



Research Article

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A Study of Teachers' Experiences and Perceptions of Research-Teaching Nexus in HEI (Higher Education Institutions)

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Abstract

Due to institutional accreditation requirements, the linkage between research and teaching has become increasingly important for higher education institutions in Oman over the past few years. This study describes teachers' experiences and perceptions of the research and teaching nexus in Oman's higher education college. Staff at International Maritime College Oman (IMCO) were taken as samples to confirm the study's themes. This paper aims to study the views of faculty about integrating research into teaching and the factors that strengthen or weaken the nexus. Primary data was collected via survey questionnaires and focus group discussions. The finding indicates that staff perception of integrating research into teaching is diverse. However, the majority confirmed the positive contributions of integrating research into teaching. The study also finds that student engagement in research will improve undergraduate education. Hence, integrating research as part of the staff load, allocating some budget and training staff on how to conduct research will help improve staff and students' research engagement, which improves teaching quality. This study contributes to the debate around the research-teaching nexus in Oman's colleges and universities of higher education.

Keywords: teaching; research-nexus; higher education

1. Introduction

The teaching-research nexus has been in academic debates, leading researchers to conduct studies. Mixed results characterise the outcome of the research. Some researchers found positive relations, implying that research substantiates teaching and vice versa. Others discovered no connections, claiming they require different and mutually exclusive skills. The remaining claim is that research has hostile relations with teaching as it takes teachers' time to prepare and fails to offer sufficient academic support to students (Mohammed 2004). Accordingly, the research focus on higher education institutions varies with the attitudes of higher education management. However, the

accreditation institution in Oman calls for higher education colleges in Oman to focus on research in line with the academic programmes as it contributes to education quality. The latter is due to the general recognition that research positively relates to education quality (Louw. & Moloji, 2013). Affirmative research relations to teaching are claimed because research fosters the transfer of contemporary knowledge and skills to students. As Louw and Moloji (2013) say, it helps to find out what skills are needed in the job market and industry so that curricula can be made to fill those gaps. IMCO is attempting to establish an intensive research culture that permeates all aspects of teaching and learning. Many academics believe that a good teacher in higher education must also be a good researcher. Meanwhile, it is not assumed that the research-teaching nexus benefits undergraduate students. As student satisfaction surveys measure, most studies indicate an inverse relationship between research output and teaching quality. This pattern may be explained by the fact that students place a premium on the availability of academic staff, which is likely to be scarce in research-intensive institutions. If this is the case, academics with extensive research programmes and vital research interests may have to work harder to compensate for time constraints. IMCO recognises that the research-teaching nexus possesses both explicit and subtle characteristics and can be nurtured in various ways. This study will investigate how the research-teaching nexus can be expanded and improved.

1.1 *The objective of the study*

1. To assess staff attitude toward the research-teaching nexus (integrating research into teaching).
2. To propose mechanisms to improve the research culture at IMCO and other HEIs to improve the quality of teaching.

2. **Literature Review**

Whether in the classroom or through experience, learning is vital for humanity in all its forms and methods because it is necessary for human survival. Numerous studies on learning are primarily based on the constructivist philosophy, demonstrating how humans learn and acquire knowledge about a specific subjective phenomenon. The concept is based on the constant modification and construction of structures in the mind that "carry" information. Constructivism entails people learning when they match, extend, and replace new understanding and knowledge with older information. In addition, the learner may have a different understanding of the topic but adding to or altering the prior knowledge is essential; otherwise, the learning process will be complicated (Wareham & Trowler, 2007; August and Mezirow, 1991). If not, the process of learning will be challenging.

According to Willcoxson et al. (2011), a practical explanation of correlation employs research to provide information as input for teaching and opportunities for students to conduct research. Construction and transformation of knowledge, following constructivism, can be accomplished through research or research-related activities. The learning theory describes how people learn, defining learning as a learner's behaviour modification process. There are three philosophical frameworks in theory. That is, behavioural, cognitive, and constructivist perspectives. The focus of the behavioural theory is on the visual aspects of learning. To explain brain-based learning, cognitive theories go beyond behaviour. Constructivism is an approach to learning in which the student actively constructs or builds new ideas or concepts. The learning theory holds that behaviour changes result from a change in behaviour acquired through learning. When designing curriculum and training modules, theoretical frameworks are considered. Education and curriculum development are guided by constructivism and cognitive frameworks for high-level knowledge. The framework of behaviourism guides the design and growth of technical skills.

