Increasing Research Capability among Masters Teachers in the Countryside Area of the Philippines: Bases for Proposed Program Intervention

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Abstract

Evidence-based practice is the foundation of the teaching-learning process. To effectively apply evidence-based practice, Master Teachers (MT) must understand the basis of research. Previous work has identified the lack of involvement of teachers in research. This study evaluated the effect of a research capability training-workshop, a three-day research enhancement program on the perceived research competencies of master teachers. Prior to the start and on the completion of the extension project – *I Can Do It*, MTs completed a research competency scale. Results showed that self-perceived competence increased in a set of specific research skills. In light with these positive findings, MTs indicated that their general research competencies towards research were changed. The results of this study provide evidence that planned intervention aimed to increase research capability among master teachers was productive.

Keywords: *extension activities, research capability, master teachers*

I. INTRODUCTION

Teachers play a critical role in community development and nation-building, in general (Department of Education - Teacher Education Council [DepEd-TEC], 2017). Quality teachers can develop holistic learners who possess the competencies to "realize their full potential and contribute meaningfully to building the nation" (DepEd, 2017). One of the indicators of professional standards for teachers is establishing community linkages and professional engagement, i.e., teachers are expected to "identify and respond to opportunities that link teaching and learning in the classroom to the experiences, interests and aspirations of the wider school community and other key stakeholders" (DepEd-TEC, 2017). Documentation of these activities can be meaningfully done through research activities.

The Basic Education Governance Act of 2001 underscored the role of research in the management and administration of the basic education system. With this mandate, DepEd has strived to strengthen research in the department (DepEd, 2016). To realize and develop research culture, competent researchers are needed within the fields of education (e.g., master teachers) to produce quality research and provide evidence-based practices for educators, i.e., "basis for education policies and reforms, identifies pedagogies that are effective, and discovers procedures that enhance the delivery of educational services" (Vinluan, 2012).

Historically, master teachers (MT) track was created under E.O. 500 series of 1978. The executive order "establishes a system of career progression and promotion for public school teachers that attaches a premium to classroom effectiveness, and that allows teachers to remain in the classroom while advancing in stature and compensation". Master teachers are usually regarded as models for other teachers, experts in teaching, and having great reputations and accomplishment in their subject domains (Fan et al., 2015), mentor pre-service teachers, develop curriculum, engage in professional development, and conduct cooperative research (Utley, Basile & Rhodes, 2003). Much has been known regarding master teachers' pedagogies as they are expected to exemplify "practicality, innovation, flexibility, and teaching as an art (Fan et al., 2015) due to professional training.

In addition to the function as expert teachers among the peers, master teachers are also expected to mentor young teachers. Mentoring ranges from topics such as school culture of excellence, effective pedagogies as felt needs among young teachers including research. Research skill set is arguably less of their priorities. Apparently, their years of experience are primarily tied to classroom instruction. In

other countries like Singapore, they place a premium emphasis on the mentoring skills of master teachers. They have formed "corps of master teachers" who are trained master teachers to mentor budding teachers (Liu, 2017). In the Philippines, this trend is starting to emerge particularly in the content area but limited in research. Observations have shown that in DepEd-initiated research activities, participation among MTs is minimal. Based on observation, during the Fourth Baybay City Division Research Conference on March 2018, only 10 MTs have presented research papers out of 87 MTs (Secondary and Elementary) in the Baybay City Division. Roughly 10% are exposed to research.

DepEd has introduced educational interventions to raise research engagement for possible reforms and reorientation. Professional development for teachers in the Philippines were usually done through cascading model wherein a school or division conducts in-service trainings and seminars (Lomibao, 2016; San Antonio, Morales & Moral, 2011). Participants who were trained in the regional or national level were expected to conduct re-echo seminar. Teacher-participants in the school and in the division level acted as audience for the talks and demonstrations of the speakers or resource person. However, experts have commented that there was much dilution in using this top-down one-shot model (Lomibao, 2016).

