Research Productivity of Arts and Science University Teachers in Myanmar

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Abstract

This paper explores the different conceptions of research held by the academics in terms of their levels of research productivity, their levels of research training, whether they considered themselves an active researcher and a member of a research team, and their disciplinary differences. This analysis reviews research productivity of Arts and Science university teachers in Myanmar. Assessment of the impact of research projects is of interest for both educational and research-oriented segments of arts and science universities. Here, we examined the scholarly products of university teachers' research productivity. It was a prospective cross-sectional questionnaire study. The questionnaire is usually designed to create a relatively straightforward process for data collection, entry and analysis. All 425 university teachers were e-mailed a questionnaire. For this cross-sectional study, we look at the research productivity of a certain population of Arts and Science university teachers in Myanmar. The researchers evaluate people from different specializations, geographical location and social backgrounds. Cross-sectional data or a cross section of a study population, in statistics is a type of data collected at the specific period of time. The analysis might also have no regard to differences in time. In total, 417 university teachers (mean age 27 years; 74% females) responded. Among them, 29 university teachers were main authors on scientific papers published in international research journals, 64 university teachers had co-authored a paper submitted for international publications and 32 university teachers had published in national research journals. One hundred and thirty-two reported that

they would in the coming 5 years prefer to participate in research conferences. However, 263 reported that they lost their fundamental interest in doing research. It is possible that many researchers lost interest in research activity, because of not getting proper guidance. Traditionally, many Myanmar university teachers are granted tenure without showing a research record; many of them continue to be inactive for many reasons although research outputs have recently become a major criterion for promotion. According to the theory of planned / reasoned behavior (Ajzen. 2001), positive attitude towards certain behaviors determine the intention to perform these behaviours. Although intention does not always translate into action (Silver. 2009), positive attitudes can be viewed as a prerequisite for teacher educators' intention to conduct research. It was found that 51% of Myanmar university teachers had authored papers and 33% had given scientific presentations within one-year follow-up, however, only 30% of our university teachers had submitted a paper for publication. The results indicate that attitude is positive at a professional level, but also that strategies to encourage young teachers to perform research may be needed.

Keywords: Research productivity, Arts and Science university teachers, Myanmar

Introduction

Linking research competencies to higher education is necessary for the quality of future education. University teachers' individual research projects are one way to provide such training. Research competencies may be broadly divided into 3 groups: generic competencies (e.g. the ability to synthesize findings and draw conclusions) and competencies related to "using research" (e.g. carry out a literature search and critically appraise evidence) or "doing research" (e.g. formulate a research question, collect and analyze own research data). To develop these competencies, some universities offer university teachers scholarly projects, which may be as short as a few weeks, either within the main curriculum or through extra-curricular activities. They may comprise a short scientific project, or in-depth study in areas. However, an increasing number of arts and science universities worldwide have individual projects performed in authentic research environments as a component of their curriculum.

In addition to differences in training research competencies, the programs also differ with regard to the assessment of research skills. Shorter scholarly projects may be assessed as oral or poster presentations while university teachers completing

a substantial research project are often also accessed via a research report (sometimes called student thesis). Consequently, academic outcomes, e.g., presentations and publications, have been measures of success of research project courses in higher education. However, university teachers' projects are usually of limited scope and are in addition reported as individual work whereas science research papers need to fulfill a number of criteria regarding scope and significance, and are the result of teamwork. Thus, university teachers' reports as such rarely impact the scientific community. Nevertheless, their projects and data can be expected to be of interest for the overall science and the supervisors.

University teachers' career choices are affected by, among other things, the differences in university requirements, curriculum length and structure and higher education structure. Some studies on the career choices of university teachers required to perform a research project suggest that participation in research activities and opportunity to publish research during training increases the likelihood of pursuing academic research. However, none of the studies have had a prospective design, nor have they examined effects in specific research areas, or outcomes in terms of enrolment to PhD studies, and only a few have investigated gender issues. The problem is why many researchers lost interest in research activity.

Therefore, this study aimed (1) to investigate the scientific outcomes of a research project, as reflected by publications and scientific presentations, and (2) to explore university teachers' career plans after the project work. Importantly, unlike several studies on optional research courses, we have studied a population that was unselected in terms of previous research interest and experience.