Even if they are controlled by the various frameworks of the learning theory, employers and

other stakeholders are required to participate in creating and developing curricula and modules. According to Taiguara et al. (2020), the curriculum design and the modules' development should involve feedback from various stakeholders to generate credible and influential graduates. Without participation from stakeholders, there will be a mismatch between the skills required by employers and those possessed by graduates to fulfil employment criteria. Researching to uncover employers' needs and constructing courses and modules is essential.

The nexus between teaching and research is ubiquitous in academic discourse, and many studies have been undertaken on the topic, with varying degrees of success. Previous research carried out by Mohammed (2004) indicated conflicting findings on the connection between research and the quality of educational opportunities. There was no evidence of any adversarial relationships between research and the quality of schooling. On the other hand, there seems to be a consensus that there are beneficial relationships, and the discussion centres on the extent of their strength (Louw. & Moloi, 2013). Because it makes conveying specialised information and up-to-date knowledge easier to students, educational research significantly and positively contributes to education. In addition, it is hoped that research will reveal skill and competency shortages in the labour market. The latter will make it possible for educators to build and develop a curriculum that will generate graduates who can meet the needs of the organisation (Louw. & Moloi, 2013).

Investing in training, education, and research and development is essential to identify the industry's challenges, such as a qualified workforce, technology, infrastructure, and systems management. These challenges must be overcome to improve the sector and make it suitable for the shifting and dynamic world (PWC,2012). The industry's most significant problems are a scarcity of qualified human resources and a dearth of educational programmes tailored to meet the needs of specific businesses (Magdalena et al., 2019). Previous studies have produced conflicting findings concerning the educational qualifications required by the sector (Magdalena et al., 2019). Heyns and Rose (2012) concluded that a lack of available labour in specific industries' labour markets was hampering the expansion of those businesses and the economy.

On the other hand, some argue that there is a mismatch between graduates' education levels and the jobs' requirements (Saeed et al., 2018; Liu et al., 2015). It has been observed that graduate unemployment is rampant in a few different countries. On the other hand, several businesses mentioned lacking adequate human resources (Magdalena et al., 2019). If undergraduate students were included in the research process, the research might assist them in better understanding the real-world scenarios that occur in the sector.

The term "research-teaching nexus" refers to integrating research into course material to develop students' research skills. Although such integration has been studied in higher education, it does not appear to have been investigated in CALL teacher education. This study investigated the effects of incorporating research into a graduate CALL course on students' research awareness and skills. The research-teaching nexus was incorporated into a graduate CALL course taught in the language teacher education programme of an Arab university. The course was taught for fifteen weeks by female MA student instructors. Observation and an open-ended questionnaire were used to collect qualitative data. The students enjoyed the CALL course's research component. Observational data indicate that research integration increased students' CALL research awareness and taught them to create research titles, questions, and methodologies. The findings indicate that developing CALL research skills through process-oriented instruction is more complex than enhancing their research awareness through content-based instruction (Abdel Latif, 2021).

Enhancing instruction with academic research is essential for achieving satisfactory learning outcomes. Students who are or will soon be graduates and professional practitioners have an impact on practice through their participation in academic research in the classroom. Integrating research, teaching, and practice cannot be considered axiomatic despite its apparent acceptance as conventional wisdom. The connections between research and education and research and training are not always readily apparent or easily verifiable. There is an ongoing debate about how academic research contributes to student learning or subsequent application in practice (Tucker & Lawson,

2020).

Moreover, few studies in accounting education have examined the relationship between research, practice, and teaching from the perspective of both students and practising managers of postgraduate students. A study investigates the perspectives and observations of students enrolled in Australian and North American Executive MBA programmes to determine how academic research informs and enhances student learning and practice. Our findings, which are explicable through the lens of Rational Choice Theory, reveal similarities in the perceptions of Australian and North American Executive MBA cohorts and highlight the need to demonstrate the value of academic research more effectively as a supplement to student learning a means of informing practise. We conclude with suggestions for reducing costs and/or maximising the benefits of classroom research (Tucker & Lawson, 2020).

A similar study on how Finnish teacher educators integrate research and teaching bolsters their instructional approaches. The research questions address teacher educators' modes of integrating research and education, pedagogical practices, and relationship. The study used a survey methodology to elicit 101 responses via a questionnaire. Qualitative content analysis identified six distinct modes of research-teaching integration. The most frequently mentioned method was integrating research with teaching content, while integrating research with teaching methods and using inquiry-based methods in teaching were mentioned less frequently. Cluster analysis revealed three distinct approaches to education. The participants' approaches to research-teaching integration varied significantly. However, Chi-square tests showed that the differences were not statistically significant. The study contributes to international research on teacher educators and the diverse approaches to integrating research and teaching in teacher education. Further research could examine the individual and contextual factors influencing their integration of research and teaching (Cao et al., 2021).

