

PROMOTING CAPACITY IN EDUCATION RESEARCH AT LEAD TEACHER TRAINING UNIVERSITIES

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ABSTRACT

As part of educational reform now in progress in Vietnam, there is a desire to promote education research, particularly at teacher training institutions (TTUs). This paper examines the existing implementation of education research at eight prominent TTUs nationwide. Results from surveys indicate that academic staff at TTUs are currently facing various challenges to promote their research career. Lack of adequate time and financial support, the university hierarchy and complicated procedures, English language limitation, inexperience of research methodology and research ethics are the main constraints of research implementation. Thus, TTUs should concentrate on human resource development and institutional capacity development to promote education research.

1. INTRODUCTION

Scientific research plays a vital role in boosting economic development in any country. In Australia, for instance, advances in science accounted for 20 to 30% growth in economic activities, employment, and exports (Nguyen et al., 2017). Recognizing the importance of strengthening scientific research capacity in which the core team is composed of lecturers and researchers, the Government of Vietnam annually invests about 2% of the national GDP for scientific research on the basis of publishing articles internationally (Ministry of Science and Technology (MOST), 2015). Additionally, the qualifications relating to scientific titles and degrees have been reformed to ensure the quality of researchers since 2017. The Ministry of Education and Training (MOET) has launched a new regulation for the appointment of Professors and Associate Professors and doctoral degree, in which international publication is one of the mandatory requirements (in Circular 08) (Bui et al., 2019).

Despite the urgent need to boost international publications in education research in Vietnam, there remain few publications related to this topic. Thus, this paper was designed firstly to provide an overview of education research published in eight lead teacher training institutions (LTTUs)¹ across Vietnam. Secondly, it will examine the example of the University of Danang - University of Science and Education (DUEd) in building publishing capacity for young faculty members in education before proposing and discussing the solutions towards productive education research in Vietnam.

2. LITERATURE REVIEW

2.1. Overview of international publications in Vietnam

International publication is generally considered one of the top criteria for evaluating education quality rankings of universities in the world and particularly in Vietnam (Tran & Nguyen, 2015). In the past 10 years, the number of international publications under Scopus in Vietnam has increased nearly 5 times, from 1,764 articles published in 2009, to 8,234 articles in 2018 (Nguyen, 2019; Nguyen & Tran, 2019). Despite the steady growth in international publications, there remains a huge gap between publications in natural and technological science, and publications in social sciences, humanities and education.

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There are three principal reasons for increasing the range and number of publications in international journals in the educational field in Vietnam. First, Vietnam could take a stronger and more visible role in the international global debate on education, both through publications and participation in relevant international meetings. Second, Vietnam is addressing a range of important issues in education such as educational reform, curriculum development, teacher professional development and education for ethnic minorities, among others, and the Vietnamese experience is relevant to global research in these areas. Thirdly, as this paper will argue, the need to reach the publication standards of international peer-reviewed journals will both demand and foster greater capacity in the national research community.

In the national context, Vietnam Academy of Social Sciences ranks first in international publication in social science, but in 2018 there were only 394 publications, including 18 international publishing books, 61 chapters/, international books, and presentations at international conferences (Nguyen, 2019). In the period from 1996 to 2010, Vietnam's education science only published 39 scientific research works in international journals (Tran, 2014). Yet in a latest review of C. H. Nguyen, Nguyen, Tran, & Nguyen (2020), there has been a remarkable increase in the number of publications related to education in Vietnam (indexed in Scopus from 2009 to 2018), nearly four times compared with 2009.

Recently, there have been several publications trying to explain the constraints in international publications of Vietnam social science and humanities in general and in education research in particular. The two prominent subjective constraints are: (i) lack of confidence with writing in English (Ho, 2015; Tran, 2014; Vuong, 2018, 2019), and (ii) limitation of researchers' awareness in publishing internationally (Tran, 2014; Vuong, 2018, 2019). This includes the research design and methodologies (Tran, 2014) and the cognition of scientific ethical issues (Vuong, 2019). There are also three major objective constraints including: (i) lack of physical infrastructure, financial and human resources; (ii) specific research topics are particularly suitable for Vietnam, not for international communities; and (iii) lack of prestige domestic journals publishing in English (current, only one Vietnamese mathematic journal named *Acta Mathematica Vietnamica* managed by the Vietnam Institute of Mathematics is included in the Scopus list).

