

# Research Productivity in Higher Education Environment

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## Abstract

Most higher education institutions that have an ambition to reach the highest institutional ranking and seek to have prestige among other institutions consider research productivity as one of the most important measures of educational quality. Therefore, measuring research productivity has gradually been considered as the key to promoting researchers and providing encouragement for creating the finest work.

In the face of various challenges regarding the active future contributions to higher education development, the question that arises is this: what will be the role of research in higher education?

Tentatively, the influence of research on higher education performance is obvious and direct, and there is a lineal connection between higher education and research productivity.

This paper examines academic staff research productivity. Specifically, it explores the individual and institutional factors that contribute to their productivity while also comparing determinants across academic disciplines. It reviews aspects such as motivation and other factors of research productivity. It discusses research development programs in higher education as a key factor for a blooming future and knowledge incorporation for operative achievements in higher education institutions.

Keywords: Research, Higher Education, Academic Research

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## 1. Introduction

The progress, glory, and prosperity of any nation is directly associated with the progress of education. Today's societies have intensely identified the significance of education for building solid foundations of authorities, energetic culture, and strong economies. They promote educational systems to produce pedagogical methods that are adjusted to present requirements and opportunities for better student learning.

Many studies have been conducted to assess the relationship between research production, modernization, and economic development (Crompton 2002; Mokyr 2003).

Higher education institutions all over the world are believed to be the manufacturers of innovative knowledge. Institutions are considered as contemporary producers of knowledge via research productivity. Thus, the task of instructors is not restricted to teaching. Binde and Matsuura (2005) revealed that transferring knowledge via research productivity is realized as a key element in advancing and consolidating social welfare and decreasing the inconsistency in community awareness.

Higher education (HE) systems and faculty members face a wide range of challenges when trying to be more creative in research (Wodarski, 2001), which puts scientific research at the highest priority of most universities. This made research, and its impact, the most important topic to be discussed in the contemporary higher education setting.

Research expectations for faculty members have been growing over the last century to a level where research productivity has become the crucial and special standard for employment and advancement at higher education institutions. Therefore, in higher education institutions, identification and progression of faculty members are mostly based on the number and quality of their research productions, which are distributed through articles, books, or reports (Vakkari, 2008).

In higher education institutions, research and teaching are essential characteristics in sustaining social stability, economic evolution, and educational standard sharing.

Several studies show that higher education institutions are aspiring to strengthen the relationship between research and teaching (Zubrick, 2001; McGrail et al., 2006). Furthermore, many researchers have been encouraging such links and found that connections between teaching, research, and quality are quite important (Jenkins & Healy, 2005).

The awareness of the literature on the influence of research on the prosperity of higher education concentrates on research output. Research accomplishments are probably the most significant influence for evaluating the ranking of a progressive institution (Chen, 2001). Consequently, most developing countries have developed long-term strategic plans and invested large amounts of money into the development of research in higher education institutions. Higher education institutions are now commonly considered to be the institutions of a society's output and economic prosperity. Hence, in the recent decades, institutions of higher education have increasingly supported the development of scientific research, as it is the most appropriate way towards the prosperity of higher education in the era of globalization.

Research productivity has become more complicated as contemporary scientific research, in most cases, is developed by teams that most likely require a group effort between more than one institution (Jones, Wuchty, & Uzzi, 2008).

Research in various types of institutions reveal how researchers use knowledge in research, their viewpoints on team research is consistent with their academic emphasis, and on how the various methods of research may encourage knowledgeable improvement (Lindsay, Breen, & Jenkins, 2002). Hence, research will have positive effects only when researchers are enthusiastic and skilled enough to take advantage of its results.

The majority of the research productivity from higher education faculty members is distributed through publications. Such publications assist researchers in gaining an academic reputation, both locally and globally. Research productivity may often be considered as a key role in achieving success, which may be the way towards a promotion, awards, and a good salary (Bassey, Akuegwu, Udida, & Udey, 2007).

