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Enhancing Educators' Research Skills in Secondary Education in Huaihua, China

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Abstract: The aim of this study was to improve the research skills of secondary school teachers in Huaihua, China. The literature review analysed the importance of teachers conducting research for professional development and the need for training to improve research skills. The research methodology employed a quantitative research approach using a questionnaire to assess teachers' research skills. The results showed that teachers' research skills were generally moderate, especially in the areas of writing preliminaries, data collection, and selection of statistical methods. The study also identified teachers' lack of interest in research and excessive workload. In this regard, the study suggests targeted training to promote teachers' participation in research, establish a research culture, and continuously assess teachers' research competence in order to continuously improve secondary school teachers' research skills.

Keywords: Teachers' Research Skills; Training; Quantitative Research; Questionnaire; Research Interest; Workload; Research Culture.

1. Introduction

The Ministry of Education of China recognizes the significance of research in guiding and informing policies and practice. The ministry considers all staff as professional learners receptive to new ideas and experiences. As researchers, teachers are practitioners who aim to impact students' learning. By engaging in research, teachers enhance their research capabilities through various training and development programs. Research enables teachers to raise their opinions and suggestions, making them agents of change in society. Nowadays, educational research is crucial for both teachers and students, indicating a shift towards a research-based education system emphasizing the importance and utility of research in modern society.

Mary Jean Gallagher, Assistant Deputy of the Student Achievement Division of the Ontario Ministry of Education, emphasizes the significance of the Students as Researchers toolkit in embedding student voices in the change process. Students develop questions, interpret data, and report results, providing an essential student perspective and community engagement element to school changes across the province. Engaging in research is crucial for exercising citizens' rights and enhancing their influence in their environment. Partnership is essential in research, requiring collaboration with others in completing research and reporting. Ultimately, collaboration in research leads to stronger outcomes in all aspects.

Research is crucial to validate ideas and prevent misinformation. For the unemployed, research can help them find legitimate job offers and avoid illegal recruitment. Researchers identify and investigate areas not well represented in large-scale testing programs, seeking valid and reliable measurement methods. This contributes to new assessments supporting effective teaching throughout teachers' careers. Expertise in classroom observation, assignments, teaching knowledge, and value-added methodologies is essential. Research also guides the appointment and development of a competent research workforce in universities, informing strategies to enhance personnel profiles for research advancement.

2. RESEARCH OVERVIEW

Research is the lifeblood of every institution. In schools, teachers should take the initiative to do research. However, for them to be capable of doing research, they should possess the skills necessary to write a scholarly research, make research part of their daily routine, be able to contribute to the existing knowledge through dissemination, so that research outputs may be utilized by those who need it. However, many teachers in middle schools find research a daunting task. This is probably because they lack the know-how in research, are plagued by multifarious tasks that doing research is an annoying addition to their already mountain-high work, does not have the necessary fund for the data gathering, and thinks that their work will only be shelved to accumulate dust.

Like many schools in China, schools in Huaihua City face challenges for teachers. The researcher aims to assess the research capabilities of middle school teachers in Huaihua City. She believes this assessment can provide insights on areas to improve and formulate policies on research works. The results will help teachers make research a part of their job. Talis (2020) states that effective professional development involves training, practice, feedback, and follow-up support. Successful programs encourage teachers to participate in learning activities similar to those with students, fostering teacher learning communities. There's a growing focus on schools as learning organizations, enabling teachers to share expertise more systematically. To adopt research-based teaching methods, teachers need quality professional development to build knowledge and skills. The Learning First Alliance, an education organization, calls for changes in professional development context, process, and content for reading.

The practical approach of classroom action research is highly useful, especially in addressing problematic situations beyond mere understanding of a phenomenon. This cyclical

process involves multiple cycles of problem identification, data collection, data analysis, and intervention testing, all aimed at achieving an adequate solution. The success of this process depends on teachers' perception of research, with time being a crucial factor. Research culture encompasses trifocal functions (teaching, research, and community service), individual attributes and output, and institutional attributes and policies. Ramos-Mattoussi & Millian (2020) emphasize the opportunity for lecturers to perform academic research while serving their communities through reflection, informed inquiry, and planned improvement of practices.

Action research consists of planned, continuous, and systematic procedures for reflecting on professional practice and for trying out alternative practices to improve outcomes. Action Research can be implemented in the classroom or at the institutional level at schools, universities, organizations, community entities to diagnose and solve problems, test the effectiveness of new methods, and to implement change. It requires several cycles, or phases, from designing an intervention to implementing change and assessing the impact of applied intervention. All phases of the action research process require collaboration and participation of concerned parties.

