

Continuity and Collaboration: Two Missing Blocks in Scientific Research among Algerian Teacher Researchers (Case Study)

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Abstract

Scientific inquiry is a complex process that requires objectivity and rigour to achieve valid outcomes. In most developing countries, such as Algeria, researchers are attempting to produce high quality research studies through the employment of adequate tools and methodologies. However, there seems to be a prevalent reliance on individualistic contributions to research rather than collaborative work which affects both the quality and beneficance of their research findings. The present study investigates two important issues in conducting scientific research that are said to prevent Algerian researchers from developing scientific inquiry locally and internationally. These are set forth as collaboration and continuity. A sample of twelve university teacher researchers participated in this case study. They filled in a questionnaire that examined their views of the two aforementioned issues. Their answers revealed that collaborative research is not common practice among Algerian teacher researchers and that little reasearch is derived from previous colleagues studies and their findings.

Key words: scientific inquiry; collaboration; continuity; Algerian researchers.

1. Introduction

Research in the social and educational fields is said to be open to bias, reflexivity and lack of generalizability. This is because the object of the study is the human participant. The researcher is an insider and involved in both data collection and data analysis. Therefore, the quality of the research outcomes is questionable and prone to heavy criticism. In order to cater for some of these shortcomings, researchers in most developed countries collaborate and create research teams and associations to improve the quality and product of scientific research especially in human and social fields to achieve continuity. They believe that there is an ‘assumed positive association between collaboration, research output and research quality’ (Morrison, Dobbie, & McDonald, 2003, p.275).

Collaborative research or inquiry is a process in which educators or teachers work in groups to examine their educational practices in a systematic way using research techniques. The purpose is not to produce highly rigorous research results using sophisticated methodologies, it is rather an initial stage in professional development. It is contextual and concerned with local issues and therefore generalization of findings is not expected (Donohoo, 2013)

1.1 Background and development of collaborative research

Collaborative research models emerged early in the twentieth century in biology and physics. However, it was much later that it started to appear in the social sciences. The rise in collaborative research continued and ‘have become the most common way academics add to scientific knowledge’ (Hargens, 1975; Zuckerman & Merton, 1973; de Solla Price, 1963; Clark, 1987, in Morrison et al, 2003, p. 276). In the humanities, however, research remains mainly individualistic (Morrison et al, 2003)

Interest in collaborative inquiry came as a reaction to the limited outcomes of individual inquiry. Collaboration among researchers is now viewed as a means of professional growth. Cheruvelil et al.,(2014) and Kosmützky (2018) argue that: ‘High-performing collaborative research teams in higher education, either in the United States or internationally, can surpass individual efforts in research production output based on team dynamics and diversity’ (in Johnston, Burleigh and Wilson, 2020, p. 63). This stresses the crucial role team research plays for better quality research findings. In addition, Burroughs (2017) claims that: ‘Collaboration is a productive strategy for publishing research, an urgent concern for faculty recognition, tenure and promotion’ (in Johnston et al., 2020, p. 63). Thus, the need to publish in co-authorship is highlighted for universities and institutions to gain high ranking positions and compete for professional advancement.

1.2 Significance of the issue and context

Faculty members where there is lack of engagement in collaborative research, which is the case of most Algerian higher education universities and institutions, miss numerous benefits of connecting with other researchers to foster research skills and production. Compared to natural sciences,

colleagues in the humanities and social sciences are less likely to engage in collaborative research (Kosmützky, 2018, in Johnston et al, 2020). In addition, little research has been done about collaborative educational research especially in developing countries.

The necessity to engage in this type of inquiry, especially by educational teacher researchers, can be justified by the number of advantages it presents for them. Initially, it transforms the teacher from an implementer or a consumer of expert researchers' findings to a participant researcher of contextualized issues of core classroom concerns. This is because all members of a research project are involved and the rift existing in theory and practice between academics and researchers is overcome. Moreover, collaborative work results in the generation of valid and reliable theories and practices due to the contribution of 'different types of expertise from all collaborators' (Christianakis, 2010, p. 114).