At higher education institutions, academic leaders are highly attracted to how research has a tangible impact on the academic developments as well as the progressive stimulus on the global economy. This kind of impact is quite interesting, especially when it provable and confirmed by evidence.

Research in institutions of higher education can place them on international ranking lists and assist academic leaders with the decision-making process. Research also has an obvious impact on developing academic research capacities among academics, which influence innovation and quality of teaching.

Accordingly, an open correlation can be established between research impact and the quality of higher education, which can then lead to a process of learning about the knowledge industry, which consequently leads to the glory and prosperity of any nation.

The purpose of this paper is to examine the potential impact of research productivity on developing academic research capacities among academics, which consequently influences innovation and quality of teaching, student learning, and then on the quality of learning provided by higher education institutions.

This paper sought to illustrate the degree to which an instructor can apply the real research values that can promote the efficiency and effectiveness of higher education institutions.

## **2. The meaning of research**

Regardless of how the term research is applied in academic literature and in everyday life, this term is still vague, especially for the beginners in the field of research.

There are different definitions of research provided by different authors. The Advanced Learner's Dictionary of Current English introduces the term of research as "a careful investigation or inquiry especially through search for new facts in any branch of knowledge." Redman and Mory (1952) defines research as a "systematized effort to gain new knowledge."

Creswell (2008) revealed that research is the key role for solving real-world challenges and bringing all substantial enhancements, as well as providing a clear understanding into new concepts that develop individual knowledge of different social, commercial, and cultural facts.

Gliner and Morgan (2000) define research as "a systematic method of gaining new information, or a way to answer questions," whereas Bassey (1989) defined research as a "systematic, critical and self-critical inquiry which aims to contribute to the advancement of knowledge."

Other authors like Midraj et al. (2007), Mackenzie, and Knipe (2010) described the research paradigm as a methodical and disciplined enquiry through which data is collected, analyzed, and interpreted to reveal confusion and enhance the situation. Therefore, a research paradigm is "a cluster of beliefs and dictates which for scientists in a particular discipline influence what should be studied, how research should be done, how results should be interpreted, and so on" (Bryman, 1992).

Regarding educational research, a preliminary review of the literature did not indicate any clear or agreed-upon definition (Walter et al., 2009). The most common feature in defining educational research is a research into educational matters (Johannigmeier & Richardson, 2008).

Hence, research should involve defining and redefining problems, formulating hypotheses or proposed solutions, collecting, organizing, and evaluating data, making deductions and reaching conclusions, and at the end thoroughly examine the results to reveal whether they fit the formulating hypothesis. Accordingly, research is a new contribution to the existing stock of knowledge. It is the process that seeks to reach the truth with the assistance of reading, observation, analysis, investigation, and evaluation. In short, the word research is the process of searching for knowledge by using a clear objective and a systematic approach towards providing a solution to a specific problem.

### **3. The main drivers of research productivity**

The advanced targets of any strategy on education can be achieved via combined efforts towards research and teaching by higher education faculty members. For this purpose, higher education institutions accomplish their strategic plan to reach their educational goals. According with this, different institutions have the vision of being a top international university in respect to research productivity, while others seek to be on the top of a specific region, and yet other universities seek to be the top local university.

Research productivity plays a key role in the process of enhancing essential learning skills and boosting a university's standing. Furthermore, research increases the faculty's knowledge and thus their students' learning. This leads to the following question: which are the main emitters and causes of research productivity?

Bukowska and Siwin´ska-Gorzela (2011) indicates that motivation plays an important role in the process of influence, and they urged researchers to be more productive, which has a progressive influence on attracting research funds.

Guay et al. (2010), Deci (2006), and Pinder (2008) classified motivation into two different types; the first being intrinsic motivation, which refers to motivation that is stimulated by personal satisfaction, desire, or pleasure and is normally contrasted with the second type, named extrinsic motivation, which is controlled by reinforcement possibilities. Both types of motivations are essential and useful to some level in performance situations.