Participation in research facilitates the development of a positive attitude toward academics and their relevance to future work practices. However, engaging undergraduates in learning activities that mirror the application of analysis in practice is not always straightforward. This longitudinal study aims to determine the effect of authentic research practises in the learning environment on the perceptions and beliefs about the relevance of research among medical undergraduates. Nine hundred forty-seven students filled out the Student Perceptions of Research Integration Questionnaire. Our findings indicate that research practises encourage students to develop an interest in research and a conviction in the importance of research to learning. To promote student learning about research, we argue that it is advantageous to incorporate elements of professional practices that pique students' interest in the subject and draw their attention to the process of generating research findings. Also discussed are implications for future research and teaching practice (Vereijken et al., 2020).

This study examines the relationship between teaching and research in higher education through a theoretically informed discussion of the 2015–21 design and delivery of an innovative popular music module on Adele's 25 albums for first-year undergraduates on a general-purpose music degree. Using auto-ethnographic methods, this paper examines the challenges of delivering a module on truly contemporary topics, arguing for the importance of keeping university curricula up-to-date and exploring ways to achieve this objective in the absence of academic literature to support the content of such teaching. As an alternative to more traditional research-led education, these lines of inquiry explore the potential for teaching-led research conducted solely in academic classrooms (Wiley, 2021).

Universities around the world are urged to implement "Research-Inspired Teaching." However, such instruction must initially be defined, developed, delivered, and assessed within a framework. Determine "Research-Inspired Teaching" and collaborate on its development, delivery, and evaluation. Design: A collaborative strategy based on the interpretive framework of communal constructivism was utilised. The setting is England. Participants: On participants who had allegedly engaged in "Research-Inspired Teaching." The resulting multidisciplinary team of co-creators (n = 14)

consisted of students, educators, and facilitators of research-based teaching. Two online co-creation workshops facilitated the co-creation of outputs. It was utilised for "co-defining," "co-designing," and "co-refining" outcomes. Throughout, triangulation was utilised to enhance credibility. After the process, all co-creators reviewed the results presented in this article. This article defines teaching, research, and Research Inspired Teaching and ten guiding principles for development, delivery, and evaluation. These outcomes may benefit midwifery and nursing schools by encouraging collaboration and additional research. Other universities seeking to cultivate, prove, and promote their own "Research-Inspired Teaching" could collaborate with other universities seeking to cultivate, prove, and promote their own "Research-Inspired Teaching" Interuniversity cooperation would be beneficial (Pezaro et al., 2022).

Early exposure to research is advantageous for students and graduates. However, financial and time constraints limit most medical school research and academic opportunities. We assessed medical undergraduates' awareness and experience of research and educational activities. Method There were focus groups with medical students from all five levels. We used codes to identify each stage's central themes. Results Research benefits their undergraduate experience, career, and society. Opportunities for research and the timing of research experiences emerged as central themes. Due to time constraints, later-stage students advocated for earlier research integration, whereas early-stage students were concerned about their lack of experience and opportunity. Conclusions Students advocated for a longitudinal strategy to enhance research and educational experiences. A new framework is proposed to summarise student concerns and research advantages. These recommendations can be incorporated into existing and new research programmes to enhance the student experience, critical thinking, and physician training (Howell, 2021).

Academics have multiple identities, which can become fragmented at times. Therefore, it can create identity conflicts and impede their professional development as teachers. Our data come from interviews with seven academics at a research-intensive university and teaching portfolios created during their practicums. All academics completed two years of pedagogical studies, with a strong emphasis on teaching practicums. Throughout their pedagogical studies, their teacher identities developed significantly. We examined two academics' narratives about their development as teachers—Matti and Kari. Matti and Kari initially demonstrated a bias toward pedagogical training. We discovered that the fundamental characteristics of their teaching practicums, such as developmental projects and reflexivity, aided in developing more holistic, relational identities. Our findings contradict some prevalent views about the development of academics' teacher identities and argue for the need to redefine academics' teacher identities considering the concept's relational nature and the role of the research-teaching nexus. The study has significant policy implications; developmental projects should be incorporated into pedagogical training (Kaasila et al., 2021).