The teacher as researcher trend became very popular and advocated by many scholars in education and in other disciplines. Teachers can embrace the role of researchers in a perfect way since 'they are insightful and knowledgeable in regards to current teaching practices and student needs (Blakemore, 2012, in Cantalini-Williams et al, 2015, p. 57). Besides, involvement in collaborative inquiry with joint contribution of teacher researchers will lead to improvement in teaching and research practices. Research programs that adopt communication, commitment and continuity when engaged in a research project will guarantee its success. It is a dual-role that teachers acquire and that empowers them 'to decrease the divide between knowledge construction and knowledge mobilization' (Kane & Chimwayange, 2014, in Cantalini & Williams, 2015, p.58)

What is worth mentioning is that teachers are conducting research projects in an era of high technological advancement, therefore, working in teams became common practice among teachers across the globe. This rapid and effective access to ICT facilities made it possible for teachers to join research teams and benefit from their experiences and research findings to understand phenomena and, in some case, to make generalizations and generate new theories.

In this paper, the issue of lack of collaborative research among Algerian university teachers in the humanities and social sciences is exposed and discussed. It is assumed that it is one of the main reasons behind low standard research productivity and ranking. Most scientific research is conducted by individual researchers starting from undergraduate research papers, magister or master dissertations to doctoral theses. Although these are individualistic worldwide, there seems to be no continuity in most research studies. Researchers investigate completely different issues and often do not consult previous, local research to draw on the results of previous colleagues studies or replicate others from a similar context. This, in fact, widened the gap between researchers and led to inconsistency and lack of compliance in conducting research among members of the same institution, university or

school. All these practices are the results of neglecting collaboration as a crucial factor in increasing scientific research productivity and quality.

1.3 Objectives and research questions

The study at hand aims to explore the main status of scientific research in the Algerian higher education context from twelve teacher researchers' perspectives. It also points out to the issues of collaborative research and continuity as missing blocks in the Algerian scientific research landscape, more noticeably in the social sciences and the humanities. These objectives are reformulated in two main research questions:

RQ1. What are the main reasons behind low quality and productivity of scientific research in most Algerian universities?

RQ2. To what extent are collaborative research and continuity common practices in these universities?

The next section will describe the methodology and setting of the present investigation.

2. Methods and participants

The approach adopted in this small scale research is qualitative given that the phenomenon under study is exploratory in nature. Qualitative research aims to understand the meaning behind the data. The participants' views and opinions are major sources of data that will possibly lead to the building of theory. Data analysis is more textual and interpretive and the researcher is an insider. Qualitative designs are evolving and dynamic rather than pre-planned and fixed which is the case of quantitative designs (Creswell, 2013)

The study addresses university teachers' views about the status of scientific research in our Algerian Higher Education institutions/universities and most notably, the issues of continuity and collaboration among the teacher researchers in these academic settings.

Twelve Algerian university teachers participated in this case study. Most of them (eleven out of twelve) teach in the Pre-service Teacher Training School in Algiers (ENSB); ten are teachers of English; one teaches psychology and another teaches didactics in Arabic. Only one teacher is from a different university (West of Algeria). Initially, the sample was larger; however, the number reduced due to low response rate.

The instrument used to gather data is the questionnaire for its practicality and reliability. It was designed by the researcher and sent to the teacher informants as a google form survey. It contains six questions; three are open ended and three are multiple choice questions (See Appendix A).

The first question of the online survey for university teachers inquires about the quality and amount of scientific research conducted in our higher education context. The second question requires from the participants to justify their responses to question one. Question three seeks to elicit the roles of the respondents in the field of scientific research whereas question four is meant to collect teachers' responses about the factors that contribute to

promoting scientific research in their institution/university. The fifth question aims to assess the teachers degree of collaboration in doing research and the last question looks for the main sources of university teachers' MA/PhD/Post-doc research topics.

The data collected will be presented textually using descriptions and thematic analysis and therefore, qualitative data analysis is followed to give meaning to the data which is presented and discussed in the following section. Tables and graphs will be used when necessary to give a clear presentation of the findings.

