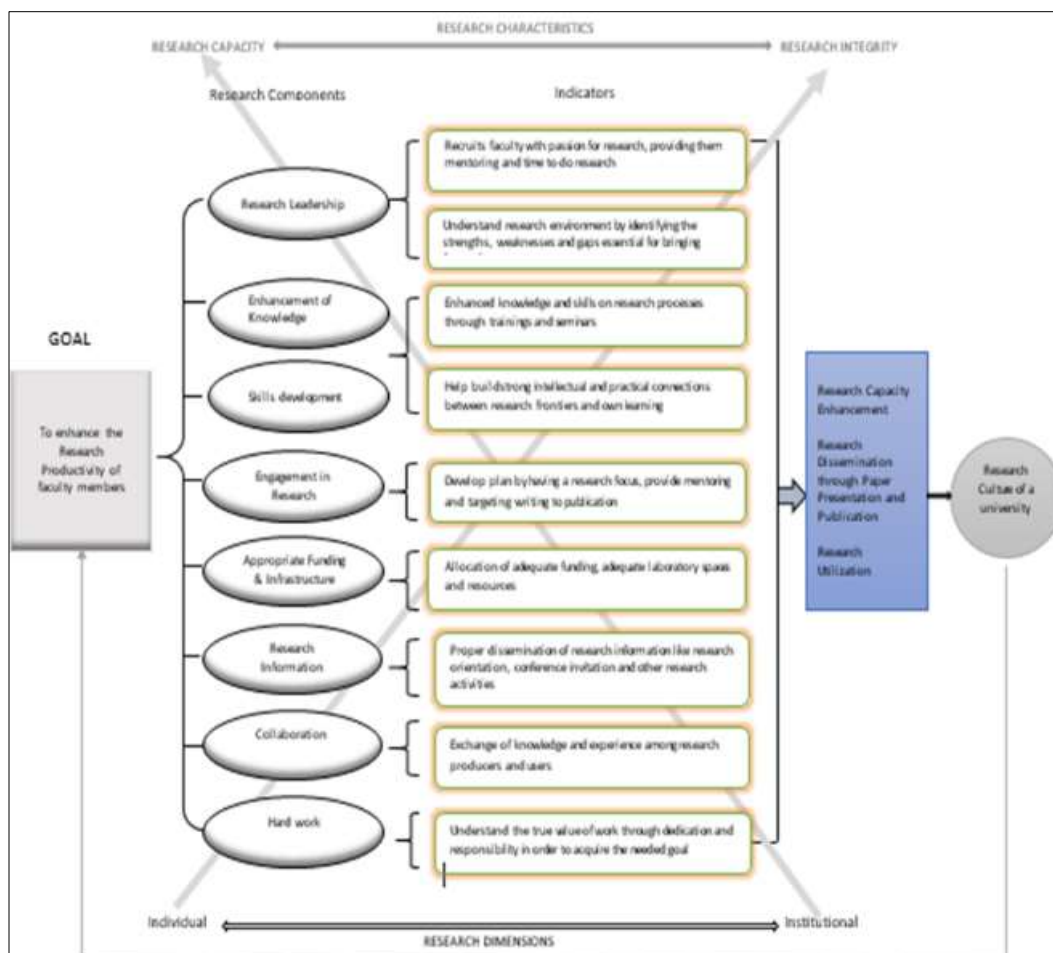
Conclusion

Teacher education programs are adopting innovative measures to enhance educational research among educators. These initiatives aim to empower educators to contribute meaningfully to the research process and continuously improve teaching and learning practices.

By embracing these innovative measures, programs would achieve the following: Actively involve educators in the research process; Build research capacity and proficiency among faculty; Promote a culture that values research and evidence-based practices; Encourage collaboration, partnerships and knowledge sharing; Provide funding, infrastructure and strategic support for research; Develop research integrity and transparency in policies and processes.

The overarching goal is to shape a future where research and practice intersect to create a more effective and impactful educational system. By equipping educators with research skills and knowledge, programs can help bridge the gap between research and practice - leading to new discoveries that improve education outcomes.

The innovative measures discussed would enhance educational research among educators in ways that empower them to continuously refine and advance teaching and learning through integration of evidence and best practices. This convergence of research and practice holds potential to transform the educational system for the better.



(Research Model of Berces J.A 2021) ^[10]

Fig 1: Research Characteristics

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Nil

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