Research Methodology

The context of the study

The context of this study consists of two semesters, each comprising 16 weeks, and altogether corresponding to one academic year at Myanmar universities. The overall aim is to provide university teachers with deeper understanding of the scientific basis and ability to interpret and evaluate literature. The participants were lecturers during the time period under study. Supervisor is active a researcher with a PhD degree. University teachers may sometimes do extended research for a higher research degree (MRes / PhD). The scholarly results of such activities are not included in the current analysis.

Study design and participants

In this prospective cross-sectional

questionnaire study (two parts: objectives plus open-ended questions), 417 Arts and Science university teachers in Myanmar (mean age 27 years; 74% females) participated in this research received oral and written information about the aim of the study stating that participation was voluntary. The researchers evaluate people from different specializations, geographical location and social backgrounds.

The questionnaire was distributed by email. The e-mail contained again written information of the aim of the study as well as a statement that by submitting the filled-in questionnaire the university teachers gave their consent to participation in the study. The questionnaire focused on their scholarly activities. Most of the questions were close-ended with a set of dichotomous answers, like; like/dislike.

An open-ended question concerning the reactions to the questionnaire was presented at the end of the questionnaire. Completion of the questionnaire took approximately 20 minutes.

Results

In total, 417 university teachers (mean age 27 years; 74% females) returned the questionnaire corresponding to a response rate of 98% can be seen in.

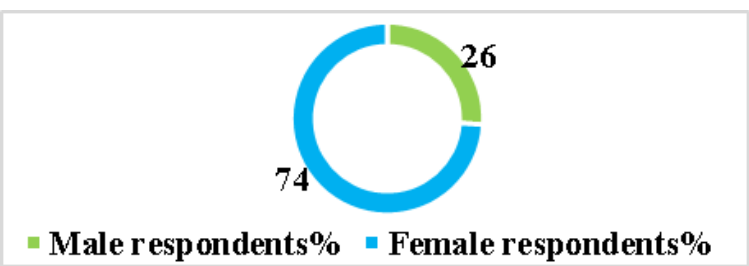

Figure 1 Number of Male and female respondents

The distribution of responses varied marginally. The majority of the university teachers carried out a departmental research project (n = 113; 40.63%), (n = 41; 23.96%) doing research to submit at national and international conferences while the rest lost their fundamental interest in doing research (n = 263; 35.42%) as can be seen in Figure 2.

Figure 2 Distribution of responses on research productivity

(i) Research Productivity of Arts and Science University Teachers Authorship and Co-authorship on a publication

Totally 29 (19%) university teachers had authored a paper at international research journals, 64 (21%) had published co-authoring in an international paper, 1 (2%) had published co-authoring in both national and international papers. In addition, 32 (23%) university teachers had published a paper in a national journal, 15 (9%) university teachers had done both nationally and internationally and 3 (6%) had published co-authoring in a national journal. The findings also showed that 51% of the Myanmar university teachers had authored scientific papers. Thus, totally 144 (35%) scientific papers had been submitted within one year. A summary of submitted papers, publications, scientific presentations and conference attendance within one-year follow-up is shown in the following Table 1.

Table 1 A Summary of Submitted Papers, Publications, Scientific Presentations and Conference Attendance within One Year Follow-up (n=417)

Sr.No	Research Productivity of Arts &Science University Teachers	Internationally (%)	Nationally (%)	Both Internationally & Nationally (%)	% of zero research output
1.	Authorship	19	23	9	49
2.	Co-authorship	21	6	2	71
3.	Scientific Presentations	1	14	18	67
4.	Conference Attendance	4	18	14	64

Scientific presentations

As shown in Table 1, 33% of the Myanmar university teachers had given scientific presentation within one-year follow-up. In total 25 (18%) university teachers had given scientific presentations (oral or posters) nationally or internationally during the follow-up. Among them, 6 gave at least one presentation at a national level research conferences, 7 (1%) university teachers gave at least one presentation at an international level research conferences and 10 university teachers had given both. Furthermore, 50 (14%) university teachers had given a scientific presentation at their university workplace where they carried out their research project for regular research paper reading sessions. The female university teachers had given significantly more workplace presentations than had the male university teachers. Likewise, university teachers who had done research projects (the majority were females) had given more workplace presentations than other university teachers.