Varied approaches are needed to build and develop a research culture. Studies have shown that in a high functioning institution, "autonomy and egalitarianism, along with a strong cultural ethos supporting achievement and individualism" are present (Edgar & Geare, 2013). Quimbo and Sulabo (2014) revealed that research self-efficacy has been found out to be a significant determinant of productivity. When teachers are supported through research capability training, they are able to change from being a teacher to a researcher, and research serves as a vehicle for professional learning (Villalino & Cagasan, 2012; Watkins, 2006). The College of Education (CoEd) of Visayas State University (VSU) as a teacher training institution works hand-in-hand with DepEd Baybay City Division. Through the extension service project dubbed as *I Can Do It: Master Teachers' Research Capability Building*, CoEd designed a three-day training-workshop catering 30 master teachers from different districts. Carefully planned interventions such as extension service project may produce desirable results to the clientele (Ayuyang & Valdez; Dela Cruz, 2016; Ontoy, 2015).

This article aimed to report the self-assessment research competencies of master teachers in an extension service project.

II. METHODOLOGY

Research Design

The study used one-group pretest-posttest design to determine the effectiveness of research capability training for MTs in Baybay City Division on November 21-23, 2019.

Respondents

The respondents were master teachers in Baybay City Division, DepEd. Initially, there were 30 participants (male = 3, female = 27), however, only 29 participants completed the study. Years of service ranges 10 (minimum) to 32 (maximum). Average years of service was 17.19 (SD=6.22).

Instrumentation and Data Gathering

Self-assessment is important in recognizing an individual's strengths and identifying areas for growth. Bandura's (1991) social cognitive theory provides a foundation for teachers' self-assessment of their research competencies. The study used the self-assessment version of the research competency scale (RCS) (Swank & Lambie, 2016). The RCS contained 6 research competencies domain areas: (a) research inquiry/literature review, (b) general research methodology/processes, (c) qualitative research methodology/processes, (d) quantitative research methodology/process, (e) research ethics, and (f) dissemination of research/scholarly writing. The response format is a 5-point Likert-type scale ranging from *not competent* to *very competent*. The RCS calculates a total score (e.g., overall research competencies) and subscale scores (e.g., research competencies in specific domain such as research ethics based on identified factors). Internal consistency using Cronbach's alpha, was 0.979 for the overall assessment. Additionally, the internal consistency for each RCS factor: (a) Factor 1: *Qualitative Research Processes* (0.987); (b) Factor 2: *Quantitative Research Processes* (0.964); (c) Factor 3: *Research Ethics* (0.949); (d) Factor 4: *Dissemination of Research/Scholarly Writing* (0.940); (e) Factor 5: *Research Inquiry/Literature Review* (0.917); and (f) Factor 6: *Research*

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Sampling Methods (0.957) met the standard (0.70 or above).

Since this article is an output from the extension project, Visayas State University (VSU) forged a cooperative relationship through memorandum of agreement with DepEd Baybay City Division to capacitate MTs in conducting classroom-based research. During the first day, the MTs completed the survey and took the same survey in the last day of the training-workshop.

*Module for the training (*I can do it: master teachers' research capability building). The module is tailored-fit for DepEd teachers with the following topics: Participatory Action Research Tools, Basic Education Research Agenda (BERA), research Management Guidelines, Technical Aspects of Research Writing, Quantitative Research in The Classroom, Qualitative Research in The Classroom (with emphasis on descriptive phenomenology), and Ethics in Research. Variety of delivery methods was employed. For example, in participatory action research tools (Bergold, 2012), in a small group, the MTs identified and described the stakeholders using stakeholder analysis matrix. From the selected stakeholder, problem analysis followed using metacards to establish possible cause-effect relationship. Re-stating the problem into positive statement, objective analysis leads to means-end relationship. Selecting the most appropriate strategy was the last tool presented.

Data Processing and Analysis

The mean increment score (Gravoso, Pasa, Labra, and Mori, 2008) was used to determine the change of the score before and after the intervention and a paired *t*-test was conducted to determine the significant differences after the intervention.

Ethical Considerations

In the study, the data was treated with utmost confidentiality. The names and other personal information of the selected participants were not disclosed using pseudonyms.