While research is one of the highest significant factors for the accomplishment of a university's mission, assessing research productivity has progressively been used to estimate research proposals, encourage and honor researchers, and offer rewards for best research.

Although there is a lot of clear evidence on the importance of research impact, there is still a weakness in understanding how to measure research quality and research impact.

#### **4. Measuring research productivity**

It can often be recondite to assess researcher productivity, but these procedures are significant for higher education institutions and funding sources in order to judge the assignment of limited scientific resources and funding.

Different approaches have been used to measure the productivity of research, but none of them can be applied separately. The majority of them can be achieved through computing a multiple indicator obtained by outlining the number of completed research projects, the total of published research papers, and the total of research papers used. The measurement of research productivity may not be accurate in all cases, as this is due to the weights given to each indicator used for the measurement. However, these measurements are important and still required, and they cannot be dispensed with higher education institutions and funding sources.

Measuring productivity is not a straightforward task; most higher education institutions measure research productivity according to published work, awarded funds, and the citations that the published research has obtained. The best way for measuring research productivity is by looking at the quality and quantity of publications (journal articles, books, chapters, conference papers, or research proposals) that are submitted, accepted (in press), or published.

When a researcher publishes a research paper, other researchers may use the search results for their own papers and be cited as references in their consequent articles.

The references of one published paper by another are features of advanced research, and it is normally considered that the number of citations of a particular article is a clear indication of its influence in the scientific community.

Such citations generate particular data that can be analyzed and applied statistically to measure the significance of such a published paper or a specific journal. The approach used in this measurement is defined as bibliometrics, which are declared via different types of indicators that have become essential for authors and organizations. These indicators assist researchers in selecting high-ranking journals to read published research or to submit their manuscripts. Bibliometric indicators provide mathematical measurements that are expected to numerically finalize the value of such research and the academic publication (journal, magazine, newspaper, etc.) in which that research is distributed in.

Standard bibliometric indicators, which can be applied to evaluate academic research productivity, are meant to describe the research distribution around states, regions, higher education institutions, and individual research units.

It is difficult to obtain any direct measurement to scientific research, however, as citations obtained by each published research will be considered as a proxy for quality.

There are three types of bibliometric indicators. The first is called quantity indicators, which is used to measure the research productivity of a certain researcher(s).

With the bibliometric quantity indicator, a number of published papers by a certain researcher(s) will be totaled during a certain period of time.

The second is the performance indicator, which is needed to measure the quality of a journal and researcher(s). It aids in recognizing the level of quality of the published article and can be used to measure the influence of the article on the scientific community. Performance indicators refer to researcher(s), or even a journal, cited by others, thus, the level of performance increases by increasing the number of citations.

The third type is called a structural indicator, which is used to measure the association between published articles, researchers, or research areas.

In summary, bibliometric indicators are significant measures to assess the quantity and quality of the published research output. However, although it appears more stable and reliable, bibliometric indicators should be applied with more care.

The journal impact factor (IF) is possibly the most common indicator applied to journal ranking. It is the amount of citations that a journal has, and it estimates the weight of a journal in its given subject.

The measurement of researcher performance can use different indicators. The first, called a crown indicator, is determined by dividing the average number of citations obtained from a researcher(s) by the average number

that could be estimated for publications of the same type during the same year.

The second indicator is the h-index. In general, the higher the h-index, the better the researcher will be. The h-index of a researcher is calculated as an [h] when [h] among his/her numbers of articles (n) has at least [h] citations each.

Finally, Google Scholar is a free Internet database that comprises citation statistics on the published articles of a particular researcher(s).

## 5. Motivations and factors for enhancing research productivity

It is important to know the factors that motivate faculty members to accomplishing research productivity. The majority of them are motivated to be productive in research, teaching, and other academic services (Fairweather, 2002).

Akinyokun and Uzoka (2007) determined that there is a clear connection between academic research productivity and motivation. More assertiveness is placed on academic research, resulting in conferences, journal publications, books, etc.