By reviewing 633 master theses related to education science, Tran (2014) asserted that topics of those theses can be categorized in 5 groups: (i) Assessment of existing problems related to education (173 - 27,33%); (ii) Solutions to improve teaching (96 - 15,16%); (iii) Combination of assessment and proposing solutions (62 - 9,79%); (iv) Application of education related theories (225 - 35,54%); and (v) Investigation or Exploration of education issues (77 - 12,16%). Most of such theses were poorly developed and did not contribute significantly to academic debate, even in advancing Vietnamese education.

2.2. Efforts to increase international publications

In order to promote international publications nationwide, two solutions have been successfully applied. The first is to increase collaboration with foreign colleagues (Bui et al., 2019; Pham, 2010; Nguyen, 2019; Nguyen et al., 2017; Vuong, 2019) which promotes research capacity for the Vietnamese researchers. The second solution is to change the structure both top down, that is, more favorable government policies (Circular 08 in training doctoral degree) and to diversify research grants (NAFOSTED since 2008, provincial funds, and international grants, etc.), and bottom up, that is, more investment in university personnel and research capacity building (Robinson, 2019a; Vuong, 2019).

“Capacity building strategies need to address how mid-career researchers can develop the skills necessary to manage and direct research projects, as well as ensuring professional development opportunities for beginning researchers. Capacity building approaches also need to be responsive to the needs of the overall field as well as the professional development needs of individual researchers” (Fowler et al., 2009, p.4).

This kind of planning for ongoing professional development is not merely a matter of status or remuneration, but also of professional opportunities (e.g. for international collaboration) and recognition (of publications or contributions to the field).

3. METHODS AND RESULTS

3.1. Research methods

3.1.1. Desk-review

This paper focuses on eight lead TTUs² (LTTUs) in Vietnam, located in the northern, central and southern parts of the country - Thai Nguyen University of Education, Hanoi National University of Education, Hanoi Pedagogical University 2, Vinh University, Hue University - College of Education, The University of Danang - University of Science and Education, Ho Chi Minh University of Pedagogy and the National Academy of Education Management. A desk review was conducted to understand the existing implementation and orientation at central and institutional levels. Various secondary data has been collected including policies, strategies, and project reports at the eight LTTUs.

3.1.2. The LTTU capacity development survey

The survey was conducted in 2018 among eight LTTUs to understand capacity development, particularly the policies and strategies of those institutions in implementing and promoting education science. Both multiple choice and open-ended questions were included in the interviews. The survey form was sent to each university ETEP project management board.

3.1.3. The pilot training workshop focusing on international publication at University of Danang - University of Science and Education

A two-day training workshop was organized by the Department of Science and International Cooperation at the university in November, 2019. The course was designed to connect the education researchers of the university from various disciplines to learn and exchange experiences in research design, particularly with the aim of publishing an academic paper. A pre-course questionnaire was sent to 50 faculty members staff (aged <40) from 11 faculties and having at least 5 years' working experience. The multiple-choice questions were designed to understand the challenges that university researchers face in publishing internationally and their demands to improve research capacity. The response rate was 35/50.

Based on the pre-course survey results, an intensive two day-training workshop was developed with three modules: (i) English in academic writing (led by a senior researcher from the UK who had collaborated with the university in several research projects); (ii) Research design (led by a researcher who recently has two ISI publications in education research); (iii) Experiences in preparing and submitting a manuscript at international journal (led by a researcher who has an average of four ISI publications yearly). Diverse participatory training techniques (brainstorming, group discussion, pair sharing, and storytelling) were applied during the workshop to engage the participating lecturers in the learning process.

At the end of the course, the lecturers were requested to answer the following four questions: (i) the knowledge they learned by keywords, (ii) their evaluation of the course; (iii) their expectations for further steps from the university; and (iv) their self-motivation to produce an international publication.

3.1.4. Data analysis

For quantitative data (questionnaire surveys), the authors applied statistical analysis (using Excel) to provide the status of education research in eight LTTUs and the emerging issues in promoting international publications at LTTUs. The qualitative data from post-course questions provided a wealth of detailed information via individuals' voices after participating in the training workshop. Thematic analysis was applied to identify the emerging problems related to international publishing. Such data analysis and the literature review allowed the authors to propose some recommendations in the discussion for education research capacity building at TTUs.