III. RESULTS AND DISCUSSIONS

Profile of respondents

Most of the participants were female (93.10%). More than half (65.52) were MT-1. It should be noted that while the intervention was intended for MTs, two participants were Teacher 3 because they are waiting for the confirmation of their MT status. Almost half has advance degree (i.e, master's and doctorate degrees (48.27%). Majority has obtained their MT status within the first 5 years (72.41%). The presence of early career MT (i.e., 1-5 years) is a good indication of inclination to research. In a management perspective, MTs can gain more and mentor budding teacher-researcher in the process. Few have attended conferences (31.03 %). Low attendance to conferences can be attributed to several factors. For example, the management has to approve their participation because of prioritization of funds. Although they have funded research but failed to indicate presentation in conferences. Minority has publication (3.44%). The meager research publication shows that research is not yet a norm in basic education level (Watkins, 2006). It is observed that when teachers become involved in action research processes, they are regarded as exceptional. Even in higher education institution (HEI), similar finding was observed that faculty members were not productive in research (Quimbo, 2013). While all of them have attended a DepEd-organized research training/workshop in the last two years, none have participated in a VSU-led research forum. Participation to DepEd-organized research training is a clear indication that it strongly pushed for evidence-based practices. The link between HEIs and DepEd in Baybay City Division is emerging and yet to be nurtured.

Table 1. Demographic characteristics of the participants

Variable	% (n)		% (n)
Sex		Educational Attainment	
Male	6.90 (2)	Supplemental	3.44 (1)
Female	93.10 (27)	Bachelor	48.28 (14)
Plantilla position		Masters	44.83 (13)
Teacher 3	6.89 (2)	Doctorate	3.44 (1)
MT-1	65.52 (19)	Years of Service as MT	
MT-2	24.14 (7)	1-5	72.41 (22)
Conference attended	31.03 (9)	6-10	17.24 (6)
Research publication	3.44 (1)	11-up	3.44 (1)
Attended a DepEd-organized research training/workshop in the last two years?	100 (29)	Attended a VSU-organized research training/workshop?	0 (0)

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Figure 1 shows the differences of the incremental score of the respondents in research competencies. Results showed significant differences in the respondents' incremental scores in all subscales, qualitative research processes, $t(28) = 7.42$, $p<.05$), quantitative research processes, $t(28) = 5.75$, $p<.05$), research ethics, $t(28) = 8.06$, $p<.05$), dissemination of research/scholarly writing, $t(28) = 6.88$, $p<.05$), research inquiry/literature review, $t(28) = 7.53$, $p<.05$), and research sampling methods, $t(28) = 8.76$, $p<.05$. Results further showed that the posttest score of research competency scale was significantly higher than the pretest, $t(28) = 8.73$, $p<.05$).

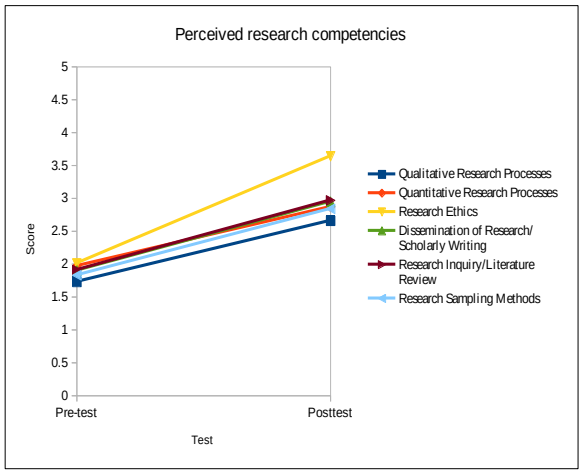

Figure 1. Mean increment scores

The findings have shown that this simulated training-workshop extension project, intensive learning experience had the capacity to develop the research skills among master teachers. It adds to the minimal literature in education professionals on teaching and learning strategies to promote research skill development (Davidson & Palermo, 2015). Moreover, the study contributes to the growing evidence to enhance teacher competencies, i.e., research, provided in the Philippine Delopment Plan 2017-2022 which is focus on achieving quality, relevant, and liberating basic education for all to accelerate human capital development (NEDA, 2017). When MTs are provided with favorable research environment characterized availability of support through, research facilities, access to research mentors, there is increase beliefs in research competencies (Villalino & Cagasan, 2012). While education degree is not primarily research oriented, supplemental activities to enhance research skills is needed. In this study, self-assessment of research skills was used to facilitate reflection and learning rather than summative assessment. When used for these purposes, Davidson and Palermo (2015) argued that "self-perception is an important component of learning". This implies that those with higher perceived competence have greater confidence that they can conduct research efficiently (Quimbo & Sulabo, 2014).

