ASSESSING ONLINE COURSES IN RESEARCH METHODOLOGY

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Abstract:
The present inquiry probes in the outcomes of the online course in research methodology taught online under Covid-19 condition to undergraduate students at the Faculty of Arabic Language (FLAM), Cadi Ayyad University (UCA), Marrakech. Basing on learned conceptual frameworks and previous studies related to practices and strategies of teaching research methodology online and in-person, the study reports on the methodology implemented in disseminating the course including description of the objectives and the components of the course such as digital lectures, interactive practices and quizzes. The course is displayed on Canvas as a LMS (Learning Management System), hence Canvas software provides possibility to track the learners performance on the online quizzes exploiting Analytics tool inherent in the website. Equally important is the comparison between the scores of the students achieved on digital quizzes and those achieved in on-campus exams. A crucial section of the research analyses the feedback of the students having followed the course online. They are surveyed after the final term exams. The paper’s conclusion reflects on recommendations for the practitioners and field decision makers concerned with strategies of teaching and evaluating online courses in research methodology.

Keywords: Research methodology, evaluation, analytics, LMS, distant teaching.

Introduction
The advent and spread of COVID-19 all over the world has brought changes to pedagogic assumptions and practices in different areas of education. The language education has equally been influenced by the lockdown imposed by the health measures widely adopted by the educational authorities. Teaching and learning academic subjects moved online wholly or partially, adopting different strategies such as flipped classroom or interactive synchronous systems. Practitioners as well as learners have resorted to existing methods and practices and devised innovative ones exploiting smart gadgets and highly performing computers. Social media are bursting with stories of successes and needy endeavours. The present paper exhibits an experience in teaching and learning research methods online. The objective of this online course has been to build the learners’ capacity in designing, structuring and implementing end of study researches at the Faculty of Arabic Language, Cadi Ayyad University, Marrakech. All the stages of the courses have been conducted in distance, including the evaluation of the learners learning performance. The procedure is supplemented with on-campus final term exam. The dissemination of the lectures and quiz assignment were displayed through LMS (Learning Management System) Canvas. The overarching question guiding this research is put simply the following way
Q: How successful has been the online course in research methodology during lockdown imposed by Covid-19?

To build a picture of pedagogic practices in this arena, the different components of the course are highlighted and studied starting with the objectives, course design and scheduling. In addition to quiz construction and students’ performance and feedback. Equally important is
the analysis of the learners’ perception of their experience in learning research methodology online. Accordingly, this paper’s layout unfolds methodically to display the following structure, the first section tackles the literature framing the teaching of research methodology. The following section displays the steps adopted in the course along with the contents disseminated and the way it is graded and organized. The next part is based on the analysis of the students’ behaviour on Canvas. The results of the analysis is displayed by Canvas Analytics. The learners’ performance on online quizzes is compared with the learns’ on-campus exam scores to extract the level of engagement and the quality of the learning acquired. The final section analyses and interpret the perceptions of the surveyed learned having studied research methodology in distance.

LITERATURE REVIEW

The present section reviews previous studies to see how Kilburn et al (2014) conducted a literature review of over 800 articles to ‘garner insights into how methods teaching was conceived of, enacted, and reflected upon by practitioners’ (p.197). available to inform the practices in teaching and learning research methodology in person in general and in distance in particular. Methods modules in university education requires additional intellectual effort both on the part of the instructors and students; expertise in the field requires “theoretical understanding” and “procedural knowledge” on equal foot (Kilburn et al., 2015, p. 19). Furthermore, different academic disciplines call for mastery of varying procedural skills, methods and techniques (Nind et al., 2019, p. 798)

Methodologically, the methods learning literature is characterized by small-scale, time limited, single cohort studies that focus on specific methods or disciplines … Such research, though valuable, remains largely bounded by discipline, method and cohort. Such dynamic aspect of methods pedagogy prevents availability of unanimously approved syllabi. This may be observed when one compares between resources in the field of research methodology. “Within this challenging context, efforts to accelerate the development of methodological expertise have not always been informed by pedagogic research, principles and theories”.

