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Teaching Research Methodology the How and Why: The Role of Methods of Teaching in Preparing Future Researchers

ماهية و كيفية توظيف مناهج البحث العلمي:
دور أساليب التدريس في إعداد الباحثين في المستقبل

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Abstract

Research methodology is one of the most important disciplines in relation to teaching English as a foreign language. It is of a great importance since it helps learners at different levels in the domain of their studies to enhance their performance. This paper focuses on knowing the essence of research methodology as a standing discipline and as a key factor in the field of research. It also tries to tackle the strategies used in order to raise the interest of learners to grasp the rules readily and to know how to apply them effectively. Moreover, it casts light on the methods of teaching and their relation to research methodology and the ability to apply them in the classroom setting when doing research and how we can best apply such methods on research methodology to get fruitful results. All in all, this study is a field work that tries to look over some elements that are crucial in the teaching of academic research.

Keywords: *Teaching research methodology, its purpose, techniques, methods.*

ملخّص:

تعتبر منهجية البحث واحدة من أهم التخصصات فيما يتعلق بتدريس اللغة الإنجليزية كلغة أجنبية لأنها المفتاح نحو تخصصات أخرى باعتبارها تشكل المعلومات وتنظمها في إطار مقبول. و هي أيضا من الأهمية بمكان كبير لأنها تساعد المتعلمين على مختلف المستويات من خلال ارتفاع وعيهم وتمكينهم من تعلم أساليب وتقنيات جديدة في مجال دراستهم لتعزيز أدائها.لذلك فإن هذا المقال يركز على معرفة جوهر منهجية البحث كتخصص له مكانته وكعامل رئيسي في مجال البحوث. كما يحاول معالجة الاستراتيجيات المستخدمة من أجل زيادة اهتمام المتعلمين من خلال فهم القواعد بسهولة ومعرفة كيفية تطبيقها على نحو فعال. وعلاوة على ذلك، يركز هذا البحث على طرق التدريس وعلاقتها بمنهجية البحث والقدرة على تطبيقها في الصف الدراسي عند القيام بأبحاث وكيف يمكننا تطبيق هذه الأساليب على منهجية البحث للحصول على نتائج مثمرة. إذن سنحاول أن نشير إلى بعض العناصر التي تعتبر في غاية الأهمية عند تدريس البحوث الأكاديمية.

كلمات مفتاحية: تعليمية منهجية البحث، أهدافها، تقنياتها، منهجياتها.

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1. INTRODUCTION

Research is a logical and systematic search for new and useful information on a particular topic. It is the investigation of finding solutions to scientific and social problems through objective and systematic analysis. Research is carried out through study, experiment, observation, analysis, comparison, and reasoning. It is done in order to solve new problems, events, phenomena, and processes which occur every day. Thus, research enables us to make new inventions and find new theories. This research is not done haphazardly; it needs some systematic ways in order to end up with fruitful results. For that, and because of the importance of academic research methodology, how to conduct it, and how to teach it, we are going to focus on how to teach academic research using new ways taking into consideration the practical aspect which provides both students and research methodology teachers with fruitful results because previous studies suggest that students often find such modules challenging and difficult to relate to. We hope to recommend a number of different approaches to lessen these difficulties and to improve the student experience of research methods subject matter.

2. The Essence of Research Methodology

Research methodology is a way to systematically solve the research problem. It is the science of studying how research is conducted scientifically. In research methodology, the different steps that a researcher follows to do his research and the logic behind them are studied (Rajasekar, Philolminathan, Chinnathambi, 2006, pp. 2-3).

2.2. The Difference between Research Methods and Research Methodology

There is a slight difference between research methods and research methodology although the majority use both of them to mean the same thing.

Research methods are the various ways, procedures, schemes, etc… used by researchers in research. They are essentially planned. They include the different approaches in order to help us collect samples, data, and to find solutions to problems.

On the other hand, scientific research methodology is a systematic way to solve a problem. It is the science of knowing how research is to be conducted. Thus, research methodology is the way by which researchers go about describing, explaining, and predicting their work. It is also defined as: the methods by which knowledge is gained. The aim behind research methodology is to give the research a work plan.