Attending scientific conferences

Although attending a scientific conference pertaining to the research project but without presenting data is not strictly a scientific outcome of the project, it may nevertheless reflect a building interest in a research career. In total, 12 university teachers (4%) had attended an international conference, 41 university teachers (18%) national scientific level research conferences and 7 (14%) university teachers had attended both national and international conferences. There was a significant difference in conference attendance between males and females, and the frequency was not the same for younger (<27 years) and older university teachers (27–40 years).

(ii) Changes of the interest in research

The task of writing research is not a simple one as it involves hard work and effort. It also needs much interest. When it comes to university teachers, there are many obstacles they encounter during their research. At universities, a research record and active involvement in research are usually major requirements in the recruitments process. The following Table 2 presents university teachers' responses towards changes of the interest in research.

Table 2 Changes in Research Interest Regarding Research Projects (n=417)

Changes of the Interest in Research	Responses towards Changes (%)
Increased Interest	54
Decreased Interest	18
Unchanged Interest	29

Our data showed that 214 (54%) of the university teachers reported that their interest in research increased during the project work while 122 (18%) reported decreased interest, and 81 (29%) reported unchanged interest among the university teachers.

Intentions to pursue research

Registering as a PhD program was interpreted as a manifest intention to pursue research. During 2018-2019 academic year, some university teachers had registered as PhD students and an additional over one hundred university teachers were planning to register. Rates of PhD student registration, or plans to register, were similar between the research project areas, the site of the study (at or outside home university), and the genders. However, those who during follow-up registered as PhD university teachers or were planning to register were younger than those who were not. One third of the university teachers who had not become PhD university teachers reported it was unlikely or very unlikely that they would do research in the future. Relatively, those who answered that they are "very unlikely" to do research in the future were significantly younger than those who answered that it was "rather unlikely". The intention to pursue research did not differ significantly between research areas or genders. Finally, the university teachers were also asked what they would most like to do 5 years into the future. One hundred and thirty-two reported that they would in the coming 5 years prefer to participate in research conferences. In total, 202 university teachers (50%) wanted to work as a part-time researcher, 71 university teachers (30%) were interested in a greater proportion of research time and 144 university teachers (20%) reported they were interested in only teaching. Table 3 depicts intentions of university teachers to pursue research.

Table 3 Intentions of University Teachers to Pursue Research (n=417)

Sr. No	University Teachers' intentions	Responses towards interest (%)
1.	Interested to work as a part-time researcher	50
2.	Interested in a greater proportion of research time	30
3.	Interested in only teaching	20

Accordingly, the university teachers who usually carry out research projects were more interested in doing part-time research than were other university teachers. The university teachers who had not carried out a research project were least interested in doing research in the future. Once again, there were no statistically significant differences between male and female university teachers.

Discussion

Future teachers need to train research skills as well as scientific attitude in order to not only participate in doing research, but also to become competent teachers (Funston, ed al. 2016). Therefore, higher education needs to involve research-related activities. Based on a questionnaire filled in by university teachers, we have investigated university teachers' scientific interest and productivity as reflected by publications and scientific presentations as well as the university teachers' future career plans. The results from the current study indicated that 51% of the Myanmar university teachers had conducted scientific researches and 33% had given scientific presentations within one-year follow-up. Compared to their research productivity, 49% of university teachers had not done any research and 67% had not given any scientific presentation. Figure 3 indicates a summary of submitted papers, publications, scientific presentations and conference attendance within one-year follow-up.

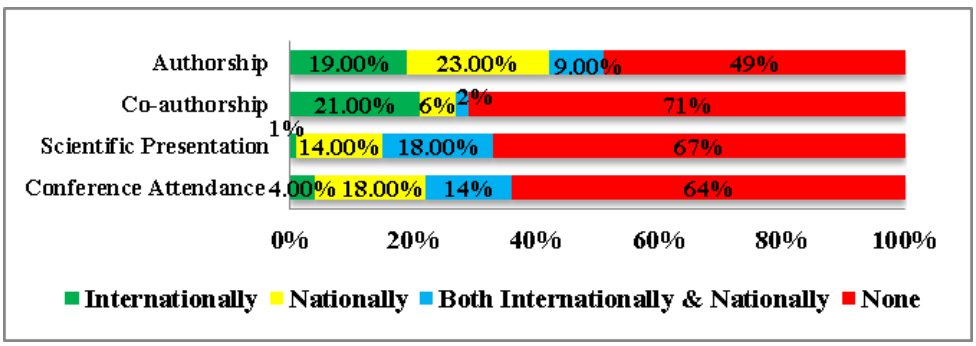

Figure 3 A Summary of Submitted Papers, Publications, Scientific Presentations and Conference Attendance within One Year Follow-up