Such challenging context has not yielded ample research in methods modules, hence slackening development in the pedagogy of methodology. This fact of scarcity of methods pedagogy extends to online research methodology as well. Basing on the latter assumption that online research methods teaching has much in common with in person education, this study probes into good practice recommended by research review conducted recently.

Pedagogy of Teaching Research Methodology

In 2017, the Institute of Teaching and Learning Innovation at the Australian Queensland University reviewed the literature worldwide and existing studies in search for appropriate practices in teaching research methods. The existing studies reviewed were incited “the need to alter teaching practice from principally lecture-based to active and authentic learning strategies” (Groessler, 2017, p.2). In filtered studies, the report displays a list of challenges which impede both educators and learners across disciplinary boundaries. On the basis of such findings, the report underlines core principles to achieve deep insight into pedagogically consolidated strategies (Groessler, 2017, p.6); these principles include:
Learner Characteristics and Challenges

- Anxiety or aversion towards quantitative methods (many students feel ill-prepared for the mathematical component)
- Students fail to see the relevance of the course to their major and their lives
- Students are typically anxious or nervous about the course and its difficulty
- Students are uninterested and, therefore, unmotivated to learn the material
- Students come to the course with poor attitudes towards, or misconceptions about, research
- Student diversity results in culturally diverse perceptions of what constitutes research
- Varied levels of student competence and confidence in second or third languages
- Few undergraduate students are actively seeking careers in academia; hence most students see little value in learning skills they perceive as relevant only to research in their discipline

Educator Characteristics and Challenges

- Lack of research on assessment and what and how students learn in research methods courses
- Research is a complex domain involving a combination of procedures and definitions, many of which the ‘academic community itself has no uniform conception of’ (Lehti and Lehtinen, 2005, p. 218 cited in Early, 2014)
- Lack of ‘pedagogic culture’ (Wagner et al., 2011) in research methods teaching and little guidance available to teachers
- Teaching by methodological experts who do not have a pedagogic background
- Difficulties with teaching the complexities of research methods to students who are new to research
- Instructors must somehow demonstrate interrelated tasks and complexities so that students new to the research process (and those not typically majoring in research methodology) can understand and ultimately apply the approaches

The assumptions listed above are plain, clear and need no clarification. As a research methodology teacher, I do adhere to the results of these reviews since these hindrances are the same which prevail in the local educational environment. However, it is worthy to note that the hindrances may appear of varying importance and seriousness in different educational setting and different educators with different professional background.

To alleviate the impact of the hindrances highlighted above, the reviewing researchers (Kilburn et al, 2014) derived a set of principles which stems from their analysis of hundreds of experiences in teaching research methodology to guide practitioners in applying pedagogical strategies. These principles gear the educators and learners’ research methods practices to align with the most fashionable and learned pedagogies. These recommendations are fostered to underly research methods teaching and learning performances. They recommend research methodology courses to incorporate instances of (Kilburn et al, 2014):

~ **Active learning** through connecting learners to research
~ **Authentic learning** through immersing students in doing actual research
~ **Reflexive learning** and through critical analysis of applied methods and learner-educator co-authoring research projects.

All the three principles reinforce the **pedagogic culture** through ‘the exchange of ideas within a climate of systematic debate, investigation and evaluation’ (Wagner et al., 2011, p.
Nurturing pedagogic culture in the institutional context enhance sharing experiences of successes and challenges in research methodology practices.

The specific objectives of this pedagogically and scholarly founded strategy is to ensure the learners’ inclusion and active building of knowledge in research methodology. It can be summarized in two main caveats for success, learners’ autonomous learning initiative and communal assessment accountability. The strategy employs processes to lead learners to knowledge discovery rather than knowledge memorization and evaluation poses on critical thinking rather mere knowledge retrieval.