3.2. Research results

3.2.1. Education science research promotion

3.2.1.1. Projects to promote education research

Perceiving the decline in the country's education system, Vietnamese Communist Party passed Resolution 29-NQ/TW calling for reform in the education sector on November 4 2013. It devises a holistic approach to transform

²The 8 lead TTUs were determined under the Enhancing Teacher Education Program (ETEP) project, MOET

the whole education system. Since Resolution 29, there has been increasing investment to transform education with 20% of the national budget (Nguyen, 2018) going to education. Teacher training is crucial to ensure education quality. Therefore, with the support of World Bank and the country government, Vietnam has launched four national projects:

- Renovation of General Education Project (RGEP): with a budget of US\$ 77.00 million, the 5 year-project (2015-2020) aims to raise student learning outcomes by: (i) revising and implementing the curriculum following a competency-based approach; and (ii) improving the effectiveness of instruction by creating and disseminating textbooks aligned with the revised curriculum. In accordance with the curriculum revision, the project also includes research and capacity-building on curriculum development and assessment (Worldbank, n.d.).

- Enhancing Teacher Education Program (ETEP): with a budget of US\$ 95.00 million, the 5 year-project (2017-2022) aims to strengthen teacher education institutions to enhance teacher and principal effectiveness through improved continuous professional development (Worldbank, 2016).

- Support for Autonomous Higher Education Project (SAHEP): This five year-project (2017-2023) has been implemented within four famous Vietnamese higher education institutions (Vietnam National University of Agriculture, National Economics University, Hanoi University of Science and Technology, Industrial University of Ho Chi Minh). The project aims to improve research, teaching, and institutional capacity at selected autonomous universities and strengthen the national higher education management system (Worldbank, 2016).

- National Science and Technology Program of Education: approved and funded by Vietnamese government, the 5 year-program (2016-2020) was proposed to renovate Vietnam's education science towards modernization, based on evidence-based research as a foundation, suitable for Vietnamese characteristics and matched the level of education science worldwide (to meet the 9 requirements in Resolution 29) (MoET, 2019).

Among those projects, ETEP was designed to focus more on teacher education. The design of ETEP included a criterion of effective research in the Teacher Education Institution Development Index (TEIDI) as an essential defining characteristic of teacher training universities (TTU). The two relevant criteria (6 and 7) are expressed in the following terms (extracts from the *Guide to TEIDI Assessment: Institutional level* (2017)):

- Research policy of TTU is fully developed and in line with the TTU's mission and strategic vision, providing the institution with finest developments in Teacher Education that are being integrated in the learning activities. (Criterion 6 p.20).

- TTU has carefully considered, identified and implemented the required measures that need to be in place for unhindered development of research activities, corresponding to the institutional mission and strategic vision, learning process needs and the expectations from the community (Criterion 7 p.23).

The ETEP project called specifically for increased capacity of the LTTUs in developing new methods and training for the continuous professional development of teachers nationally, based on international experience and research (cf. Robinson 2019b).

Along with the national long-term projects, there have been other projects to improve the education quality funded by international organizations. Most of these projects focused on: (i) Promoting the application of information and communication technology (ICT) in teaching; and (ii) Introducing education paradigm shifts across the world, including integration of critical global issues (sustainability, climate change, disaster prevention, etc.) into the curriculum and the practices of emerging education trends (STEM, STEAM, Blended-learning, etc.).

Those above-mentioned policies and projects imply a strong commitment from the country government to mitigate the gaps in education between Vietnam and other countries. The multi-sector projects allow a comprehensive collaboration among organizations and researchers to embrace the latest technology and trends. Hence, there will be more opportunities to co-research and co-author for international publications.

3.2.1.2. Opportunities to publish education research

Publishing obviously is a significant step not only to increase the credibility of the research and the researchers, but also to put the knowledge in a permanent database (Brown, 2017). In terms of education research, there are 1402

journals related to education listed by the Scopus system (<https://www.scopus.com/sources.uri>). Such journals are well recognized and appreciated by the point system of the State Council of Professorship in Vietnam (from 1-3 points). The approach of using such awards is expected to increase the number of international publications in the educational field.