The term motivation is derived from motive; it is a method of willingness and wanting that must be fulfilled. Motivation is a private attitude that causes a person to act in a way that leads to the achievement of specified goals (James, 2011).

Adler's (2008) explained motivation as an instinctive, vital, and active driving force that pushes one in a certain direction. He described motivation as a motive and emitter to defeat attenuation and inferiority. Others defined motivation as a driver to indicate the driving force that urges individuals to act and perform towards predefined goals (Lockwood et al., 2005).

A full awareness of academic motivation is highly needed, as it is an efficient approach of continuing and rising academic research productivity.

Many authors have claimed that motivation is essential to enhancing quality research culture at educational institutions (Tien, 2008). Obviously, motivated faculty members are expected to be creative researchers who promote their institutions' global reputations, which have a direct influence on the attainment of research funding.

## 6. Factors affecting research productivity

The factors that motivate the productivity of academic research can have more than one classification.

### 6.1. *Intrinsic and extrinsic motivations:*

Intrinsic motivation is concerned with the stimulating influences that inheres contentment of the activity (Blackmore & Kandiko, 2011). It is special inner reactions, such as contentment or self-satisfaction for any achievement. Intrinsic motivation is expressed by an aspiration to knuckle down just for the simple sake of knuckling down.

In Blackmore and Kandiko's (2011) research, they determined that inner motivation is essential as it is concerned with the case of learning and to gain more skills and knowledge. This fact has already been confirmed by Wichian et al. (2009). They realized that skills, knowledge, training, and workshops in research provide better encouragement on research productivity.

Chen et al. (2006) introduced six factors of intrinsic motivation, which each have a major role in the research productivity of academics. These factors are: achieving peer recognition, gaining respect from students, satisfying a person's need to contribute to the field, satisfying a person's need for creativity or curiosity, satisfying a person's need to collaborate with others, and satisfying a person's need to stay in the field (Cerasoli et al., 2014).

Extrinsic motivation is caused by external influences, which are mostly pecuniary in nature. This type of encouragement has been a subject of discussion because this type of motivation is actually stimulating faculty members in increasing the quality and quantity of their research.

Ryan and Deci (2000) describes the term “extrinsic motivation” as the achievement of a distinguishable result from the working of specific activity.

Extrinsic motivations encourage faculty members to complete their research in order to receive the reward. In other words, rewards motivate people to get rewards. It is the obligations that are stimulated by remunerations that do not inhere to the activity itself.

The characteristics of intrinsic motivations may cover differences unique to individual faculty members, while extrinsic motivations are properties of the environment and leadership.

The following are a number of extrinsic factors which have a direct connection with increasing the efficiency and quality of published research by faculty members.

### *6.2. Pecuniary remuneration*

Pecuniary remunerations are the most essential accomplishment practices in higher education settings. It has an effect greater than the compensation of faculty members for their publications. This type of reward is a sign of attainment, a motivator, the criterion for assessing the effort and distinguishing between active and inactive members, and one of the most important factors in minimizing or eliminating anxiety.

### *6.3. Promotion*

Academic research productivity is often considered as the main factor in reaching success as it is directly connected to promotion, new positions, and salary (Bassey, Akuegwu, Udida, and Udey, 2007). On the other hand, the promotion of academic staff is one of the key methods in supporting and advancing the quality and productivity of higher education research activities (Elie et al., 2012).

Many academics believe that promotion has an encouraging influence on academic research productivity. This indicates that universities can motivate faculty member’s research performance through the use of the promotion system (Yining et al., 2006; Tien, 2008).

### *6.4. Academic rank*

Studies have realized an optimistic relationship between the rank of academics and their research productivity. Santo et al. (2009) realized that research productivity plays a major role in increasing of professional ranking. Chen, Gupta, and Hoshower (2006) determined that an increase in professional ranking will motivate academic staff more by intrinsic motivation remunerations, while faculty members who are not expecting new ranks are highly inspired by extrinsic remunerations.

Finally, Smeby and Try (2005) realized that full professors are mostly having had research productivity more than associate and assistant professors.