The results based on 417 responses (98%) show that in total 144 scientific papers had been submitted within one year during the 2019, and 19% of the university teachers were authors on a scientific paper published in an international journal. Furthermore, 18% of the university teachers had given a presentation at international and / or national scientific level research conferences. They reported that interest in an academic career increased during the research period. Peer-reviewed journal publications are generally considered to be an indicator of research productivity, and are thus one major metric of the "return on investment" in supporting student research. Earlier reports from three US arts and science universities show that 40–75% of the university teachers had published at least one paper per year, and about half had given a presentation at an international research conference. However, these figures do not represent a percentage of the entire body, and include university teachers in intercalated programs, university teachers who had taken an elective research course or had research experiences of varied length. The questionnaire showed that 42% of US university teachers who had participated in a mandatory or elective research project were co-authors of a research paper. Furthermore, according to a recent meta-analysis an average of 30% (95% CI 0.19–0.44) of research performed by university teachers resulted in a peer-reviewed journal publication. By comparison, our results show that only half as many university teachers had published a paper; however, 30% of our university teachers had submitted a paper for publication. We believe that this apparently low result is at least in part due to the fact that university teachers require to do research to have a standard manuscript. Another circumstance, which in addition increases the power of our study to assess the research interest, is mandatory for the university teachers who

are particularly interested in a research career. Furthermore, as our study group represents selected university teachers and their experiences, we believe that our results cannot show a generalizable impact of an authentic research environment and methodology. At the time of responding to the questionnaire, we did not find any substantial differences between male and female university teachers' interest and involvement in research. Again, as our study group is unselected in terms of such interest and of gender, our results suggest more clearly that male and female university teachers had comparable research interest/activity. Changes in research interest regarding research projects are shown in the following Figure 4.

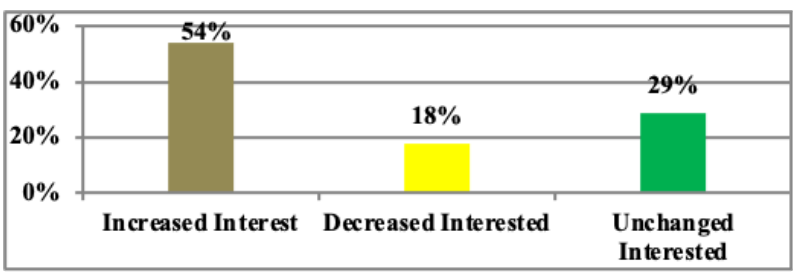

Figure 4 Changes in Research Interest Regarding Research Projects

The finding that the younger university teachers were more interested in a Ph.D. degree, but were also the least interested in doing research in the future was unanticipated. Previous studies have mentioned financial worries, lack of supervision and encouragement and inflexible curricula as possible obstacles to a research career.

It is possible that research projects require a higher degree of independence than other projects since supervisors seldom work fulltime with research and are not available on a daily basis wherefore the common level research conferences and other activities may have to be scheduled rather than integrated in the daily work. We speculate that young university teachers may be troubled by the level of independence required, and / or that older university teachers are more knowledgeable about career choices and the impact that research may have on their career development. The results thus indicate a need for a strategy to attract more young teachers to clinical research. One aspect to consider is how the quality of project supervision affects student attitudes to research; we are currently examining this. One strength of the current study is the prospective design while almost all published studies about university teachers' interest in research are retrospective.

In addition, the response rate was good and the gender distribution among respondents corresponded to that of our universities in general. Figure 5 presents intentions of university teachers to pursue research.