**Pedagogy of Teaching Research Methodology Online**

Though the online education shares numerous features in common with on-campus education, delivering courses from distances poses further variables to consider and assess by pedagogy. Hence, monitoring in the online educational environment and performing on interactive activities require further assets on the part of educator and learner, respectively. The more variables come into play, the more challenges arise and needs strategies. For example, physical classroom is managed by present attendees while the virtual environment is designed and governed by digital management tools and deives where the participants become distant and displayed into numbers and avatars.

One of the most notable aspect of learning online is flexibility. Self-paced learning processes and the ‘asynchronicity’ stimulating “deeper reflection about contents” are major advantages of online education which enhance learner’s engagement.

A cornerstone of pedagogical. This section discusses possible frameworks of designing and evaluating online courses in research methodology taking into account the assumptions tackled up to now in this paper. In terms of design of online course in research methodology, this paper adheres to the newly published work, “Teaching Research Methods Online” by Seligman Ross (2020).

In the chapter entitled ‘Creating the Research Methods Syllabus’, Seligman (2020, pp. 5-20) states the components to incorporate in a course; the onset section displays general information about the educator, the institution and department. The subsequent syllabus component describes the Course followed by statements of student learning outcomes. A textbook can be identified to guide students through their project. Then comes the class schedule, including the Outline of the Course, the Final Project, Deadlines for the syllabus, assignment descriptions and grading policies final exams description and modeling. The course unfolds over 16 weeks, mixing both lectures, reviews, assignments and short-term empirical studies.

Online teaching course in research methodology is tackled in an exclusively devoted chapter. Seligman proposes two project-based procedures. In one procedure, the learners carry out full experimental research and write it up by the end of the course. The educators should have about 50 hours available to set up this course, recording videos and creating varying types of assignment such as quizzes, presentations, discussion posts and papers. Special weight and grade should be assigned to each type of activity (Seligman, 2020, p. 97).
To conclude this review of previous studies and conceptual framework, it is worthy to note that to teach online courses in research methodology involve further constraints to be managed by both teachers and learners. Much of what is highlighted above applies to the context where the experience depicted in the following chapters.

ASSESSING ONLINE COURSES IN RESEARCH METHODOLOGY AT UCA

The present section intends to discuss online courses in research methodology conducted on Canvas for the benefit of undergraduate students in their final year term at the Faculty of Arabic Language, Cadi Ayyad University, Marrakech. The course calls for specific performance on the part of both the educator and the learner. Hence, evaluation occurs on both levels or sides of the educational operation, teaching practices and learning performance. Benigno& Trentin (2000, p. 3) reflect on evaluating online courses as follows.

Evaluating online courses poses a series of issues at various levels. Two aspects are of particular significance: the first is evaluation of learning, and the second is evaluation of the participants’ performance, both in terms of time spent online and activities effectively carried out at a distance, either individually or during computer conferencing.

The focus is on the peculiarities that distinguish online course evaluation from traditional course evaluation procedures. The first step concerns a succinct description of the online course, namely the organization and management of the content into modules and the way they are disseminated, including instructions and assignments. To determine the effectiveness of the learners’ performance on the website embedding the research methodology course, the database learning analytics is exploited to gauge the profitability of the teaching and productivity of the learning. Further assessment of the efficiency of the online course in research methodology stem from analysis of the feedback of the learners themselves on a survey submitted to the learners having learned and performed on the online course in research methodology.

Specifications of the online course in research methodology

The first lecture introduces the learners to the objectives, methodology and syllabus of the course in addition to the textbooks as resources of the course. The introductory lecture is
delivered on-campus using PowerPoint slides and shared online on Canvas, the free learning platform.

![Components of Online Course in Research Methodology](image)

*Figure 3. Components of Online Course in Research Methodology*

The first lecture in the course makes salient the following points:

I. **Rationale:** Why study *Research Methodology*?
   1. Needed to complete the end-of-study project.
   2. Initiation in the practices of the scientific research as a career.

II. **OBJECTIVES:**
   1. Course provides theoretical insight and practice in comparing between methods, techniques and procedures used in scientific research operations.
   2. Course initiates students into criteria of producing quality research paper in terms of:
      i. Reliable knowledge.
      ii. Systematic organization of knowledge.