3. Presentation, discussion and interpretation of the findings

The data elicited from the teachers questionnaire is presented and discussed. The first sub-section is devoted to the presentation of answers to question 1 and 2 that address the quality and amount of scientific research in Algerian HE institutions.

3.1 Quality and amount of scientific research in Algerian univeristies

For question one of the survey, the 10 teachers of English responses are presented first followed by the answers obtained from the two teachers of psychology and didactics in Arabic. The graph below shows the percentages and answers to the quality and amount of scientific research in the Algerian HE institutions question.

Graph 1: Quality and amount of scientific research in Algerian universities

Q1. How would you assess the quality and amount of scientific research conducted in your institution/ in the Algerian university?
10 réponses



For the two university teachers who teach in Arabic, they both agreed that the amount and quantity of research is not satisfactory. Thus, the graph demonstrates the percentage of 90 % for ‘not satisfactory’ concerning the amont and quality of research in Algerian HE institutions and 10% for ‘I cannot assess’ that was the answer of one teacher participant.

The teachers justifications for the unsatisfactory amount and quality of scientific research in our HE institutions vary and they represent teachers responses to question two of the survey; they are reported as follows:

- Some research studies are satisfactory, yet, teacher researchers are not trained, this refers to lack of research methodology skills. The teacher highlighted three factors that are possibly the main reasons for this low quality and these are ‘support’, ‘materials’ and ‘collaboration’.
- Motivation is another reason mentioned by the teachers, in addition to ‘difficult working conditions’ like teaching large classes. The same teacher added that *‘there is a political and social context that cares little for quality in anything’*
- One teacher refrained from justifying arguing that s/he is *‘not informed about the latest research studies conducted in her/his institution’*.
- A teacher reported *‘lack of a research spirit’* among the members of the same faculty/department, such is the case of the teachers of the Department of English where s/he teaches, s/he noted that: *‘university life is synonymous mostly to class instruction only’*.
- *‘Measures have not been implemented to accompany teachers in their research’* is another cause of low quality research in Algerian universities as revealed by one of the participants.
- The research landscape seems to be poor according to one teacher who stated that there is *‘a very limited number of publications and research projects’*.
- One teacher argued that lack of communication and coordination between the teacher researchers from different universities is one of the causes that reduces quality and quantity of scientific inquiry in Algerian universities. S/he contended that teachers *‘are not informed about the research and studies of other university teachers’*.

3.2 Role of university teachers in scientific research

Regarding their roles in the field of scientific research, the respondents provided answers to the third question of the survey; these are presented in the following table:

Table 1: Teachers’ roles in the field of scientific research

Teachers	Roles
T1	‘search for students’ difficulties’, ‘try new approaches’, ‘bring about changes’, ‘promote research’
T2	‘share and expand horizon of knowledge’
T3	‘supervise’ and ‘research’
T4	‘researcher’, ‘member of a research team’
T5	‘researcher’, ‘writer of articles’, ‘participant in conferences’
T6	‘writer of research articles’, ‘participant in conferences’
T7	‘writer of articles’
T8	‘contributor to scientific research’, ‘explorer’, ‘investigator’
T9	‘researcher’ and ‘student advisor’
T10	‘researcher’
T11	‘researcher’, ‘explorer of new ideas’, ‘collaborator with students’
T12	‘researcher’ and ‘supervisor’ of quality research

In addition to the roles mentioned in the table, some teachers elaborated on their answers. For example, one teacher commented that fulfilling these roles is '*difficult*' since the main task of Algerian university teachers is '*limited to teaching*'. Another participant also mentioned that realizing these roles is not an easy task.