As a result, a research methodology helps us to provide a solution to a problem. However, research methodology deals with the following:

- The reason behind undertaking a particular research study,
- How the research problem is formulated,
- The types of data collected,
- The particular method which has been used,
- And why was a particular technique for analysing the data favoured than others (Rajasekar, Philolminathan, Chinnathambi, 2006, pp. 2-3).

In short, research methods or techniques refer to the methods the researcher use in performing research operations. In fact, it encloses all the procedures and strategies that a researcher follows in conducting his research from the very beginnings such as; writing the research proposal until putting everything into practice and fulfilling the research project.

3. Strategies used in Raising the Interest of Learners (Motivating Students)

Research can be one of the most interesting features of any degree course as it offers the learner a measure of control and autonomy. It gives the learner an opportunity to confirm, clarify, and pursue or discover new aspects of a subject the learner is interested in. Among the general effective learning strategies which are used in raising the interest of learners and helping them to better regulate their learning, Cognitive and educational psychologists suggest a number of strategies to enhance students' motivation. One thing to be considered is the expectancy –value theory which relates motivation of students to engage in an academic task to their expectancy for success and the value that they have attached to a specific task. The aim of this theory is to make students apply reasonable effort and appreciate the value of the learning activities which lead them to success. In fact, this theory may be applicable if we focus on two things: course design and the instructor's behaviour.

3.1. Course Design

"Students respond positively to a well-organized course"(Davis, 1993, p. 2).

It is important for teachers to be mindful of how they should organize their courses and the methodologies used which can greatly affect the students motivation to learn. The strategies considered when planning the course are as follows:

- Set the tone early in the semester. (used on the first day of the class or when introducing a new course). The syllabus should reflect three main elements; learning objectives, course goals, and students expectation for the course. To make students achieve their goals, the instructor should communicate explicitly with them. Conducting class surveys or administering diagnostic tests on what students already know about the topic rise the curiosity which results in an enthusiastic introduction of the course.
- Give students options in the classroom. This strategy empowers students and develops their skills for self-directed learning because students' motivation increases if they feel that they have control on their learning outcomes.
- Create assignments that are appropriately challenging. It is very crucial to consider students' interests, background knowledge, and abilities when designing coursework. For the purpose of providing students with early success, the degree of assignments and exams should gradually increase as the semester progresses.
- Make your lessons relevant. It is suggested by researchers that students will be enthusiast and have interest to the course if they can relate its components and activities to their daily lives. The key factor behind connecting the course materials to real world experiences is to make students value the subjects they are learning which enhances their performance and deepens their understanding (Davis, 1993).

3.2. Instructor Behaviour

The role of the instructor is to facilitate learning since he is the guide which follows students and try to make them achieve the goals that have been established. Therefore, he should control his behaviour because it has a visible and immediate impact on students motivation. The followings should be considered in order to ameliorate students learning in class.

- Show enthusiasm. The instructor is the overall tone in the classroom. So, he is the major source of stimulation who models the behaviour he wants. Thus, if the instructor is bored and uninterested in the course, students will react to that negative behaviour by duplicating it in the same way. In contrast, if the instructor is excited about the course content and its way of presentation and shows interest to teaching, he will maintain students' attention.
- Avoid excessive competition. Students like giving them opportunities to interact, yet creating a conductive environment among students will lead to divisions and comparison among students. Hence, these competitive classroom settings may lead to anxiety which is against achieving the goal of motivation.
- Communicate an expectation of success. The way of interacting with students is a good tool for stimulus. For example; if the instructor uses students' names in class, this will awaken their ability to enhance their performance since subtle forms of behaviour can be a powerful influence on students' performance.
- Provide constructive, timely feedback. Students are always willing to know about the hard work and effort they put in their classes. For that, it is worth returning their assignments on time by communicating their positive and negative feedbacks in order to encourage them to strive for more. If students are not given their feedback and the explanation of the reason behind considering something correct or wrong, students will not make any effort to succeed and they will be lost about which direction to choose (Davis, 1993).