"Teaching is highly complex, and most teachers have scant opportunity to explore common problems and possible solutions or share new pedagogical approaches with their colleagues" (Danielson and McGreal, 2018). The action research process is collaborative and investigative where practitioners work together to design and follow through with research on practical problems in their classrooms. Educational practitioners are involved in the process of inquiry to improve educational practice by studying the literature and research related to their questions and then choosing an approach or designing an alternative that might result in refining current practice.

Calhoun (2020) viewed action research as a vehicle to facilitate change through shared decision-making within a school setting. Calhoun's process includes five sequential phases: (a) selecting the area of focus, (b) collecting data, (c) organizing data, (d) analyzing and interpreting data; and (e) acting. Calhoun (2020) stated that engaging in action research involves progressing through steps of inquiry: choosing a focus area, collecting and analyzing data, studying professional literature, best practices, and acting. She also emphasized the importance of teachers studying and researching the professional literature that targets their area of focus. This critical reading provides the teacher researcher with a foundation and framework for further study.

In Eggen and Kauchak (2019), background knowledge in the form of schemes affects perception and subsequent learning. Research findings have corroborated this claim that background knowledge resulting from experience strongly influence perception. Lindner (2019) regarding the motivating factors that affect the conduct of research among the employees of Ohio State University Research and Extension Center, he found 10 motivating reasons in the conduct of research. These were (a) interesting work, (b) good wages, (c) full appreciation of work done,(d) job security, (e) good working conditions, (f) promotions and growth in the organization, (g) feeling of being in on things, (h) personal loyalty to employees, (i) tactful discipline; and (j) sympathetic help with personal problems.

According to Yvonne Steinert, Faculty development initiatives in the year 2010 will need to respond to changes in medical education and health care delivery, to build on the achievements and accomplishments of the past, and to continue to adapt to the evolving roles of faculty members. To remain at the forefront, faculty development programs will need to broaden their focus, consider diverse training methods and formats, conduct more rigorous program evaluations, and foster new partnerships and collaborations. Academic vitality is dependent upon faculty members' interest and expertise; faculty development has a critical role to play in promoting academic excellence and innovation.

Similarly, Johnson (2020) stated, "The future directions of staff development programs, teacher preparation curricula, as well as school improvement initiatives, will be impacted by the things teachers learn through the critical inquiry and rigorous examination of their own practice and their school programs that action research requires". Empowering teachers to examine their own practice through classroom-based inquiry will provide a significant step towards the reform of teaching overall.

Ausubel's famous dictum goes, "The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly". The corollary for teachers, schools, and education systems could be formulated as: the most important single factor influencing development of teachers, schools, and educational systems is their current state. Ascertain this and map out a realistic path for development accordingly (Berg, 2016). This dictum led our faculty development efforts in the Philippines at every turn with continuous efforts to assess where the system was, where individual lecturers were, and where students were.

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Along with Rényi, Fullan (2020) also emphasized teacher reflection as being a key component to teacher learning and school improvement in his framework for educational change. Therefore, given the premises from the authors above, guiding teacher practice through engaging in action research and reflection provides a means for changes in instructional practices.

Teachers that engage in the action research process are immersed in examining "what it means to make disciplined as opposed to intuitive statements about teaching" (Freeman, 2019). Therefore, the teachers' account is derived from evidence that has been gathered through a systematic and evaluative research process.

Prasetyo (2016) stated that teachers' perception on action research is the process by which teachers perceived classroom action research as the instructional improvement. Little and King (2016) maintained that perception on research as well as classroom action research from teachers is important since the main function of research is to improve research procedures through the refinement and extension of knowledge. The refinement of existing knowledge or the acquisition of new knowledge is essentially an intermediate step toward the improvement of the social studies. They found out that teachers' perception in doing classroom action research depends on their image on classroom action research.

However, Williams and Coles (2019) contend that evidence suggested that teachers felt reasonably confident about seeking general information, though their confidence was likely to be restricted to their knowledge of the relatively narrow range of sources they use more frequently. They tended to see the process of seeking and evaluating research information as more of a challenge, and confidence levels were lower in the primary and nursery sectors than in the secondary sector. Kunandar (2020) stated that teachers' perception on classroom action research is influenced by time, cost, image, technically, and effort. Kunandar also stated that some teachers argued that doing classroom action research needs a lot of time.

Guskey (2019) also focused on teachers as the key to successful reform and stated, "The overwhelming majority of educators are thoughtful, inquiring individuals who are inclined to solve problems and search for answers to pressing questions. The inquiry/action research model of professional development provides them with opportunities to do just that".

