

# Research-based teaching strategies are the route to students' higher learning and better teaching quality

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## Abstract

Research is believed essential in the development procedure of students in higher education institutions (HEI). This research aims to participate in a wider comprehension of the value and significance of research for teaching excellence and student learning. It is to examine the legitimacy of the proposition that research activity enhances teaching and improves students learning.

The current study measures a proposed conceptual research model, which is based on various existing literature opinions that provide a clearer vision that assist higher education institutes in raising students' learning and teaching quality to be consistent with university research plans. This model was empirically tested to measure the hypotheses between six proposed independent variables: Student Critical Thinking, Student Problem Solving, Student Accomplishment Research, Teach with Enthusiasm, Teach with Trustworthiness, and Constructive Method Of Learning with the dependent variables: Enhance Student Learning and Enhance Teaching Quality.

The results of this research demonstrate how the adoption and improvement of the research-teaching connection provide a chance for students to obtain a wide-range of qualities. The syllabus program in which students learn is essential to the improvement of their reasoning, interest and acts.

*Keywords:* Research Based Teaching; Higher Education; Teaching Quality; Students' Learning.

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## 1. Introduction

Higher education institutes, research and teaching are essential characters in sustaining social stability, economic evolution and educational standard sharing. Lewis et al. (2003) observed that over the last decade, the procedures of higher education institutions have altered significantly.

Today, Higher Education Institutions (HEI) confronts different types of challenges allied with the appearance of new types of managements and its inspection value. The level and appropriateness of connecting the teaching and research tasks and their outcome for academics and student learning are expanding fields of research in a discussion, supported by responsibility degrees, placing obligations and support limitations (Jenkins, 2005). Furthermore, the enhancement of connections between academic research and teaching approaches is not a recent subject. Throughout the last decade, many reviews have studied the connection between research and teaching in higher education (Brew, 2006; Jenkins, Healey & Zetter, 2007).

Higher Education Institutes (HEI) all over the world are giving particular awareness to adapting a higher level of quality assurance methods so as to guarantee that students obtain the best quality and pertinent education and that they receive qualifications which are extensively acknowledged. This acknowledgement should be vital to local educational authorities, industries and even to other educational authorities internationally.

Generally, quality assurance for higher education utilizes three methods explicitly, accreditation, accountability and assessment, each necessitating different instruments.

Research anticipations for academy faculty have been growing for the last century to a level that research

efficiency has become the central and the special standard for employment, tenure, and elevation at higher education institutions.

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 for many years, a high number of faculty members support this principle and 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, there were dissimilarities in the clarifications of the term research.

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 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 highly significant (Jenkins and Healy, 2005).

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

The emphasis of this research has been on the influence of the connection between teaching and research on student learning and consequently on enhancing the quality of learning provided by higher education institutes.

It also explores the significance of research for the quality of teaching and student learning and focussed on how curriculum and programme members, penal groups and institutions can guarantee that the terms of higher education research maintain the student learning skills so that it can improve a student's accomplishment of research for graduate and undergraduate students.

A mixed method research approach will be conducted to measure the proposed conceptual research model.

A questionnaire will be constructed and published on Google documents targeting only 150 alumni. An SPSS application will be utilized to analyse results. Furthermore, the results of the questionnaire will be discussed with 6 selected faculty members to determine the comprehensive information about the hypothesis that affects faculty performance and how they may apply this research in teaching classes.

## **2. Literature Review**

Higher education research courses are an essential field so as to present a foundation for educational development. Niemi & Jakku-Sihvonen, (2006) revealed that research is one of the highest significance areas that should be in higher education curriculum. With respect to such an area, a research-based education has recently received high attention from both scholars of higher education institutes and from community debates.