### *6.5. Academic performance assessment*

Most higher education institutions have roles and obligations agreed upon in advance between universities and their faculty members who oblige them to achieve, and the university has the right to monitor and evaluate their achievements regularly.

The workload of lectures and research publications are an example of such obligations, which can differ between universities (Lee, 2000).

Generally, the assessment of academic performance accomplished every academic year and the results of such an assessment will influence pecuniary remunerations, promotion, and other advancements.

## **7. Personal and institutional factors**

Several opinions have also been raised in the literature, determining that the factors that affect faculty research productivity can also be classified as individual and environmental (institutional) factors (Bland et al., 2005; Lechuga & Lechuga, 2012).

### *7.1. Personal factors*

A number of personal factors have been proven to be influential in motivating the research productivity of academic staff. These features include a desire (passion) or fascination for the subject, talent, stamina (Hardré et al., 2011), ambitions (Roberts, 2005), confidence (Lechuga and Lechuga, 2012), gender (Balkin & Gomez-Mejia, 2002), age (Jung, 2012), academic ranking, qualifications, years of experience (Jung, 2012), self-efficacy (Lechuga & Lechuga, 2012), and seeking to collaborate with other researchers (Jung, 2012).

### *7.2. Institutional factors*

In order to measure research productivity, it is important to include the institutional context of research accomplishments as one of the key factors.

Several authors have claimed that institutional factors have a significant effect on research productivity (Lertputtarak, 2008; Wichian et al., 2009).

Different factors are provided by different authors, however, most of them shared the following factors: teaching load (Klopper & Power, 2014; Toews & Yazedjian, 2007), research skills training (Castells, 2001), financial incentives for conducting research (Ubogu & Van den Heever, 2014), research funding (Cloete et al., 2011), research collaboration (Wolff & Moser, 2009), academic promotion (Tien, 2008), department size (Cargle & Bublitz, 1986), reward system (Khan, Farooq, & Ullah, 2010), salary (Gibson, Anderson, & Tressler, 2014), and the resources dedicated to the university research function (Vakkari, 2008).

Research support was one of the most significant factors in stimulating research productivity. Thus, the greater the financial support, funding, workshops, and seminars to develop and encourage the strengthening of research skills, the greater the production of published research.

Researchers also asserted that the selection of research subjects is highly promoted by the opportunity of gaining the required funding, specifically for those who are working in a particular field of research.

Many authors have also stated that the key factors that hinder research productivity is not being educated in the required research skills during their graduate studies, high teaching loads and managerial tasks, and the absence of institutional support. Therefore, the time for accomplishing research is a key subject for all faculty members, as they should also achieve other tasks such as teaching and services.

It is worth mentioning that the culture of higher education institutions also has been found to be a key factor for verifying the research productivity of faculty members. A research-focused culture will guide, inspire, and attract more faculty members in accomplishing high research productivity.

## **8. Enhancing research and teaching connection programs in an academic community**

The level and appropriateness of connecting the teaching and research tasks and their outcome on academics and student learning are expanding fields of research, supported by degrees, placing obligations, and supporting limitations (Jenkins, 2005).

Throughout the past decade, many reviews have studied the connection between research and teaching in higher education (Brew, 2006; Jenkins, Healey, & Zetter, 2007).

Research anticipations for academy faculty have been growing for the past century to a level that shows that research efficiency has become the central and special standard for employment, tenure, and elevation within a

given higher education institution.

The weight of research efficiency in faculty promotion is often sustained by the statement that research improves teaching quality. In a discussion that has been raging on for many years, a high number of faculty members support this principle while others defy it (Zaman, 2004).

Evaluating the institutional discussions, Land and Gordon (2008) perceived that as each institution may have had its own objectives and may start with a specific strategic plan, although there were dissimilarities in the clarification of the term “research.”

The Research Assessment Exercise (RAE) defined research as “original investigations undertaken in order to gain knowledge and understanding.” However, this definition does not reflect its task in strengthening teaching (Brew, 2006).