Despite the large number of international education journals, Vietnamese education researchers still publish mainly in domestic journals. Currently, there are 13 Vietnamese journals, prioritizing education studies where researchers can submit their manuscript related to education topics (listed in Table 1). Yet, there are approximately 35 academic journals (scientific magazines) of general science where education researchers can publish in both Vietnamese and English. However, there is a lack of research to assess the quality of those 35 journals compared to the standard of international publication in the field of education.

Table 1. List of the Vietnamese journals related to education

No.	Name of journal	ISSN index	Publishing organization	Achievement score ³
1	Journal of Education Science	0866-3662	The Vietnam Institute of Education Science	0-1
2	Journal of Education	0866-7476	Ministry of Education and Training	0-0.75
3	Journal of Education Management	1859-2910	The Academy of Education Management	0-0.5
4	Journal of Political and Military Theory	1859-056X	The Academy of Politics, Ministry of Defense	0-0.5
5	Journal of Art Education	1859-4964	National University of Art Education	0-0.5
6	Journal of Education Management Science	2354-0788	Institute of Education Management of Ho Chi Minh	0-0.5
7	Journal of Science and Education	1859-4603	The University of Danang - University of Science and Education	0-0.5
8	Journal of Education Equipment	1859-2920	Association of Education Equipment of Vietnam	0-0.5
9	Journal of Education and Sociology	1859-3917	Association of Vietnamese Colleges and Universities	0-0.5
10	Journal of Science and Education	1859-1612	Hue University of Education	0-0.5
11	Journal of Technological Education	1859-1272	Ho Chi Minh University of Technological Education	0-0.5
12	Journal of Vocational Education	2354-0583	Directorate of Vocational Education and Training	0-0.5
13	Journal of Learning and Teaching today	1859-2694	The Vietnam Society of Learning Promotion	0-0.25

[Source: The State Council for Professorship, 2019]

3.2.1.3. Education science research promotion at eight LTTUs

The LTTU capacity development survey in 2018 identified two areas related to research:

- Education Science research: strengthening competencies in applied science and education science research;

³Achievement point regulated by The State Council of Professorship

• On-demand research in education science: findings and resolution to outstanding issues in education and training in Vietnam.

LTTUs assessed these needs as being ‘very necessary/ particularly necessary’ in 76% and 69.6% of the responses to the survey respectively - a clear indication that building capacity in educational research is in high demand. It was worth noting that among eight LTTUs, only two LTTUs⁴ had a section on ‘Research, development and innovation’ in their capacity development plans. The section focused on the capacity for the collection of data on existing research by the university, and on the procedures and mechanisms that the universities should put in place to promote greater research activity.

The survey indicated that all of the eight LTTUs had organized a journal for education publishing. Notably however, none of those journals had established concrete conditions or qualifications to narrow gaps in standards between Vietnamese journals and international journals. Yet, eight LTTUs already had in place these fundamental conditions to advance the quality of education research:

- The cognition and commitment of the leaders to empower university staff in research capacity
- Graduate programs: master and doctoral level
- International collaboration
- Connection with schools (in general education system)
- Academic staff: professors and lecturers
- Research budget

3.2.2. Findings from the training workshop

3.2.2.1. Constraints and demand of the lecturers in education research advancement

The online survey identified seven constraints of the lecturers in publishing an international paper. The detailed results are shown in Table 2 and Figure 1.

Table 2. Constraints of academic publishing

Limitation of writing in English	27
Research methodology	23
Research design	23
Citation skills	17
Structure of a paper	17
Lack of time	23
Lack of financial resources	23