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

For the last decade, researchers have been concentrating their awareness on the effects of quality assurance in teaching and learning. Some of these researchers introduce evaluation, monitoring and promote models essentially concentrating on the evaluation of study curricula and 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 improvements of the research-teaching connection advantageously at an institutional aim. The essential literature from which to create discussions and improve strategies is: 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 last forty years, research on the connection between the tasks of teaching, research and student learning has been expanded, from limited methods concentrated on statistical associations concerning teaching research quality and students learning to a further joined quantitative/qualitative approach concerning different topics of research and settings such as the priorities and structures of higher education institutes, learning hypotheses and methods of research (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 the students' learning (Lindsay, Breen & Jenkins 2002). The method for structuring teaching and research courses in departments and institutions is a crucial factor to create the required guidelines and strategies to stimulate the relationship between teaching and research (Zamorski 2002). The methods and approaches are different and satisfy different principles, and, to an accurate level, Brew & Boud (1995) have attempted to concentrate the discussion to a specific perspective association between research and teaching by denoting the significance of learning as the essential connection between research and teaching. The various resources and missions of higher education institutes and the way research is understood, comprehended, and maintained also play a significant role for shaping the connections between teaching, research and students learning (Jenkins 2005; Hattie & Marsh 2004).

Research papers in various types of institutions reveal how students 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 the students' philosophy and knowledgeable improvement (Lindsay, Breen & Jenkins 2002; Elton 2001). Jenkins et al. (1998) 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 students' views connecting teaching and research will assist lecturers in exposing and adapting a constructive and interested method to learning. During the research results of Junpeng and Tungkasamit (2011), they realized that the higher education institute's instructors are still deficient in comprehension and expertise in evaluation for learning by applying research appropriate to university strategy is needed.

Prince and Felder (2006) evaluated several inductive research methods, concluded that the research that indicates to 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, implementing an inquiry-based learning method (Cousin et al. 2003). Likewise, lecturers may display the skills of teaching and learning and explore the knowledge that appears in their classes, in order to improve their way of teaching (Breslow et al. 2004). Consequently, the associations between teaching, research and student learning was the cornerstone as method for progressing and reaching the best quality of students learning (Wilson et. al., 2012; Ozay, 2012). The deepest and most reliable research findings concerning student participation in the connection between teaching and research is that students and lecturers find it to be a tremendously constructive practise. Rauckworst, (2001) analysed opinions of 986 alumni and obtained research stating that students who contributed in research expressed a higher fulfilment 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 analyse literature critically. (Lopatto, 2004; Seymour et al, 2004). The teaching and research was the key element for higher educational institution management involving unavoidable connections between teaching and research (Shin, 2011). Consequently, the students had a demanding series of learning, and improved their proficiency in addition to enhancing the desirable characteristics (Healey, 2005). The process of enhancing students' learning should be achieved with the intention to connect affiliation of intellectual skills, and actual preparation with research development in various modules of the program up to the stage were the students should have the motivation features to do research. Significantly, this would assist students to improve their critical thinking and problem-solving ability which consequently will help them in any vocation route they take on (Robertson, 2007).

The activation of such relationships would essentially affect a student's future in the areas of career researchers, they can rely on their gained research experiences of comprehension, ways of thinking, acting, interesting and

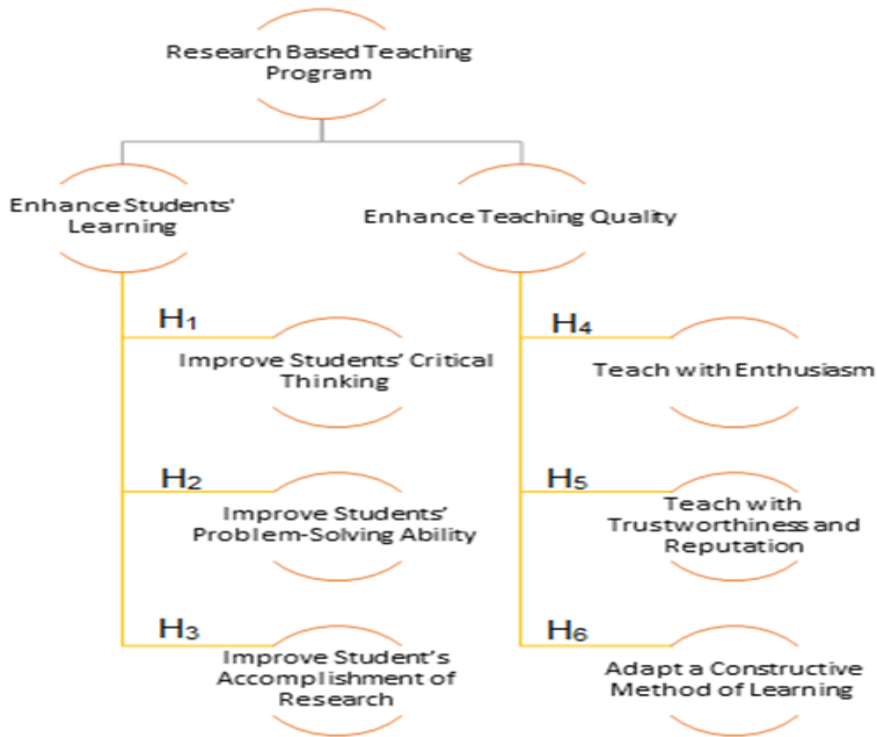
taking on these experiences to new work positions. In short, the above reviewed literature on the area of research-teaching connections indicates that this field is progressively identifying the essentials to involve students through which their ways of reasoning, interest in, interaction with and acting on are enhanced. Accordingly, it could 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 (Feiman-Nemser, 2001; Bednarz, Bockenbauer, & Walk, 2005), and would assist instructors to deliver knowledge which will consequently raise students' learning quality to be consistent with the plan of research university (Gordon, 2004).