In a nutshell, the instructor can create conditions that encourage engagement and motivation to learn on a variety of levels through the instructor's behaviour, i.e., course design and teaching practices because this can greatly stimulate students motivation to learn both in the classroom and with the overall subject matters.

4. The Relation between Methods of Teaching and Research Methodology

The study of research methodology gives the students the necessary training in gathering material and organizing them. It makes them able to participate in the field work when required. It also helps them in gathering data for particular problems, and in the use of some techniques such as; the use of statistics, controlled experimentations, and recording evidence. Thus, the importance of knowing research methodology by learners is the key factor that results in a good academic research.

4.1. Student-Centered Teaching Method

Student, or learner, centered approaches to teaching have emerged from changing understandings of the nature of learning and, in particular, from the body of learning theory known

as constructivism. In the broadest terms, constructivist learning is based on an understanding that learners construct knowledge for themselves (Hein, 1991; Krause et al, 2003).

As Maypole and Davies (2001) have observed, constructivist theories have philosophical, psychological and epistemological orientations. One of the key distinctions within this broad theoretical 'camp' is that between cognitive and social constructivism. Cognitive constructivism is based on Piaget's model, which emphasizes the interaction between the individual and their environment in constructing meaningful knowledge, whereas social constructivism - attributed to the work of Vygotsky which emphasizes the importance of student learning through interaction with the teacher and other students (Maypole & Davies, 2001).

The principal implication of constructivist understandings is that students are the key initiators and architects of their own learning and knowledge-making, rather than passive 'vessels' who receive the transmission of knowledge from 'expert' teachers. This approach 'student-centered learning (and teaching)' has itself been variously defined as a process by which students are given greater autonomy and control over the choice of subject matter, the pace of learning, and the learning methods used (Gibbs, 1992), a mechanism for higher education reform, by which students have individual control over higher education finance via a voucher system.

Weimer (2002), who is concerned with learner-centered teaching as an exercise in changing teaching practice. Specifically, Weimer identifies learner-centered teaching as encompassing five changes to practice:

- ✓ shifting the balance of classroom power from teacher to student;
- ✓ designing content as a means to building knowledge rather than a 'knowledge end' in itself;
- ✓ positioning the teacher as facilitator and contributor, rather than director and source of knowledge;
- ✓ shifting responsibility for learning from teacher to learner; and promoting learning through effective assessment (Krause et al, 2003).

Student-centered approach was to enhance students' experiential understanding of the complexities and creativity of conducting effective research. In reality, student centered instructional methods include discussion, group work, role-playing, experiential learning, problem based learning and case-method teaching.

As a result, utilizing teaching approaches that encourage students' active and experiential engagement with the subject matter (and with each other) has the potential to be extremely effective, in terms of student satisfaction and class performance. This is particularly notable in the context of a research methods subject, given that research methods is traditionally considered to lend itself to more didactic approaches where vast amounts of technical information are transmitted from teacher to student.

4.1.1. Drawbacks

The student-centered teaching model puts students between two poles being active learners and without really unpacking what constitutes an active learner. In my experience, students participate in their own learning in a diversity of ways, and these are not always clearly observable as 'active' learning in the classroom.

Student-centeredness provided the orienting focus for the subject, some of its greatest learning value appeared to lie in the way in which that was effectively integrated with more didactic teaching practice. In this sense, class content was both a knowledge resource and a mechanism by which students developed their own knowledge further.

One of the key strengths of this approach is that it allows students to build common experiential ground, which provide a shared base for engaging with more technical aspects of the subject matter. This is increasingly important in higher education contexts where flexible learning pathways are producing diverse student cohorts with no, or highly limited, common learning experiences (Krause et al, 2003).

4.2. Learning by doing Research Method

Using student-generated hypotheses for the purpose of teaching research and reporting methods fosters motivation, interest, and above all a deeper understanding of research results. It is considered as the first step in the method called 'learning by doing' (as cited in Aguado, 2002). In fact, the early partnership between professor and student in the hypothesis-generating process allows for the type of collaboration that continues throughout the semester or even the whole year. The collaborative nature of the exercise also allows certain aspects of the research to be designed specifically to meet course requirements and expected results.