3.3 Factors that promote scientific research in Algerian universities

The university teachers were asked to respond to question four on the main factors that can contribute to the development of scientific research in our academic context. The participants came up with the following determinants of quality in research:

- Efficient training from expert researchers and the development of a research spirit.
- Coordination and collaboration among researchers on a regular basis through the organization of '*team work*' which can be '*beneficial especially to novice researchers*'.
- Provision of financial, technical, financial and logistic support to teacher researchers; for instance '*well equipped laboratories*' and ICT training.
- Promotion of successful researchers to encourage them and create a competitive atmosphere for research; '*aspiring and well performing academics should be helped financially to take part in various scientific events*', one of the participants elaborated.
- Encouraging research projects, teams, labs and academic journals with high impact factor; '*the policy of publish or perish should be applied as a norm*', one teacher noted.
- Encouraging field studies and research works that go beyond theoretical reviews.
- Reducing bureaucratic procedures to set up a research group or lab.
- Reducing the teaching load to have more time to conduct research; '*teachers spend most of their time preparing lessons for students*', one teacher commented.
- Providing the right conditions and the motivational atmosphere to boost teachers' creativity.
- Availability of primary sources for studies.
- Openness to the needs of the social and economic fields.
- Openness to new research methodologies and research platforms like research gate, academia and scholar one that can lead to '*international collaboration*', one teacher argued.
- Organization of conferences, study days and workshops that can help promote scientific research.
- Raising researchers' awareness to the drawbacks of plagiarism and unethical issues in the conduct of research.

It is worth noting that the majority of teachers emphasized on the idea of collegial work and collaboration as one of the core determinants that can

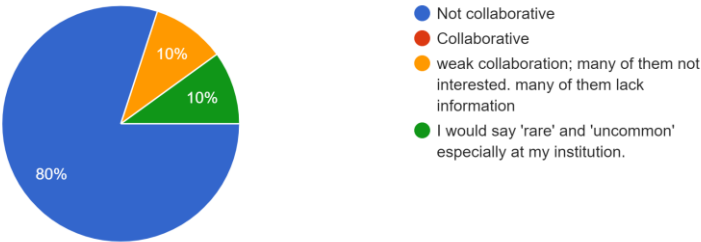
enhance scientific research in Algerian universities. The participants have also stressed on the importance of equipments, support, research labs, training, motivation and more time to engage in research projects.

3.4 Teachers collaboration in scientific research in Algerian universities

The fifth question of the survey addressed the extent to which teachers collaborate and work in teams to do research projects. The responses to this question are presented in the graph below:

Graph 2: Teachers collaboration in scientific research in Algerian universities

Q5. To what extent do teachers collaborate in the field of scientific research in your institution/ in the Algerian university and how?
10 réponses



As the graph indicates, 80% of the respondents confirmed that the Algerian teachers are not collaborative; 10%, that is one teacher, reported the existence of *‘weak collaboration’* and mentioned that most teachers *‘are not interested’*. One participant described collaborative research as *‘rare’* and *‘uncommon’* in her institution. For the teacher of didactics in Arabic, he characterized collaborative research as *‘weak’* and that it does not meet the standards. According to the teacher of psychology, *‘teachers ignore what their colleagues are working on’* and if collaborative research exists, it can be found in research labs where only *‘one or two researchers work seriously’*. What can be deduced from the data obtained from question five of the survey is that collaborative research is not common practice among Algerian teacher researchers. This is possibly due to some of the reasons derived from the participants in the previous question and that match with previous research findings on the topic. Kamini and Figg (2011, in Bevins & Price, 2014), for example, identified three similar factors that can foster successful collaboration. The factors are: time to engage and collaborate, workload, and group dynamics. These have been mentioned by the teachers as barriers that prevent the implementation of quality collaborative research in our institutions.

3.5 Sources of research topics in teachers’ research

As concerns their answers to the last question of the survey that inquires about the main sources the teachers resorted to for their MA, PhD or post-doctoral research topics, the teachers provided the following responses that are presented in the graph below.

Graph 3: Sources of research topics in teachers’ research

Q6. What was/is the main source of the research topic/issue in your MA/PhD/post-doctoral research?

10 réponses



The graph shows the different sources teachers relied on to identify a research topic/issue for their MA, PhD or post-doctoral research. The most relied on source is previous readings and theories that received the highest percentage (40%), followed by previous research papers from different contexts (20%). The less commonly used sources are: previous research papers from our Algerian context, books and articles, conferences and seminars and teaching experience. One teacher stated that ‘the significance of the topic’ was the main source of selecting her research topic.