Conversely, several studies show that HEIs are aspiring to strengthen the relationship between research and teaching (Zubrick, 2001; McGrail, et al., 2006). Furthermore, many researchers have been encouraging such links and found that the connections between teaching, research, and quality are highly significant (Jenkins and Healy, 2005). The associations between teaching, research, and student learning was the cornerstone as method for progressing and achieving the best quality of student learning (Wilson et al., 2012; Ozay, 2012).

The significance of higher education student’s knowledge with a research background is fundamental to the standards of the majority of academics. This led to the urgent need to encourage governments, higher education institution, and students as to the significance of backing research and teaching connection programs. This is mainly due to the high quality of education and the abilities that students can obtain during the learning process of research and education connections, which consequently leads to the development of a comprehension economy and a knowledgeable involved civic culture.

Research papers of various types of institutions reveal how students use knowledge in research, and their viewpoints on team research is consistent with their academic emphasis on how the various methods of research may encourage the students’ philosophy and knowledgeable improvement (Lindsay, Breen, & Jenkins 2002; Elton 2001).

Jenkins et al. (2003) applied data from student focus groups to claim that connecting teaching and research can assist students via teaching with enthusiasm, trustworthiness, and reputation, however, Neumann (1994) stated that student viewpoints connecting teaching and research will assist lecturers in exposing and adapting a constructive and interesting method towards learning.

Rauckworst (2001) analyzed the opinions of 986 alumni and obtained research stating that students who contributed in research expressed a higher fulfillment with their skills and further confident views about whether their knowledge has improved their talent to advance knowledgeable interest, obtain information autonomously, comprehend scientific results, and ability to review and analyze the literature critically. (Lopatto, 2004; Seymour et al., 2004).

Higher education research courses are an essential field so as to present a foundation for educational development. Niemi and Jaku-Sihvonen (2006) revealed that research is one of the highest significant areas that should be in the higher education curriculum. With respect to such an area, a research-based education has recently received high attention from both scholars of higher education institutions and from community debates. The method for structuring teaching and research courses in departments and institutions is a crucial factor to create the required guidelines and strategies used to stimulate the relationship between teaching and research (Zamorski, 2002). Such methods and approaches are different and satisfy different principles. To an accurate level, Brew and Boud (1995) have attempted to concentrate the discussion on a specific perspective association between research and teaching by denoting the significance of learning as the essential connection between them.

Prince and Felder (2006) evaluated several inductive research methods, concluding that the research that indicates their usefulness is well-matched for a specific program and lecturer.

Lecturers may construct research-based methods in the way they lecture throughout; for instance, by implementing an inquiry-based learning method (Cousin et al., 2003). Likewise, lecturers may display the skills of teaching and learning to explore the knowledge that appears in their classes in order to improve their teaching



methods (Breslow et al., 2004).

For higher educational levels, there is still an essential requirement to design adaptable and effective methods to be used for higher education institutions and to simplify the increasing convolution of methods to utilize research to evaluate, monitor, and encourage the quality of the research provided (Moed, 2011).

Over the past decade, researchers have been concentrating their awareness on the effects of quality assurance in teaching and learning. Some of these researchers have introduced evaluations, monitoring, and have promoted models that essentially concentrate on the evaluation of study curricula and the student learning products.

Currently, there is a significant amount of available literature for hypothesizing research-teaching connections, restructuring teaching actions about these notions, and considering the improvements of the research-teaching connections advantageously as an institutional aim (Healey and Jenkins, 2009; Jenkins and Healey, 2005; Kreber, 2006).

Some researchers in the U.K. show that there is an important connection between research and teaching, though this certainly does not specify that research quality leads to teaching quality (Drennan & Beck, 2001).

Generally, the literature shows that during the last forty years, research into the connection between the tasks of teaching, research, and student learning has been expanded from limited methods concentrating on statistical associations that concern teaching research quality and student learning to a further conjoined quantitative/qualitative approach concerning different topics of research and settings, such as the priorities and structures of higher education institution, learning hypotheses, and research methods (Jenkins, 2005).