III. **COURSE METHODOLOGY:**
   1. Students view course videos on research methodology on Canvas online.
   2. Students do interactive course-related quizzes on Canvas.
   3. Students reflect on course & quizzes’ content in forum space on canvas.
   
   Student groups meet alternately in class for further practice and discussion

The Course Syllabus is divided into three main chapters comprising components reflecting the research process steps

**Introduction**

1.1. Types of Research.
1.2. Methodology, Methods and Techniques.
1.3. Criteria of Scientific Research.

2. **Research Process**

2.1. Formulating the Research Problem.
2.2. Reviewing Literature.
2.3. Constructing Hypotheses.
2.4. Collecting Data.
2.5. Processing and displaying Data.
2.6. Interpreting Results.

3. **Writing Research Report**
As for the textbooks, two main resources are selected for the student rely on for consult. These are:


Each lecture video is accompanied with a series of graded interactive quizzes. The question formats of the quizzes vary from multiple choice to filling the blanks with the term from the lecture, matching to essay question. The quizzes are graded from knowledge recognition question to more challenging application practices. Following are specimen of questions:

![Quiz Example](Figure 4. Examples of Quiz Formats)

The course wrap-up takes the form of a mock exam and discussion on a video conference. Each three weeks during Covid19 lockdown, the learners and educator meet to analyze in deep the missing or unfathomable aspects of the issue or method.

**Digital assessment of the online course in research methodology**

Canvas platform helps track and evaluate the learners’ performance and engagement through the Learning Analytics tool inherent in the platform system. The following definition is provided in Cavas platform to introduce users to the learning analytics:

New Analytics is an interactive tool that helps you and your students better track performance and activity within the course. Learn which students have viewed pages
and resources and participated in assignments—and which students may need a little more encouragement. (Canvas.instructure.com)

The “learning analytics is the collection of data about a student’s academic performance, and analyzing it to derive trends and patterns that reveal areas which need improvement”. Dani Vishal (2019) states five benefits of using learning analytics to develop online learning model.

- Track students who are academically weak
- Track the engagement level of students
- Provide customized lesson plans/self-paced learning as the quizzes don’t require immediate responses.
- Measure and Compare Students’ Performance using Learning Analytics in Education: Inform the educator about the course itself or difficulty in understanding of a particular item within the assignment. On the basis of the report provided by the learning analytics, the course can be redesigned or modified.

According to the learning analytics in the online course in research methodology, the educator can either extract graphs depicting the overall performance of the learners in the course or study the performance of individual students on a particular item. Following are reports on my students’ performance in online course in research methodology.

**Figure 5. Analytics overall report on Students’ Grades**
This concerns the overall performance of the students on Canvas. No due date is set for the quizzes under Covid19 condition, but the attempts are limited to 5.

**Figure 6. Analytics overall report on Students’ Activity**
The weekly online activity charts depicts the number of students who have been active on specific pages. It shows that most of the students have viewed all the pages and the assignment have been done in varying degrees.

![Figure 7. Analytics overall report on Students’ Scores](image)

The average score of the students in the quiz where the learners practice articulating hypotheses is 46%, but it is important for me to know that the low score is 11%. More important is the report on individual items as it displayed in the following chart:

![Figure 8. Analytics of Students’ Responses](image)

This example of question breakdown displays minute details about the learners’ achievements and missed assignments. The educator can retrieve the achievements and inactivity of individual students all over the course, daily or weekly.
Teaching research methodology online benefits as much as different courses do from the digital systematic tools embedded in the educational platform such as Canvas.instructure.com. Among the benefits drawn from the teaching online of research methodology is the immediate and instantaneous tracking of the activity of the learner on the platform and the ongoing assessment of the course and learning development. The positive results extracted from the Analytics are to be compared with the evaluation of the learners themselves of their experience in learning research methodology online. This is the focus of the next section in this paper.

The learners’ evaluation of the online course in research methodology

To consolidate the present research in assessing the pedagogical effectiveness of the online course in research methodology, the perspectives of the learners are brought into play. The learners having experienced the learning of research methodology in distance are surveyed and their responses are brought into analysis in the present section.