Action Research involves five key steps: planning, acting, observing, reflecting, and re-planning (Kemmis and McTaggert, 2019). Teachers can use this method and reflection to improve their practice continuously. Both Kilbourne (2020) and Schon (2019) emphasized the importance of reflecting on experience for professional growth. This concept has been central to literature on school improvement for decades. Action research enables educators to inquire, observe, collect data, and dialogue during the school day, actively involving teachers in their own educational process (McNiff, 2019). McNiff (2019) and Simmons (2018) highlighted the significance of action research in empowering teachers. McNiff argued that teacher research can improve education by empowering teachers to be aware, critical, and equipped to change their practice. Simmons also emphasized the role of action research in influencing participants' perspectives on professional development and empowerment.

Danielson and McGreal (2017), Kemmis and McTaggert (2019), McNiff (2019), and Schon (2019) emphasized the importance of teachers critically reflecting on their practice. They all agreed that teacher introspection and on-going discussion about his or her own practice were crucial. Action research provided a structured and disciplined approach to reflecting on the teaching and learning process. Danielson and McGreal (2020) said that reflection on practice is one of the most powerful activities for professional learning. Using these strategies demonstrates teachers' professionalism as 'reflective practitioners' (Brookfield, 2020; Schon, 2019). It also lays the foundation for teachers to become 'practitioner researchers', who are motivated to investigate their professional problems and find, evaluate, and refine solutions (Stenhouse, 2019). Scholarly teachers aim for professionalism in teaching and research, but there is some variation in how 'scholarly teaching' and its relationship to the scholarship of teaching are defined (e.g., Boyer, 2020; Richlin, 2019). DiGuilio (2019) gave examples of helping teachers, including continuous professional development, incentives, and motivating them to do classroom action research. Williams and Coles (2019) found that teachers' attitudes towards research vary based on research experience, subjects taught, and age. Teachers currently involved in research-based studies tend to have more positive attitudes towards research.

According to Howell (2020), developing research capability is a school-based framework. Research is difficult. In any research project a large range of issues and questions need to be considered if a coherent and valid research approach is to be created, even before any decision on analysis and reporting of results is made. One of the reasons I enjoy teaching at master's level so much is the opportunity to work with people who are often taking their first tentative steps towards an ability to complete a coherent piece of research, based on a developing and deepening understanding of both subject knowledge/issues and the research process. For many years there has been a perceived tension in education between the work of academics, often seen as esoteric and remote, and the day to day work of teachers in schools.

The rationale for the development of high-level research capability in some pre-service students is based on six reasons. Firstly, students who are interested in and knowledgeable about research have broader career options in that they can pursue careers in either teaching or research or positions that draw on both types of capabilities, such as academia. Secondly, research-oriented units are a form of curriculum differentiation that provides challenge for capable students and enables them to pursue topics of interest (VanTassel-Baska, 2020).

The students possess the potential to become influential leaders and researchers in education. Graduates with research capabilities can make valuable contributions to educational organizations and the field through various roles, such as collaborators, mentors, and bridges between professional and research communities. An undergraduate research program can enhance the quality and quantity of higher degree students and provide a solid foundation for graduate studies. In McTaggart (2019), teachers' ability to conduct classroom action research relies on their knowledge, skills, and motivation. Eko (2012) emphasized that teachers' perception and competency significantly impact their research capabilities, while teacher training also plays a crucial role in enhancing their research capabilities.

Cuizon and Cayogyog (2018) said that knowledge and skills affect the implementation of doing action research. Studies on research culture have focused on the kind of environment that leads to research productivity among faculty members in HEIs. Bland and Ruffin (as cited in Pratt, Margaritis, and Coy, 2019) identified 12 factors present in high performing research environments. These are: clear goals for coordination, research emphasis, distinctive culture, positive group climate, decentralized organization, participative governance, frequent communication, resources (particularly human resources), group age, size and diversity, appropriate rewards, recruitment emphasis, and leadership with both research skill and management practice.

Salazar and Almonte-Acosta (2012) stated that the factors necessary to improve research productivity includes: time, strong belief in research endeavor, faculty involvement, positive group climate, working conditions, organizational communication, decentralized research policy, research funding, and clear institutional policy for research benefits and incentives. Dundar and Lewis (2020) found that individual attributes, institutional and ministryal attributes, as well as ministryal culture and working conditions affect research productivity. Additional indicators of research culture, derived from the broad criteria evident in CHED's NHERA, are: research agenda, policies and guidelines on

research incentives, services and facilities for research, middleations, and research capable faculty.