The exploration of the level, type and qualities of the teaching and research connections has been advanced using different viewpoints: the academics (Deem & Lucas, 2006), departmental instructions (Coate, Barnett, & Williams, 2001; Durning & Jenkins, 2005), higher education institutions (Hattie & Marsh, 2004)) national education standards (Harley, 2002) and from the viewpoint of student learning (Lindsay, Breen, & Jenkins, 2002).

The various resources and missions of higher education institutions and the way research is understood, comprehended, and maintained also play a significant role for shaping the connections between teaching, research, and student learning (Jenkins 2005; Hattie & Marsh, 2004).

Teaching and research was the key element for higher educational institutional management involving unavoidable connections between teaching and research (Shin, 2011). Consequently, the students endured a demanding series of learning and improved their proficiency in addition to enhancing the desirable characteristics (Healey, 2005).

The process of enhancing student learning should be achieved with the intention to connect the affiliation of intellectual skills and actual preparation with research development in various modules of the program up to the stage where students should have the motivation to conduct research. More importantly, this would assist students in improving their critical thinking and problem-solving ability, which consequently will help them in any vocation they pursue (Robertson, 2007).

The activation of such relationships would essentially affect a student's future in the areas of career researchers, as they can rely on their gained research skills of comprehension, thinking methods, implementation, interest, and the desire to take these experiences to new work positions.

In short, the reviewed literature in the area of research-teaching connections indicates that this field is progressively identifying the essentials to involve students through which their ways of reasoning, interest in, interaction with, and acting on are all enhanced.

It could also be observed that the teaching and research association was the most significant indicator that would affect the students' anticipated learning objective. Therefore, the researcher highlighted the improvement of lecturers' capabilities to use research so that they would attain both wisdom and skills, which are reflected in the student's progressive learning (Bednarz, Bockenbauer, & Walk, 2005), and would assist instructors in delivering knowledge which will consequently raise students' learning quality to be consistent with the plans of the research university (Gordon, 2004).

## **9. Faculty research development programs**

Relying on traditional and non-advanced concepts in the performance of academic research is one of the most important factors of underdevelopment and decline in the quality of higher education institutions.

As an academic, faculty members are under increasing pressure to write and regularly publish high quality articles or books in reputable, top-ranking journals.

Remarkable concepts must be marketed and disseminated through an advanced scientific research method based on international standards, so as to accept these ideas appropriately. Otherwise, any idea, if not marketed through a rigorous search, is doomed to neglect or rejection.

Academic workshops and training are needed to help faculty members develop and broaden their academic research and transferable skills, regardless of the field of specialization or years of teaching experience.

The faculty research development program should work to achieve the following objective:

“To strengthen academic and research staff, to enhance their research performance, skills, and openness to the international community.”

The key aim is to enable high-level achievement of an influential, innovative university research profile by ensuring that all research staff and faculty have the skills and knowledge required to successfully manage their research. It also articulates the knowledge, behaviors, and attributes of successful researchers and encourages them to realize their potential.

Faculty research development programs should be planned to encourage researcher development, illustrating the knowledge, skills, behaviors, and attributes of operative and very skilled researchers that are appropriate for an extensive variety of academic or industrial vocations.

Such programs should be developed and provided by higher education research experts who are professionals in providing research training workshops, support, and mentoring in order to create the required research skills appropriate to a particular field.

Whether participants are planning to learn the fundamentals of research methods, statistics and how to handle statistical analyses using relevant software packages, such as SPSS, to control their qualitative or quantitative data, or understanding how to design and distribute questionnaires for their research, research development programs will be the key to solving all the challenges that interfere with their journey of being a professional researcher.

The programs should provide special sessions to the graduate and postgraduate research supervisors to assist them in submitting outstanding guidance in research skills and knowledge that introduce the world's best students. All research supervisors should take such training workshops before they are permitted to supervise a final-year project or any similar research project.