The purpose of this question was to explore whether there is continuity in research in the Algerian universities. This can be a proof of collaboration and exchange of ideas and research interests between teachers of the same faculty/department/university. Since the item of ‘previous research paper from the Algerian context’ received low percentage, this means that few Algerian researchers consult their colleagues research papers to come up with issues and research questions. This creates a gap in research that undermines the findings, affects their relevance to the context in which they need to be applied and allows low generalizability.

Hence, and out of the above discussion, we can relate the practice of collaborative inquiry to continuity in teachers research projects. If team work is not adopted by researchers in the same institution as a mode of collaborative research, teachers will not be able to share their research concerns and therefore will be working on completely different issues and reach divergent findings that cannot culminate into a common, workable solution to a local educational problem.

4. Summary of the findings

This paper addressed two issues of common concern among Algerian university teachers in higher education. These are collaborative research and continuity. Collaborative inquiry is a research activity whereby teacher researchers work together in a research project or coordinate to reach a common research goal such as, the evaluation of the school curriculum, exploring students' difficulties in instruction, doing collaborative action research to improve teaching practices, etc.

In the Algerian HE context, collaborative inquiry is not a norm even though it plays a crucial role in teachers' professional development. The most predominant form of collaboration in research in Algerian universities is the research labs that have not yet proved to be highly productive, especially in terms of providing practical solutions to educational or social issues.

In this small scale study, the teacher participants put light on the main reasons behind low quality and amount of scientific research in Algerian HE institutions. They have put forth the following key factors:

- Lack of research training
- lack of materials
- Low research spirit and motivation
- Low funding
- Lack of collaboration
- lack of continuity in scientific production
- Heavy workload

Compared to the literature on the challenges of collaborative research for teachers, Cowie, Otrell-Cass, Moreland, and Jones et al. (2010, p.74) also referred to similar issues with teachers, they listed them as:

First, the time commitment required by researchers and teachers is substantial. Teachers need to find time to talk after lessons and to attend meetings in addition to any teacher release funding that is provided. Alongside this there are often logistical problems in getting all research partners together...Third, the extent to which teachers are prepared to take risks, share their ideas, feelings and opinions depends on the nature of the relationship that develops between teachers and researchers. Mutual trust, respect and rapport are essential.

Therefore, it seems clear that some common difficulties are experienced by teacher researchers worldwide and are not the character of Algerian scientific research per se.

What can compensate for these drawbacks in scientific research and possibly bridge the gap between teachers willingness to do research and the actual conduct of quality research is what teachers in this study have suggested as:

- Regular collaboration
- Support; financial and technical
- Training
- Encouragement and sponsorship

- Doing more field research
- Conferences and workshops on research
- Prioritizing research ethics
- Linking research to society and economy
- Continuity and communication
- High quality publications
- Openness to ICTs and international databases and platforms

Regarding the main sources consulted by teachers to identify their research topics, the six listed below were ranked from the mostly used source to the least:

- Previous readings and theories
- Previous research papers from different contexts
- Previous research papers from the Algerian context
- Books and articles
- Long teaching experience
- All the sources together

5. Conclusion and recommendations

This case study explored the issues of collaborative inquiry and continuity in research from the standpoint of twelve Algerian university teachers'. The initial objective was to give an overview of the status of scientific research in Algerian HE institutions, then move on to the presence or otherwise absence of collaboration as a mode of inquiry in our universities. In addition, this paper highlighted a less commonly discussed issue in research and that is continuity, whereby the teacher researchers are expected to exchange research ideas and issues and start from for their own research projects or work together to achieve a common research goal. This aspect in initiating or processing an inquiry is an effective way to bring about practical and valid outcomes and findings.