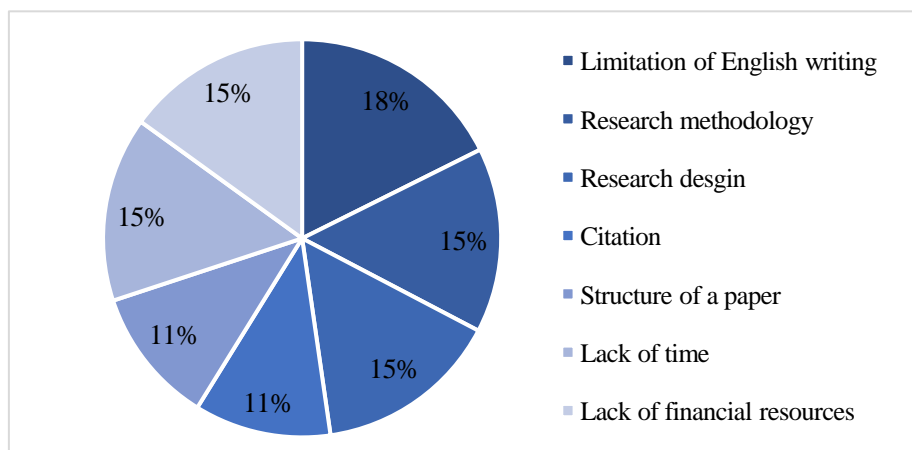


Figure 1. Constraints of academic publishing

⁴Ho Chi Minh University of Education and Thai Nguyen University of Education - their plans are available in English

There were in total 153 responses arising from the questionnaire survey that meant each interviewed lecturer identified on average more than 4 constraints. In terms of international publication, the main constraint was English writing competence, accounting for 18%. This was followed by four other constraints, including lack of time and financial resources, and lack of experience in research design and methodology at 15%. Additionally, 22% of interviewed lecturers were not confident in academic writing (either how to structure a paper or how to cite). Based on the above constraints, the lecturers suggested that the training workshop should focus on four topics: academic writing in English, quantitative methods, qualitative methods, and how to submit a manuscript to a journal (shown in Figure 2).

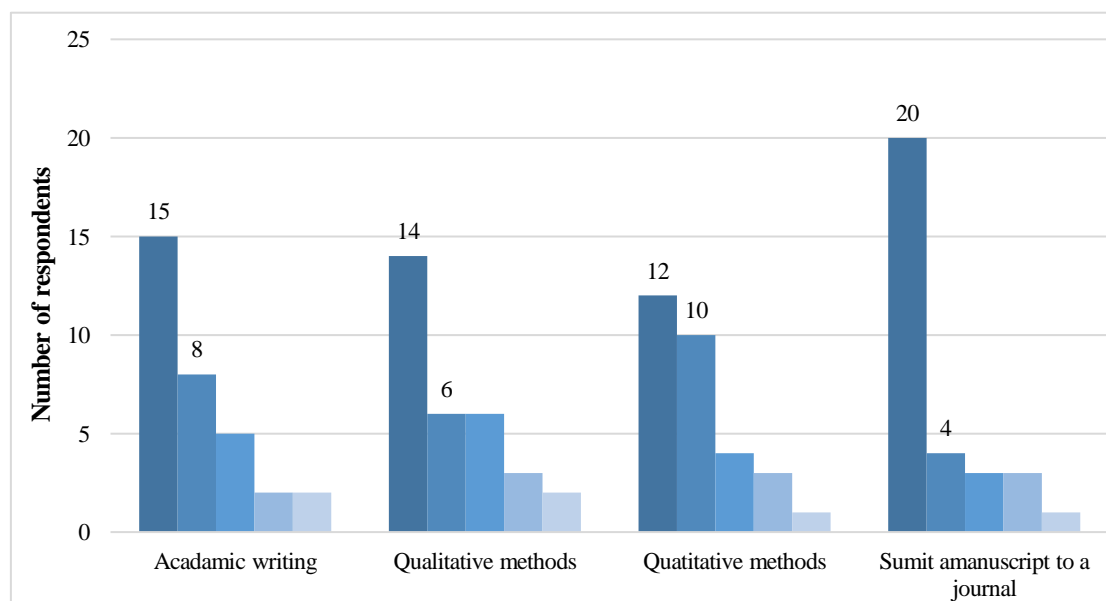


Figure 2. Priority topics for training workshop

Each topic was rated at five levels from low to high demand. The results demonstrated that the lecturers greatly desired to know the process on how to submit a manuscript to a journal. There was not much difference among academic writing and methodology overall.

3.2.2.2. Implications of the training workshop

An observation from the training workshop indicated a high “willingness to learn and share” from the participating lecturers. Thus, 100% of participants revealed their satisfaction with the course. Despite the knowledge gap among the participants, knowledge exchange and discussion were successful during the course. At the end of the course, the lecturers’ responses demonstrated that they had learned useful knowledge (Table 3).