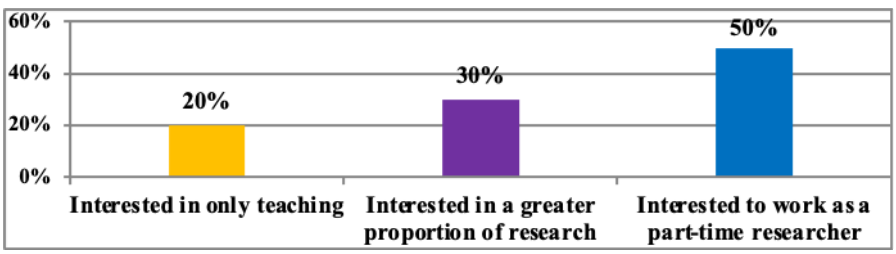

Figure 5 Intentions of University Teachers to Pursue Research

An additional strength is that the study group is unselected in terms of interest in research. One weakness that we used self-reported data from the university teachers and we cannot claim that the interest shown, or the lack of it, has a direct causal relationship to the course, since university teachers who decide to perform research may already have a keen interest in research. Altogether, this study provides evidence that university teachers have a considerable and evolvable research interest that is promising for the future development of research.

Conclusions

The importance of research in higher education institutions is attributed to two main factors. First, the notion that research improves teaching (Middaugh. 2000) and contributes to continuous professional development (Livingston, McCall & Morgado. 2009). Thus, advancing research capacity as a way of strengthening teacher education communities is viewed as a key factor in enhancing the quality of student and teacher learning (Arreman, 2008; Lunenberg, Ponte, & van De Ven, 2007). Second, research productivity has become the iconic indicator for institutional for maintaining operation and facilitating development and growth. The results from the current study revealed that 51% of the Myanmar university teachers had authored papers and 33% had done scientific presentations. The findings indicate that an important outcome is that the scientific collaboration of supervisors and university teachers often continues on a professional level. Future studies should address the role of the supervisor but also that strategies to encourage young teachers

to perform research may be needed. It is suggested that young teachers will improve their research performance skills by doing the following suggestions;

Suggestions

Time for research is a major issue for all faculty members in higher education, as they must simultaneously handle teaching and responsibilities (Toews & Yazedjian. 2007). Researchers have found that devoting sufficient time for research is associated with greater research productivity (Bland et al., 2006), while insufficient time during the academic year is the greatest impediment to research productivity, followed by a heavy teaching load (Santo. et al. 2009). It is hoped that scientific collaboration of professional supervisors can increase the research productivity and research performance skills of young teachers.

Finding time to publish: 4 tips for success

One of these scholarly activities in doing research is writing and publishing. Teachers may think that with all their current responsibilities, how can they find the time to publish? How would they even begin this process? These two questions have been their personal roadblocks to writing. It would be beneficial for supervisors working at university to receive training how to equip future researchers with the necessary research skills.

1. Devoting 10-20 hours a week to the writing process.

Make a schedule and do the best to stick to it. If they need some more incentive, build in a small reward system to stay motivated. If they choose Sunday morning to do writing or background research, keep that time blocked out in the schedule over the weeks they anticipate working on the project.

2. Determining the best type of paper within time constraints.

This is where some balancing takes place. They should honestly assess how much time they can dedicate to doing research and writing a quality paper. University teaching should remain the top priority, but as far as other professional experiences are concerned, publishing should rank highly.

3. Asking a mentor or faculty member to review your work

Teachers should find someone who thoroughly understands the topic they are writing on and would be willing to critique the content of research work. Hopefully they have a good professional relationship with this person prior to asking them for their time. This step makes them vulnerable to criticisms to cultivate humility. They also should take the good, the bad, and the ugly

and use it to transform their paper. If they need someone else to read it over, they have to find college friend to help them eliminate awkward wording and improve flow in the writing. Amid the stress that accompanies the work place, taking on additional criticisms may seem daunting. They should try the best to adapt to the suggestions of mentors and advisors. It will take patience, and most likely multiple revisions, before the paper is ready for submission. The editing phase of writing tends to absorb more time than people expect, so plan for this at the outset of the project. They should keep working towards the end point, but step back if they begin to feel frustrated or lose sight of the goal. As a researcher, writing will not be the only commitment, so maintaining a positive outlook to bring to the other facets of the life is important.

4. Selecting an appropriate journal and submitting

Teachers should look into which journals are more likely to accept specific paper. They have to read the instructions to authors on the publisher's webpage. Then, submit to a highly ranked journal, then if / when they are rejected, submit to a slightly lesser ranked journal. Some editors may provide feedback on how they can improve their submission. If this is the case, consider these recommendations before submitting paper to another journal. The greatest challenge of publishing is making writing a priority. However, by sustaining the commitment to publish, this endeavor will benefit them as a researcher as well as a future academician.

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