57 students out of 69 have responded in the questionnaire. 69 is the total number of learners enrolled in the 5 term of Arabic language and modern languages studies delivered at the Faculty of Arabic Language (FLAM) affiliated to University Cadi Ayyad (UCA), Marrakech, Morocco. The electronic questionnaire was constructed on GoogleForm and disseminated to Semester 5 students through WhatsApp group of the class. The respondent remains anonymous, not collecting any proof that leads to their identity such as names, emails or registration numbers.
The registration in the studies in Arabic Language and Modern Languages course was exclusive to no age group. The sole requirement is the baccalaureate degree. For this reason, the majority, 28 over 57 of the students surveyed are adults beyond thirty years old. Only few of them full students, the majority are working people. This information is important in the way that working people acquainted with in-service evaluation strategies testing the degree of objective achievement, outcome and needs analysis at work. They understand that the present research is a case of reflective teaching and learning.

**Figure 11. The First Question on the Survey**

The onset question in the survey shows the position of the students towards having online courses in research methodology. They 57% opt for blended strategies, receiving digital coursework online, but in person interactivity is deemed appropriate to reach success.

**Figure 12. The Students’ Satisfaction with the Course**

What is striking in the response to the question about the degree of their satisfaction about the present experience in learning research methodology online is that the no one opts for the option “not at all satisfied”. This means that they are all satisfied and only 13/59 are partly satisfied.
The subsequent questions dig further and deeper into the impact of the present experience on the learners’ attitudes towards online courses in research methodology. The learners assert. The question asks the learners to rate specific technological tools in terms of the importance of particular technological tools to successful online courses in Research Methodology. Once again, the majority of the learners believe that all educational technology is very important to the success of the course. Based on their own experience at the Faculty of the Arabic Language, 41/59 of the students assert that the online interactive quizzes are most important followed by document format of the courses, then digital video and audio. It is true. In the beginning of the present experience, I used to record video lectures and devise interactive quizzes, but after some time, the students made a request for me to supplement the videos and the quizzes with PDF document versions of the video recorded lectures.

Whether the objectives have achieved is the focus of the following question.

50 students out of 59 believe that they have understood the differences between the methods through online courses and 29 out of 69 regard the objectives as being successfully achieved. The ability to organize knowledge systematically refers to the skill of designing research step by step to come out with a layout and clear sequenced chapters. Only 21 instead
of 29 believe that the objectives are successfully achieved. As an educator, this change in percentage though it is positive reflect the learners’ need in practice.

The result from the previous figure is in harmony with the result from figure. The learners are most satisfied with the module comparing the research types and least satisfied with organizing and structuring knowledge in a paper. However, the majority is either very satisfied or satisfied.

The satisfaction of the learners with the present experience in learning research methodology online is due to the following contents in terms of priority: Video Lessons, supplemented with PDF versions of the same lecture and practice in online interactive quizzes in condition that the quizzes are aligned with the contents of the lectures in the videos.
The learning assessment, either formative such as quizzes or summative such as on-campus final exams, should aligned with the contents taught. In the present experience case, the learners express their perspectives in the following figure.

Concerning the question formats in the quizzes and exam, the learners prefer multiple choice and filling the blanks most.

Conclusion:
  To conclude, teaching and learning research methodology in online courses is under-researched. For this reason, this research paper sets out to conduct a investigation in the degree of achievement in both learning and teaching research methodology in distance. The paper has addressed the issue from the theoretical point of view and learner perspective. Since it the course is managed in distance hosted on a learning management system, Canvas, it helps analysis of the performance of the learners and their reactions to the course assignments. The results shows that success of an online course in research methodology requires learned knowledge of the appropriate methodology to use in the course online. The course requires designing skills of digital contents and appropriate methodology of structuring and disseminating methods. The learners are surveyed and express their satisfaction of the digital
content, technological tools employed, implementation of interactive quizzes. Hence, research is to expand investigation in various environments and population.

Bibliography