Table 3. Knowledge gained from the training workshop

Knowledge gained	Number of respondents
- Research development and deployment process	15
- Understanding qualitative and quantitative research methods	12
- How to write scientific papers	10
- How to search, download and cite documents	9
- How to write the title, summarize, and propose a research problem	8
- Understand the basic layout of scientific papers	5
- The role of the research team in advancement of research	4
- Scientific ethics	5
- Data collection methods	2

- Notes to avoid rejection when submitting articles	1
- Know how to orient a topic	1
- How to discover research issues	2
- Building confidence and desire to publish research	2

Regarding participants' expectations, there were 40 ideas generated in total. Among these responses, there was one prominent expectation - organizing follow-up training workshops regularly. Three other notable responses were: creating an online folder to share and update training materials; distinguishing social science and education science; and establishing/participating in a research group (detailed responses in Table 4).

Table 4. The lecturers' expectations in promoting education research

Expectations	Number of respondents
- Organizing follow-up training workshops regularly	17
- More instructions on how to write academically	3
- Receive more examples and instructions to distinguish social science and education science	4
- An online folder to share and update training materials	5
- Arrange more reasonable time for the follow-up training/seminars	3
- More information on data analysis	2
- How to identify prestigious and unreliable journals	1
- Clarify methodology	1
- How to join a research group or establish a research group	3
- Provide examples of a manuscript after peer-review and revisions	1

In regard to self-motivation, there were three noticeable ideas shared by the lecturers: register in an English course to improve writing competency; try to apply for scholarships to pursue a doctoral course abroad; and participate in a research group. Most of the young lecturers revealed that studying abroad would facilitate their participation not only in conducting education research but also in a university education research group that would sustain their professional promotion.

4. DISCUSSION AND CONCLUSION

4.1. Challenges of existing education research implementation

Despite government and institutional efforts to support education researchers, the number of international publications in this field remains low. The literature review and results from this study have identified the key challenges from the perspective of Vietnamese education researchers. In this section, both objective and subjective challenges will be analyzed.

The MOET and LTTUs have established strategies, policies and plans to promote education research, but there remains a lack of concrete and practical solutions to solve these pressing issues (Nguyen, 2013), making it difficult to achieve a breakthrough in transforming education research. The LTTUs' policies, for instance, try to award academic staff who have high-quality international publications, but do not create a favorable working environment for fellow lecturers, including working space, library with abundant sources of information and access to high ranking journals, and adequate time. Most of the respondents from the survey revealed that they were frequently overwhelmed by teaching or administrative activities, and therefore could not devote the necessary working time for research.

In today's academic environment, achieving a score in the Scopus or ISI listings is regarded as a mark of recognition, and this only comes through peer-reviewed publication. Several symposiums and workshops were organized to share experiences in publishing education research papers (Journal of Education, 2018). The question has been posed for Vietnamese education-related journals - "How to include a Vietnamese education journal in the Scopus listings?" (MoET, 2020). Contributing research is a prerequisite to get manuscript acceptance. Some

education research topics in Vietnam are not new or, more specifically, are not presented in relation to the most recent education thinking. In fact, the Vietnam experience in a range of areas is both relevant and instructive for wider educational debates. However, to make a maximum contribution, analysis of education in Vietnam needs to be set in the context of the conceptual frameworks of current international debate. Further, educational research should connect with broader social issues, in collaboration with a wide range of stakeholders, in the educational establishment (MoET, DOETs, BOETs, schools) as well as other ministries - health, culture, labour, social affairs, etc. if the topic of research is to become inter-disciplinary.

Besides, the existing university hierarchy - university president, faculty dean, complicated procedures constrain the researchers from applying for state-based scientific grants. Such procedures have been simplified but still require lots of paperwork. The university hierarchy system should be supported by an inter-departmental research committee that promotes research right across the university and seeks opportunities for broader partnerships and funding from external sources. The research committee may also support creating a multidisciplinary education research group which is prerequisite to ensure education research quality (Bui et al., 2019; Nguyen et al., 2020). Research groups have been established at the LTTUs, but most of the international publications of these LTTUs are from the fundamental science research groups.