This paper presents a case study of a research-active professor instructing early childhood education Master of Education (MEd) students in research methods (ECE). In Hong Kong, the study was conducted at a research-intensive English-language university. Data were gathered through lesson observations and interviews with the primary participant. Using a 'PBL-triple' approach that was problem-based, practice-based, and project-based, the professor's objective was to train students to become critical 'consumers' and novice 'producers' of research. Our research contributes to the body of knowledge by presenting a classroom perspective on research-teaching relationships (Li et al., 2020).

Teaching students about research can be beneficial, given research and innovation in the IT industry. This study investigated how students perceive the advantages of incorporating research into undergraduate IT degrees. Students enrolled in one or both of two specialised research skills courses were questioned about the advantages of taking the courses. Following increased information technology knowledge, their lifelong learning and employability skills improved. The study discovered that motivation positively affected whether students believed they had obtained these benefits or not. In distinct ways, beliefs and research participation influenced perceived benefits. This enhanced understanding of research integration in IT education should aid academics in designing courses and degrees to support these advantages (McGill et al., 2020).

3. Methods

A mixed exploratory methodology is applied in this research. Both primary and secondary data collection were used in this study. For collecting preliminary data, a survey and focus group discussion was used. The survey was prepared in Microsoft Forms, and a link was sent to each respondent by e-mail. Reviewing related literature as a method (Snyder 2019) is also applied for analysing the relationship between research and teaching. This method involves identifying, selecting, and critically reviewing previous works to interrelate them with quantitative findings (Dewey & Drahota, 2016). The paper uses a quantitative descriptive method in collecting and analysing data.

3.1 Sampling Method

The sampling method adopted is the census approach. The questionnaire was sent to all academic staff teaching in three disciplines (programmes): logistics, maritime, and process engineering. A focus group followed the survey to investigate further the issue being understudy. The focus group was based on open-ended questions to gather feedback and obtain more detailed information. The analysis method uses frequency analysis techniques via Microsoft Excel Data Analysis.

4. Results and Discussion

Findings reveal that 55% of targeted participants responded to the survey. For instance, when asked about the possible relationships between teaching and research, most respondents (75%) indicated a positive linkage. They believe research positively influences teaching/education and vice versa, while 17% of respondents believe there is considerable overlap between the two. Some respondents (8%), however, disagree. They indicated that there is a negative impact. For them, research generally distracts the quality of teaching. They argued that research negatively impacts students' learning. However, no one agreed that research and teaching are independent. In other words, research harms education, as illustrated in Fig. 1.

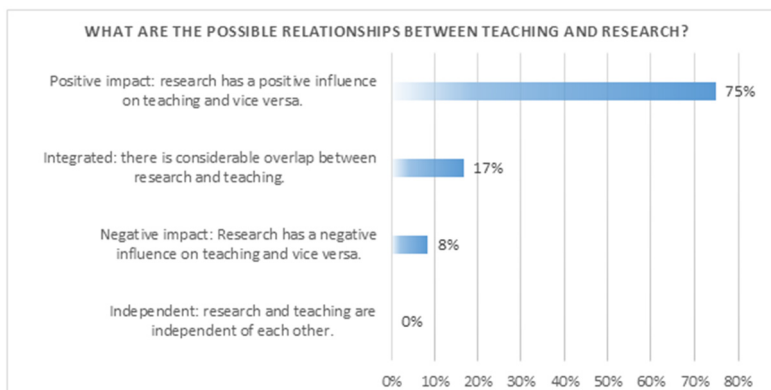


Figure 1: Possible relationships between teaching and research

As many as 83% of the respondents indicated that professional requirements (professional bodies) support the research-teaching nexus in the curriculum. The rest disagrees. The overwhelming majority (92%) believe that enhancing the linkage between research and teaching will improve employability.

When it comes to research, the teacher indicated that students experience learning through writing (83%), "contributing to a research outcome such as conference presentations, papers or reports." (75%), and "being involved in fieldwork-based on research projects (75%)", and finally "reading research papers or reports" (75%). Other activities are shown in Figure 2.