The first step to successful academic publication understands the professional writing skills that a researcher needs. The other sessions of such program may include:

**Targeting journals:** It is vital to identify the type and level of a journal before you start writing your paper, and you'll get the correct perception on how to ensure that your paper corresponds to the goals and scope of the selected journal.

**Writing skills:** This session will assist new faculty researchers in detecting the capability and inability of their writing skills, making them realize the best way to strategize the solutions.

**The structure of the research paper:** During this session, the parts of the research paper will be discussed in general and explain the relationship between all of its parts.

**Introduction:** This session will discuss how a solid introduction can enhance the intelligibility of thinking and writing and serve into other phases of the writing process.

**Results and discussion:** This session will examine the significance of the results and the discussion sections.

**Developing a research plan:** During this session, researchers will learn how to construct everything that has been learned over the past sessions in order to create a complete plan for writing a research paper.

## 10. Academic research development through mentoring

Mentoring research development comprises of any kind of support for academic staff to develop and sustain their research skills and publications. Typically, mentoring occurs via ordered meetings, without any bureaucracy or heavy paperwork. The responsibility is distributed evenly between the mentor and mentee to gather consistently, instead of the college or department having to control the programs. This needs a clear obligation to the session times and dates of the program by both mentors and mentees.

Mentoring can also take place as part of daily research events and collaborations between academic researchers, specifically where members work with each other in circular research groups or team up on research proposals, projects, publications, or even a book.

Conversely, in situations where teamwork is less frequent, universities may proceed to guarantee that faculty members have regular communication with an appointed mentor and to inspire all concerned mentees.

Under what circumstances is academic research development through mentoring applied?

Normally, mentoring is not applied for junior faculty members.

Mentoring programs are expected to be focused on forming research skills for an early-career faculty member (such as a research associate, a research assistant, an assistant lecturer, or an associate lecturer).

Furthermore, mentoring is very useful in assisting staff at any level to advance the efficiencies of their research and their research productivity. Faculty members in their early academic career, who aspire to advance their research capabilities, can benefit from mentoring programs, as can a skilled professor. For instance, a professor in the engineering field can join a mentoring research group and might learn much from a senior colleague, possibly from other fields such as science.

Who is the mentor and what are his/her qualifications and characteristics?

Mentors should be senior and have high skills in leadership, guidance, and conveying the ideas to the mentees. Mentors are supposed to be dedicated to the rules of mentoring, eager, enthusiastic, and willing to offer enough time to the program.

Mentoring research programs should be offered for no less than one year, namely until the new faculty or staff member proves that they are skilled enough as a self-reliant researcher in a higher education setting.

Writing research is a challenge in and of itself. Hence, the key role of mentors is to stir up enthusiasm, and explain the results of writing and publishing research and its positive effects on the future of the researcher and on the reputation of the university.

## 11. Conclusion

This paper highlights the concept of research quality and productivity, and it discusses the motivations and factors that motivate faculty members to accomplish better quality research and publications.

Further research can observe these recognized motivations and factors as well as explore the relationship between them and research productivity, hence assisting in recognizing the main causes that leads to low universities' research productivity.

Research productivity has a clear capability to make substantial contributions to the quality of higher education institutions. The content of this paper will also encourage academic leaders to better understand the significance of research productivity and adopt more practical proposals that would improve it, such as faculty research development programs. This paper presented a theoretical and practical basis for future studies.

The policies we have recommended in this paper are intended to concentrate on the sustained vitality of research by faculty members and how to pursue and achieve better quality.

This paper also highlights the significance of promoting a connection between faculty research and teaching quality. Applying a research-teaching link will directly affect the quality of the education provided by universities across the research spectrum as well as teaching quality.

It is useful to learn from the experiences of countries that are pioneers and advanced in research; countries that have effectively developed its academic research capabilities inside and outside higher education institutions, producing results such as innovative industrial fields and highly skilled technicians more efficiently than any other country.

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