Regarding subjective challenges, limited capacity in English is the most difficult barrier for many researchers seeking to publish internationally (Pham, 2010; Nguyen et al., 2017; Vuong, 2018). For better or for worse, English is currently the language of internationally recognised research, although there are research networks using other languages - these tend to be national or regional, rather than global. The question arises then as to how to build the capacity of researchers in Vietnam so that they can document their efforts in English, write an internationally acceptable paper, present it at a conference and/or have it published in an international journal. Currently, most domestic education journals only provide one or two English issues each year with a very limited number of accepted papers; thus it is difficult for researchers to improve their academic writing.

In relation to the challenge in research design, Vietnamese researchers also face scientific ethics issues. Vuong (2018) stated that “the culture of social sciences and humanities in Vietnam tolerates violations of research ethics and fails to punish perpetrators” (p.57). Despite international guidelines that can be translated and disseminated to Vietnamese institutions and the official assistance of the UK, EU, US, Japan, Australia, and China to enhance awareness of the Vietnamese researchers, several researchers have been accused of violating research ethics (Vuong, 2018). Plagiarism, for instance, remains prevalent in academic reports, particularly self-plagiarism. The survey confirmed this problem since many lecturers did not know how to cite references directly or indirectly. Thus, the research committee at each university should include ethics in reviewing and approving the academic staff.

4.2. Recommendations and next steps

In the light of the problems and proposals contained in this paper, the following actions, based on Robinson (2019) proposals, are recommended for moving forward towards greater research activity in the LTTUs for high-quality output:

- Create an inventory of high-caliber researchers in education, as in the table below, and ask the LTTUs to design a capacity development process so that these researchers can share their expertise and contribute to the research capacity of the institution. This will include a university/departmental commitment to give the researchers time for this. As part of this, set up (where not already in existence) a structured system of mentoring in each LTTU so that new/junior staff can actively participate in research projects under the guidance of experienced researchers.

Institution	Name of researcher	Areas of research	Peer-reviewed publications (Scopus/ISI-indexed)	Number of current PhD students
(LTTU name)	XXX	Primary education, ICTs, pedagogy, curriculum, etc.	(List of publications)	NN

- Where not already in existence, set up an Education department committee or council which will facilitate and support research, and make connections with DOETs and schools to determine relevant research topics; it will also provide quality assurance.
- Make maximum strategic use of the existing international connections of individual LTTU researchers, for example those who completed doctoral studies abroad, to explore possible external partnerships in researching topics of common interest.
- Ensure electronic access to a wide range of international educational journals by means of the necessary subscriptions and through high-bandwidth connections at each university.
- Facilitate the participation of LTTU academic staff in relevant regional and international conferences, with the requirement to provide a substantial technical report to share with colleagues after the conference.
- Provide opportunities for LTTU researchers/ academic staff to upgrade English-language skills, in regard to academic writing, with time allocated as necessary (depending on existing language competence).

4.3. Conclusion

Publication of Vietnamese education research in peer-reviewed international journals is currently at a low level though the central government and LTTUs have applied various solutions to boost education research. The eight surveyed LTTUs have potential for education research development as they extend and strengthen the measures already partially in place:

- Recognition and commitment of the leaders to empower university staff in their research capacity;
- Graduate programs (master and doctoral level);
- International collaboration;
- Connection with DOET, BOET and schools (in general education system);
- Qualified academic staff: professors and lecturers;
- Research budgets.

The survey and pilot training workshop at the DUEd affirmed that academic staff are facing various objective and subjective challenges to promote their research capacity for more extensive international publication. Lack of adequate time and financial support, the university hierarchy and complicated procedures have constrained lecturers from conducting substantial research. Given more favourable working conditions, lecturers should be able to overcome the following obstacles: English language competency, lack of research methodology and awareness of research ethics to become better researchers to establish pathways for long-term professional success.

Besides the improvement of research funding and budgets and investment in infrastructure, the LTTUs should concentrate on human resource development and institutional capacity development to advance educational research. Each university should initially build a capacity development master plan within a holistic framework. This plan will allow the institution to develop a systematic approach to identify opportunities and to address challenges in a timely manner. Lastly, the proposed solutions and recommendations of this paper should be included in such future capacity development master plans.

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