### 3. Conceptual research model and Hypothesis

Based on extensive literature review concerning research-teaching connection that affect enhancing teaching quality and students' learning, the current study proposed a conceptual research model showed in Figure 1.

The proposed framework provides a clearer vision that will assist higher education institutes in raising students' learning quality to be consistent with a university's research plan.

Figure 1: The proposed conceptual framework



The proposed model assumes that having a highly organised research-based teaching program at higher education institutes will have a positive impact on enhancing teaching quality and students' learning.

#### 3.1. Research question and Hypothesis

To achieve the purpose of the current study, the research questions are presented to be consistent with the objectives of this research, in which we are revealing the apparent needs for a research-teaching connection, the following research questions have been formulated:

1. To what extent do the Higher Education Institutes embrace research-based teaching programs?
2. To what extent does the adopted research-based teaching program affect students' learning?
3. To what extent does the adopted research-based teaching program affect instructors' teaching quality?

To respond to the above questions, this research carries out six hypotheses that were developed from our conceptual research model which is actually based on previous literatures and studies.

Regarding this purpose, we assessed in this study using the following hypotheses for strengthening the connection between research and teaching:

- H<sub>1</sub>. Research-teaching linkages will improve students' critical thinking.
- H<sub>2</sub>. Research-teaching linkages will improve students' problem-solving ability, which consequently will help them in any vocation route they take on.
- H<sub>3</sub>. The significance of research for the quality of teaching can guarantee that the terms of higher education research maintain student learning skills so that it can improve student's accomplishment of research for graduate and undergraduate students.
- H<sub>4</sub>. The connection of teaching and research can assist lecturers to teach with enthusiasm.
- H<sub>5</sub>. The connection of teaching and research can assist lecturers to trustworthiness and reputation.
- H<sub>6</sub>. Connecting teaching and research will assist lecturers' exposure and adapt a constructive and interested method to learning.

### 3.2. Survey Instrument

The aim of the present research is to discuss the influence of a research-based environment on teaching quality, and presenting a deeper comprehension of the connection, so that reviews and opinions can be proposed to enhance the teaching and education methods, and, in particular, enhance students' learning capability.

The used method for data collection and analysis is a mixed method, including both quantitative and qualitative methods. The first stage is the questionnaire; which was aimed to measure the first three hypotheses.

Out of 150 targeted alumni, only 129 act in response to the questionnaire. The respondents (alumni) were provided with a list of 6 questions; 2 questions for each of the first three variables. The participants were asked to indicate their perception on a Likert scale (1- 5) with responses ranging from strongly disagree to strongly agree. The collected data was analyzed based on correlation and regression analyses using the statistical package for social sciences (SPSS) version 17 computer program.

The survey questions expected to verify whether the alumni felt the university research courses provide them with enough research experiences and assisted them to gain the skills and qualities needed to search and find a required job, perform well in the job and constantly evolve in research field.

The selected alumni communicated by email, querying for their contribution and clarifying the aim of this research. The email contained a link to the questionnaire, which was held online, on a Google form. The distributed surveys were closed questions, using a Likert scale (de Vaus, 2002). It was important for the research that the survey members should have graduated recently, and should have new skills for research gained at their institutions which they could refer to. It is also significant that they should be in their career, as this research questioned alumni to reveal how effectively they may utilize their research skills and related qualities within the workplace.