Apruebo (2018) defined perception as organizing and interpreting sensory input to create meaningful experience. Eggen and Kauchak (2019) stated that background knowledge affects perception and learning. Research supports this, showing that experience-based knowledge strongly influences perception. Ausubel believed that learners' prior knowledge is the most important factor in learning. Fullan (2020) emphasized teacher reflection for educational change and school improvement. Prasetyo (2016) said teachers' perception of action research is key to improving teaching. Little and King (2016) agreed that teachers' perception of research is essential for improving research procedures.

This study focuses on institutional and ministerial attributes, ministry culture, and working conditions that affect research productivity. Dundar and Lewis (2020) emphasized individual attributes, research focus, and elements like distinctive culture, positive group climate, and decentralized organization. Participative governance, frequent communication, and human resources are also crucial. The study also considers group age, size, diversity, rewards, recruitment focus, and research-skilled and management-practicing leadership.

The existing body of work provides valuable insights into the need for teachers to possess capabilities in undertaking research, which is the core objective of the present study. It is believed that exploring teachers' capabilities and the challenges they face in conducting research will enable us to provide practical solutions and thereby enhance their professional development. Additionally, research serves as an opportunity for both current researchers and middle school students to acquire new and improved ideas in writing research studies. Future teachers can also benefit from this research by gaining better ideas and strategies that can be applied in the field of teaching, their previous experiences.

By addressing society's demands, this study aims to contribute to enhancing and developing training programs for students and teachers. Its ultimate goal is to modernize the learning environment, making it more engaging and conducive to global competitiveness. Considering teacher capability in research areas is crucial, as it serves as a critical tool in assessing teachers' strengths and weaknesses in this domain. Understanding each teacher's capability throughout the research process, including data collection, inference statistics selection, and research development, is fundamental to achieving this goal.

3. RESEARCH METHODOLOGY

Quantitative research method with descriptive research design was adopted in this study. Specifically, the researcher utilized a questionnaire type of descriptive research which enables the researcher to gather information from the respondents or participants without any difficult in answering the question required using a “4-point-Likert-Scale.”

The study aimed to assess the research capabilities of teachers at Huaihua No. 4 Middle School, China, focusing on research-related abilities, training, and development programs, excluding personal information. Questionnaires were used to gather data, including methods of data collection and statistical treatments for research proposals. The study employed the descriptive evaluative method and drew conclusions based on questionnaire evidence.

4. FINDINGS SUMMARY

4.1. Profile of the Teacher Respondents

Teacher respondents are mostly from the age group of 31-40 years old (39.2%), majority are female (55.1%), and holding a Master’s degree (53.8%).

4.2. Evaluation of Teacher Respondents' Research Capabilities

Teacher respondents have shown a moderate level of research capability in terms of data gathering procedures, and in selecting appropriate statistical treatment. They also manifested a moderate level of research capability in terms of writing the preliminaries in research, as well as in developing and proposing research. An over-all mean value of 3.19 reveals that teachers exhibited a moderate level of research capability in general.

5. Conclusion and Recommendations

Drawing upon the findings, the following conclusions have been reached: The majority of the responding teachers are young women who have attained their Master's degree, with a significant number also possessing Doctorate degrees. In terms of their research capabilities, teachers generally perceive themselves to possess a moderate level of proficiency, particularly in areas such as writing preliminaries, data collection procedures, selecting appropriate statistical treatments, and developing and proposing research. This indicates that teachers possess a certain degree of research competency. However, the top most serious issues encountered by teachers in conducting research are a lack of interest in research activities and feelings of excessive workload. All identified problems were deemed to be significant, potentially impacting teachers' research capabilities. It is noteworthy that teachers' assessments of their research capabilities remain relatively consistent across different age groups, genders, and educational backgrounds.

Based on research findings, the researcher suggests several measures to improve teachers' research capabilities. Firstly, the school should organize targeted training workshops for teachers, focusing on writing preliminaries, data collection, statistical tools selection, and research development. Secondly, teachers should be encouraged to actively participate in the school's research capability enhancement program and provided with updated research guides. Additionally, the school may consider offering incentives to successful researchers to promote a research culture. Finally, replicating the study can help continuously evaluate teachers' research skills progress. Teacher training should be focused on outcomes, with research experts providing guidance and closely monitoring teachers' progress from concept to proposal submission. Additional mentoring and training among teachers will improve their knowledge and research skills, and a needs assessment may be conducted to identify areas for improvement in research conduct.

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