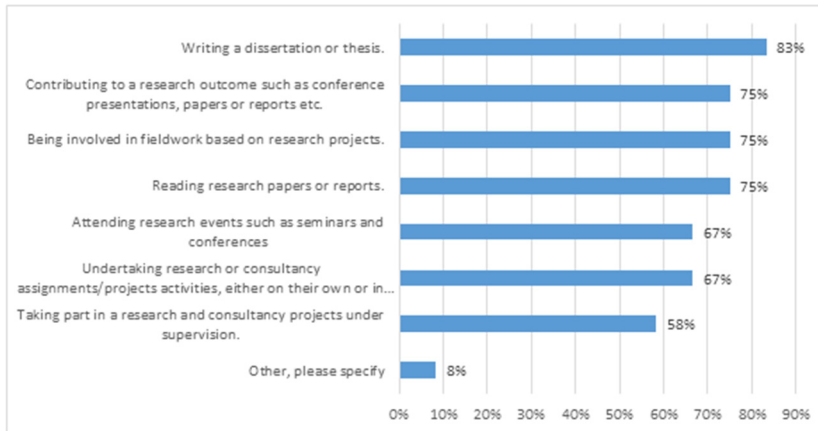


Figure 2: How research contributes to teaching

Respondents were asked, 'Are good researchers also good teachers?' And most did not agree. Below are some of their statements.

"Not necessarily. Good researchers may be able to present real cases and experiences to students. They are expected to be more confident in the subject they are researching. However, some researchers waste lecture time/periods dwelling more time to research. Their teaching assignment is more compromised, and quality may deteriorate."

"Need not to be. However, good teachers enhance their knowledge by proper researching."

"It depends upon the individual. Not all good researchers can be good teachers. Some good researchers could be strong in research but very weak in teaching and vice versa."

"Not necessary. Teaching skills are different. Nevertheless, there are faculty who possess both."

"In most cases, there is a positive mutualistic relationship between the two. Active researchers always have up-to-date information to make up their teaching materials and engage their students in hands-on or application-oriented research activities."

"Teaching and research are almost completely different. Both have a well-structured nature and should be separated from each other. A textbook used for teaching does not change much because the basic knowledge does not change too much. Similarly, research has a well-structured nature. There is a weak connection between teaching and research. Teaching needs some skills (class management, communication...). Research and teaching must be separated. There is a very weak nexus."

Some ideas emerged from the workshop discussion, including whether being an active researcher is suitable to teach. Only an active researcher or at least keep up to date with their fields can help students develop an attitude of inquiry and teach them how to learn and ask questions. Most respondents (88%) believe that undergraduate students learn most when involved in research-based activities such as problem-based learning, case studies, literature review, and data collection

and analysis. When asked about research ethics, 76% of respondents.

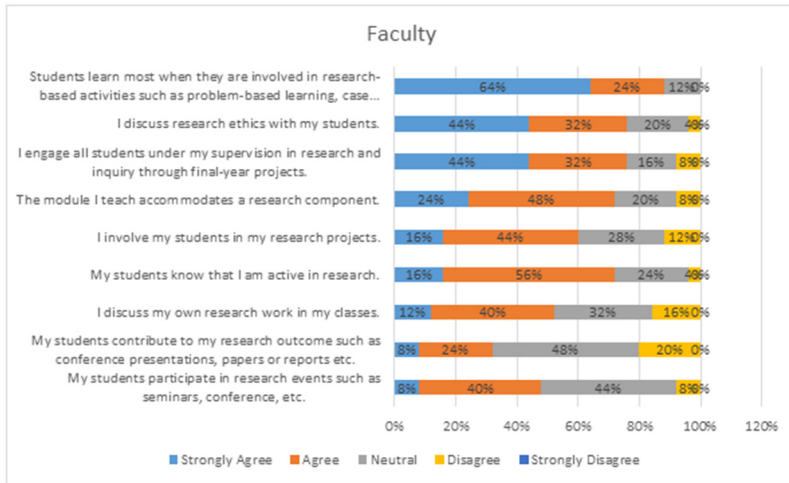


Figure 3: If student engagement in research has a positive contribution to teaching: faculty responses

On the other hand, most students (71%) responded that they are aware of research ethics. 60% believe that they can learn most when they participate in research-based activities, and (58%) of students indicated that they are aware that their teachers are active in research. Half of the respondents said they conducted research assignments/projects under supervision. This is much in line with faculty responses. They also indicated that "their teacher discusses their research work in our classes (37%), they participated in research events such as seminars, conference... (31%), the teacher involves me in their research projects (31%), and finally, they indicated they learned about research methods in their discipline. These results are in good agreement with teacher results.