During the second stage we were interested to measure the last three hypotheses of the proposed framework by carrying out a semi-structured interview with 6 selected faculty from different universities to discuss the results of the questionnaire and to accomplish comprehensive information about the hypothesis that may affect faculty performance and how may they apply research in teaching classes.



#### 4.2. Regression Test

Six questions were asked to measure the associations between the independent variables: Students Accomplishment Research, Students Problem Solving, and Students Critical Thinking with the dependent variable: Enhance Students Learning.

The results are presented in Table 2:

Table 2: Regression Analysis 1  
ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.256	3	8.419	181.990	.000(a)
	Residual	5.782	125	.046		
	Total	31.039	128			

Predictors: (Constant), Students Accomplishment Research, Students Problem Solving, Students Critical Thinking  
b Dependent Variable: Enhance Students Learning

The  $F= 181.990$  which is  $>1.9$  and  $Sig= 0.000$  which is  $<0.05$ . Therefore, we will accept the Alternative Hypothesis (H1, H2 and H3), which means the above independent three variable strongly depend on the independent variable (Enhance Students Learning).

The third table shows the second regression test. Another six questions were asked to measure the associations between the independent variables: Constructive Method of Learning, Teach with Enthusiasm, Teach with Trustworthiness with the dependent variable Enhance Teaching Quality.

The results are presented in Table 3:

Table 3: Regression Analysis 2  
ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.638	3	9.546	409.785	.000(a)
	Residual	2.912	125	.023		
	Total	31.550	128			

a Predictors: (Constant), Constructive Method Of Learning, Teach With Enthusiasm, Teach With Trustworthiness  
b Dependent Variable: Enhance Teaching Quality

The  $F= 409.785$  which is  $>1.9$  and  $Sig= 0.000$  which is  $<0.05$ . Therefore, we will accept the Alternative Hypotheses (H4, H5, and H6, which means the above independent three variables strongly depend on the independent variable (Enhance Teaching Quality).

## 5. Conclusion

Higher education lecturers' research and chances for position in the research practise will associate directly with the quality of teaching and, consequently, with student results.

For this purpose, higher education institutes must have research-based backgrounds that encourage and improve lecturers' research and that accelerate chances for lecturers' involvement in the research process. The lecturers' engagements with research will assist them in dealing with advanced developments in their educational topics and on actual instructional methods to update their academic content understanding.

An assumption that research sustains and enhances teaching quality would mean that lecturers' research interests improve student learning or give related advantages, and firming the research-teaching connection indicates improving the research backings teaching in this purpose. The assertion is that each lecturer should have the interest, skills and experiences to be involved in research and analyse actions when the occasion occurs, and that higher education institutes should offer the type of research-based ambiance in which a lecturers' research knowledge is adopted and maintained, and where occasions for research situations normally and regularly occur.

It is definitely satisfactory to propose that lecturers for higher education institutes take advantage of their research proficiency in lecturing by applying inductive methods. Experienced faculty researchers could use the methods they already applied in their academic events and convert them into an inductive teaching atmosphere by using components of their specific articles or selecting experiments more suitable to the topics and stages of the courses they are lecturing.

Although a number of studies have found the notion of research-teaching connections are weak and that the faculty research efficiency is not necessarily enhancing students' learning. Furthermore, many faculties, when inquired of regarding whether their research affects their ways of teaching or not, they will indicate that the method in which their research results are unified into their lecture progresses. Nevertheless, there are numerous more advantages to connecting research-teaching approach than only students' learning. Students may become skilled about research methodologies and practices, carry out their own assignments, and work as a team and backing their colleagues with their research (Jenkins et al. 2003). Therefore, there are several purposes calling us to consolidate the research-teaching connections.

This study, in order to strengthen the connection between research and teaching for the purpose of student's advantages, considers that the straightforward direction of the enhancement is obvious. Students should utilize exceptional occasions and resources obtainable at institutional research-teaching connection programs. Such unique and capable programs should provide their students an element of skills, knowledge, and proficiency which may not be obtainable anywhere else, and a significant research method.

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