The qualitative case study design was used for data collection and analysis. It is believed to be the most suitable methodology for small scale studies where generalization is not intended by the researcher. It is a local and contextualized piece of research that concerns mainly the teachers of the Pre-service Teacher Training School in Algiers and therefore, the findings are true for the participant teachers within this HE institution and not beyond. The sampling was purposful since the participants were selected to serve the objectives of the study, i.e. to contribute with their insights and views to the issue of collaborative research.

The tool used for data gathering was the questionnaire; it was sent to teachers as a google form survey given that we are witnessing an unprecedented reliance and use of technology due to the COVID19 pandemic. The survey comprises six questions that combine open-ended and close ended questions. The results of the present study revealed that teachers are involved in scientific research and collaborative inquiry, but it is weak and of low quality

due to a number of important factors, such as: time, training, facilities, funding, and skills; to name but a few.

In addition, university teachers suggested that working within research communities and providing support, training and reducing the teaching load are some of the key ingredients to improve scientific research practices in our Algerian context.

They have also emphasised on the need to create a communication channel that links researchers together for collegial partnership in scientific inquiry. Furthermore, the study implies the existence of a possible mutual relationship between the adoption of collaborative inquiry and continuity in research that can reach out and meet the international standards of scientific investigations. This is possible through a number of recommendations that are set forth in what follows:

5.1 Involvement in collaborative action research/Teacher-driven inquiry

This is a form of inquiry where the teacher is the researcher. S/he works together with a group of teacher researchers to solve an educational, local issue in the same school/institution/university. This mode of research can reduce the load of conducting individual research studies and engage researchers in a community of research that shares similar interests. The teachers can also benefit from their colleagues' research skills and ideas or use them to identify and investigate new research problems. Action research, being a practitioner form of inquiry, is a way to solve the issue of 'lack of field work' as mentioned by the participants of this study. It also ensures a research dialogue between those who participate to 'produce effective, open sharing of aims, agenda, ideas and knowledge' (Bevins & Price, 2014, p.4)

This is also characterized as teacher-driven inquiry that is not new and that Algerian teachers need to adopt as regular practice. Like teachers around the world, we need to embrace a culture of inquiry 'where teachers have opportunities to discuss, think about, try, and hone new practices through structures such as problem-solving groups or decision-making teams' (Donohoo, 2013, p. 11). In the same line of thought, Lieberman and Miller (2004, in Donohoo, 2013, p.12) maintain that 'the concept of learning in practice is now viewed as foundational to teacher leadership; it rests on the idea that learning is more social, collaborative, and context-dependent than was previously thought'.

5.2 Collaborative writing of teachers' reflections and analysis

This is another option for teachers to coordinate through writing which is an integral part of research. Cowie, Otrell-Cass, Moreland, and Jones et al. (2010) used this as a strategy to comment and reflect on their classroom observations as a group. The researchers acknowledged the existence of individual differences, perspectives and sometimes arguments and debates, yet, the interactions that took place between group members were far more beneficial. Teacher researchers develop reflective thinking and a true spirit of researchers through composition at a small scale level and later on at a larger scale.

These were only two recommended research procedures that Algerian teacher researchers can espouse as academic practices for a better implementation of collaborative inquiry and continuity in our universities and schools. Further research is needed in this area to find more relevant and context bound strategies to level up the status of scientific research and its quality in our context.

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Appendix A: Teachers' questionnaire

Dear teachers,

Can you please provide your valuable insights on the topic of the quality and challenges of scientific inquiry in your institution/ in our country to inform a research study by answering the questions below.

Thank you in advance for your contribution.

Q1. How would you assess the quality and amount of scientific research conducted in your institution/ in the Algerian university?

Satisfactory ☐ Not satisfactory ☐ other ☐

Q2. Justify your choice for Q1, please

Q3. What is your role, as a university teacher, in the field of scientific research?

Q4. What is/are the main factor(s) that can promote scientific research in your institution/ in the Algerian university?

Q5. To what extent do teachers collaborate in the field of scientific research in your institution/ in the Algerian university and how?

Collaborative ☐ Not collaborative ☐ Other ☐

Q6. What was/is the main source of the research topic/issue in your MA/PhD/post-doctoral research?