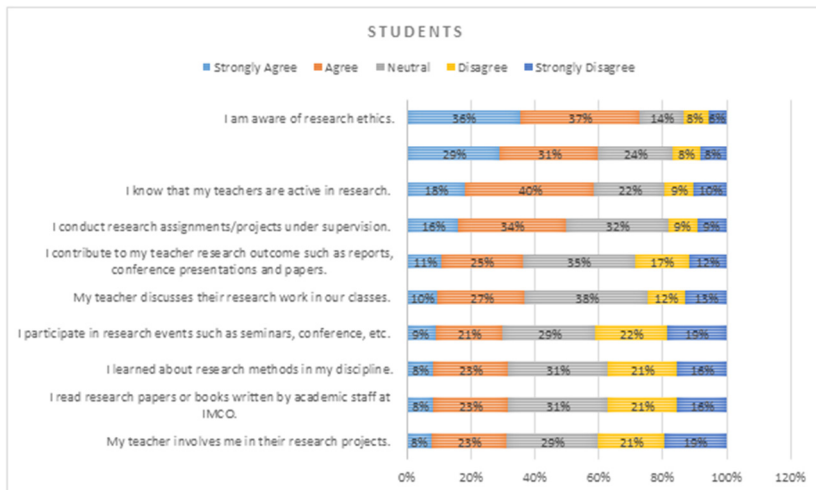


Figure 4: Students' awareness of research ethics

When asked about the main factors that weaken the research-teaching nexus in their department, respondents indicated that a high teaching load (66%) and limited time devoted to the development of students' research skills (66%) were the key challenges, followed by lack of research funding (34%). Large classes (17%) and high research supervision loads (14%) exist.

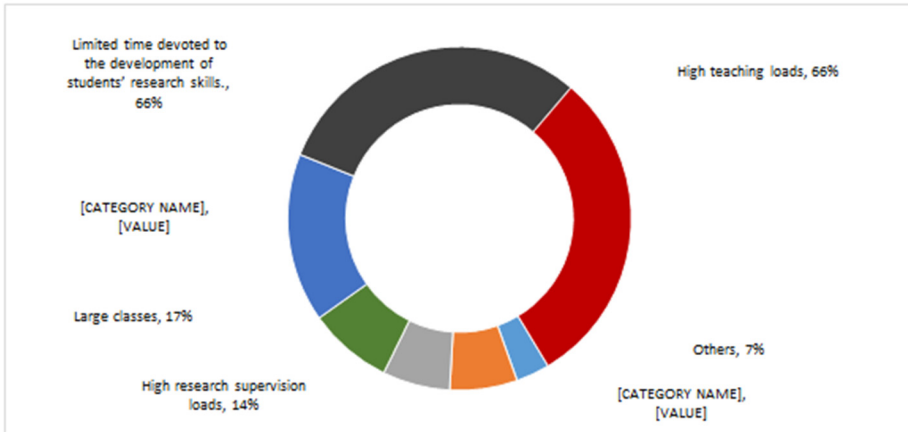


Figure 5: factors affecting the research teaching nexus

Actions that should be taken to create a more effective link between teaching and research, as suggested by respondents, include:

- The key to strengthening the linkage between learning and study is to base the curriculum around inquiry-based learning
- The teaching load should be reduced. Having a specific workload enables the teacher to make time for research.
- Allocate credit hours for research work. Staff with research grants shall have less teaching load.
- The curricula should be designed to include theoretical, practical and research-oriented topics.
- Conduct more research seminars geared towards students.
- Encourage and reward students and staff who participate in research competitions.
- Involve other teachers (not an active researcher) within the existing research project.

5. Conclusion and Implications

The research and teaching nexus has long been controversial among researchers attracting the attention of the researchers. However, there seems to be a consensus that they have strong relations in that each complements the other. The research complements teaching, and teaching complements research. This study confirms the presence of positive relations between research and teaching. It implies that research improves teaching quality and vice versa. However, most respondents agree that being a good researcher does not guarantee being a good teacher. Even though research contributes to teaching in that it helps teachers present life and confirmed cases, teaching is also an art requiring good communication, passion, and attracting learners' attention. Even if researchers develop innovative outcomes, they will fail to reach the learners if they are well conveyed to learners. The majority agrees that undergraduate education can be improved if students are engaged in research or if staff allows student participation in research. However, in many HEI institutions,

research budgets are limited. In addition, staff are highly loaded in teaching, and many lack research skills. Integrating research in teaching requires HEIs to improve research financing, allocate staff time for research, train staff to conduct research, and attract student engagement.

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