As an instructor, I want to encourage students to explore their interests, but I also need to maintain enough control for course goals to be met. This is done through the second step which is related to the literature review which offers the instructor an opportunity to expose students to online archives which are crucial in the conduction of research.

Data collection is the third step towards fulfilling a good research but it is the most difficult for students. Data gathering is a very important and exciting component of the "learning by doing" teaching method. The obstacles students encounter teach them that this is a difficult step of the process - one where researchers are often forced to make compromises due to lack of accessibility, time constraints, and limited resources.

The fourth step is data analysis. It gives students the ability to apply many of the skills that they learned from the workbook.

The fifth and last step is putting all the information together. Each step serves as a component of the final research step (paper) (Weingast, 1995).

In fact, this research method is very useful as many scholars pointed out through lot of successful experiments because doing anything in this life and especially in educational domain entrenches information and the ways which have been used in order to accomplish a given project. So far, this is a very useful method of teaching research methodology.

5. Applying Methods of Teaching in Classroom Settings When Doing Research

"I hear and I forget. I see and I remember. I do and I understand." - Confucius

It has been acknowledged that students have learning difficulties with research methods module to other modules or to real life situations. In fact, trying to direct students to an area of research from which it is likely to benefit is one of the key techniques in doing research. Thus, learning by doing method especially active cooperative learning is very rewarding for students.

In applying the method of active cooperative learning in the classroom settings when studying (teaching) research is done through following five phases of student-group research projects.

Phase 1: *Research question generation.* Here, the instructor introduces the general research problem and each group brainstorms some research questions for their group to investigate. The instructor facilitates the brainstorming process in classroom discussions then students refine their ideas by reviewing the relevant research literature out of class.

Phase 2: *Research design.* Once the research questions are confirmed by the instructor, the second phase starts. The students review the literature which offers the instructor an opportunity to expose students to especially online archives which are crucial in the conduction of research. Through literature review, students intend to focus in their readings on the methodologies. In this phase, the instructor interacts directly in each small group to guide key decision and consideration. It is worth noting, that the instructor may attract students attention through giving a ten to fifteen minutes instructions that all groups need in their research design. At the end of this phase each group gives the instructor a formal proposal for approval.

Phase 3: *Data collection.* The activities which are followed in the data collection phase vary from one research methodology to another. Data gathering is a very important and exciting component of the "active collaborative learning by doing" teaching method. The obstacles students encounter teach them that this is a difficult step of the process. Once collected, data are coded, collated, and entered into a data file for statistical analysis.

Phase 4: *Data analysis*. This phase is the most important and the one which demands guidance of the instructor. Each group spends time in preparing the data file for analysis discussing the statistical analyses required, conducting the appropriate statistical tests, and interpreting the resulting findings with the guidance of the instructor. The instructor should make sure that all the members in each group understand their findings or the lack of findings before he allows them to carry on with the final phase.

Phase 5: *Research presentation.* Here, some formal presentation techniques and requirement such as; APA publication style, scientific writing, PowerPoint slide layout, and oral presentation skills are provided by the instructor to the whole class. Two members from each group have a twenty minute oral presentation to the whole class. The group presentations are considered as a simulated conference session followed by ten minutes open discussion where the instructor acts as the chair of the conference session. After the conference session each group is required to write the findings as an APA-style report which will be assessed by the instructor (Ball & Pelco, 2006).

In short, it may be noted that applying these phases step by step in doing research through the method of active collaborative learning gives students the ability to perform the knowledge they are learning especially with the presence of the instructor who serves for giving instructions and guidance to the students. In reality, following these instructions result in good and fruitful results.

6. CONCLUSION

In conclusion, it is worth mentioning that the strategies used in motivating students and raising their interest, the useful methods of teaching, and their application in classroom settings especially with the due guidance of the instructor make both the students (as learners) and the

teachers (as instructors) get fruitful results which may be applicable in different settings and when dealing with different types of research. Moreover, it is beneficial for students to feel that they are actors who perform the steps of conducting the academic research and achieving it gradually as if they are performing on a stage in front of the audience who is their classmates. As a result, the one who succeeds in doing research and following the guidance of the instructor accurately will succeed in performing real and future researches all over his career.

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