To ensure growth in research competencies, researchers believed it is an interplay of several factors such individual attributes which refer to the knowledge, skills, values and attitudes including readiness, capacity, and experience that the MT possesses relative to the conduct of research (Clemeña & Acosta, 2007). Organizational interventions likewise shape MTs perception (Clemeña & Acosta, 2007; Villalino & Cagasan, 2012). For example, administrative support and favorable research environment possibly favor research productivity.

Among the domains, the graph merits salient discussion on the competencies of MTs. Research ethics has the highest gain. A plausible explanation is that all MTs have attended DepEd-led trainings; ethics is well-articulated as espoused in the research management guidelines (DepEd Order No. 16, 2017). Research ethics ensure protection of learners as participants of the study such as ensuring confidentiality of handling data and providing

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consent forms where necessary. Additionally, qualitative research approach is the least among the priorities. This suggests that quantitative research paradigm is dominant mode of investigation. During the workshop, MTs were new to qualitative protocol. They have at least lectures on qualitative research in general. In this extension project, descriptive phenomenological method (Giorgi, 1997, 2012) was given emphasis; MTs were given pieces of advice to subscribe to a certain qualitative methodology they can fully understand.

In the post activity evaluation, the participants (n = 14) have rated strongly agree on preparation (M= 4.80, SD=.45), content delivery (M= 4.84, SD=.40), training facilitator (M= 4.96, SD=.21), facilities, accommodations and food (M= 4.99, SD=.12), and general satisfaction (M= 4.95, SD=.23). Some remarks were offered for services in the future. In content delivery, "*Instruction must be given ahead completely*", "*The contents were clearly delivered to us participants". "Interactions were challenging, some with the participants who participated actively*". In training facilitator, "*facilitators are knowledgeable and expert of the topic. Very interesting*!". In Facilities, Accommodations and Food, "*no available glass for water after snacks*", "*very much comfortable"*. "*Food serve were excellent, very healthful*". In general satisfaction, "*yes we love to have this training to our own stations with your expertise".* Two things needed to be addressed in the future activities. Interactions are critical for bond in all the participants. Based on comments, we understood this occasion that a group of MTs working together was rare. We need to make sure everyone can get along at the start of the engagement. Finally, planned intervention aimed at increasing research skills among master teachers produced desirable results.

IV. CONCLUSION

The 3-day research capability building appeared successful in enhancing master teachers' research skills. Limitations are given emphasis. Measuring actual participation in research is needed. Future research may follow this cohort longitudinally and describe the most significant changes MTs had experienced to assess the impact of this learning experience, e.g., most significant changes experienced in the extension project (Velarde, Gravoso, Cagasan & Gabrillo, 2007). Another limitation is using one-group pretest-posttest design which should be clearly acknowledged. This study did not use a comparison group but comparing master teachers' research competencies before and after participating in the project. The difference between pretest and posttest may be affected by other factors besides the treatment such as history, maturation, and testing effects which is a limitation of the one-group pretest-posttest design (Ma, Shek & Chen, 2019). The effectiveness of an intervention program without the use of a control group may be underestimated in the evaluation process of master teachers' capability building project. Besides, MTs may gain positive experiences in participating in other research training-workshop (i.e., history effect). The absence of a control group should also be noted. Lastly, the pretest-posttest design could be useful in program evaluation. In line with Ma, Shek and Chen (2019), observation in some practical situations, one-group pretest-posttest design was considered an appropriate research design when the intent was to obtain tentative insights about an intervention.

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