

The Methodological Consistency of Master's of Education Dissertations at Eduardo Mondlane University (2013 - 2018)

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Abstract

This study examined the methodological consistency of Master of Education dissertations defended at Eduardo Mondlane University (EMU) from 2013 to 2018 using the typology of educational research proposed by Postlethwaite (2005), Norman et al. (2002), and Creswell (2012). The qualitative, comparative study employed a grounded theory design. Data were gathered from a purposive sample of 33 dissertations, available on the university's Open Institutional Repository. Coding and anonymous analysis were performed of the dissertations' title, research methodology, and findings. The findings reveal that a large number of these dissertations are not methodologically consistent and thus do not lay the foundation for further research and other interventions for school improvement. They thus point to the need to improve the quality of supervision and research in postgraduate studies in Education at EMU.

Key words: EMU, Master's dissertations, educational research, methodological consistency, supervision

Cette étude a examiné la cohérence méthodologique des mémoires de maîtrise en éducation soutenus à l'Université Eduardo Mondlane (EMU) de 2013 à 2018 en utilisant la typologie de la recherche en éducation proposée par Postlethwaite (2005), Norman et al. (2002) et Creswell (2012). L'étude qualitative et comparative a utilisé une conception théorique ancrée. Les données ont été recueillies à partir d'un échantillon intentionnel de 33 thèses, disponibles sur le référentiel institutionnel ouvert de

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l'université. Le codage et l'analyse anonyme ont été effectués sur le titre des thèses, la méthodologie de recherche et les résultats. Les résultats révèlent qu'un grand nombre de ces thèses ne sont pas cohérents sur le plan méthodologique et ne jettent donc pas les bases d'autres recherches et d'autres interventions pour l'amélioration de l'école. Ils soulignent ainsi la nécessité d'améliorer la qualité de l'encadrement et de la recherche dans les études de troisième cycle en éducation à l'UEM.

Mots clés: EMU, mémoires de master, recherche pédagogique, cohérence méthodologique, encadrement.

Introduction

The international literature suggests that the characteristics and trends of education have significant implications for training and research. Maynard et al. (2012) state that the lack of applied research by doctoral candidates reflects a deficit in research capacity within university schools. In order to engage in relevant and applied research, faculty members need to be skilled in advanced research methodologies.

Furthermore, schools need to be committed to conducting applied research, building community-university partnerships, and securing funding to provide opportunities for students to engage in applied research. Maynard et al. (2012) recommend building a research culture and infrastructure within schools to facilitate the training and professionalisation of candidates to engage in practice-relevant research, build the knowledge base and advance the profession's efforts to build research capacity after they graduate. On the other hand, Mohajan (2018, p. 1) asserts that "every research must involve an explicit, disciplined, systematic (planned, ordered, and public) approach to find out most appropriate results".

According to Langa (2018), Higher Education (HE) in Mozambique is in an incipient stage as it grows to become a more complex social institution. However, "it is not possible to establish whether this complexity has already ignited a functioning field of HE research" (Langa, 2018, p. 58). Mário et al. (2003, p. 59) recommended that Mozambican HE institutions should promote "a closer link between teaching and research through applied research" to improve the relevance of their curricula. There is a strong link between Mozambican HE and Eduardo Mondlane University (EMU). The university was established in 1962 in what was then Lourenço Marques (now Maputo), the capital of Portugal's overseas province of Mozambique. Initially known as Mozambique General University Studies; in 1968 it became the University of Lourenço Marques. Following Mozambique's independence in 1975, the university was renamed in honour of Mozambique Liberation Front leader, Eduardo Mondlane, in 1976 (Mário et al., 2003; Langa, 2018).

Eduardo Mondlane University's vision is to be a national and international reference in knowledge production and innovation in Education and Psychology¹ (EMU, 2013). The Master's degree in Education is expected to "train professionals with skills of research, teaching, and management"; enabling them to act at "public and private institutions, including universities, primary and secondary schools" (EMU, 2018, p. 6). Given that "research" means orderly investigation of a subject to add to knowledge, it implies that the subject matter is already known but, for some reason, needs to be studied again (Postlethwaite, 2005). Educational research plays "the role of providing attested information to improve the quality of decision-making for educational policy" (Livingstone, 2005, p. 1).

From its inception, HE in Mozambique was always public, in line with the socialist ideology of its first post-independence governments (Langa and Zavale, 2015). Following the liberalisation of the economy, private HE emerged in the mid-1990s, leading "to an increase in the number and type of HE institution suppliers, which inevitably created an environment of competition among the different institutions" (p. 89). Within this environment, student numbers increased, putting the system under pressure and posing the risk of a drop in the quality of educational offerings.

Ever-increasing human needs and technological advances mean that passive knowledge transmission is not sufficient and that students should be taught in a manner that enables them to develop their research skills (Ali and Abbas, 2018).

The Study Group on Educational Law and Policy at EMU that brings together lecturers and researchers undertaking studies on the right to education (i.e., access, financing, and management) at different levels (primary, secondary, and higher)² has engaged in much discussion on the role of educational research. As research expectations of universities increase, competitiveness also increases (Robles, 2016) and faculty members are thus under pressure to produce research in their fields.

One of the key issues raised in the education literature is the extent to which research should be chiefly directed towards school improvement, in general, and facilitating effective classroom practice, in particular. Some scholars, such as Carnine (2000), believe that, like medicine, education should be an "evidenced-based" field, in which findings are used in line with the contexts in which different schools operate. This concurs with Hemenstall (2006), who interpreted educational research as "the art of searching in education" rather than a "science" per se (Postlethwaite, 2005). Our study examined the methodological consistency of the Master

¹ Available online at: <https://www.uem.mz/index.php/faculdades-e-escolas/faculdades/faculdade-de-educacao>.

² More details on this group are available at: <http://www.faced.uem.mz/index.php/grupos-de-pesquisa>.

of Education dissertations defended at EMU from 2013 to 2018 in light of the methodological trustworthiness of educational research proposed by Postlethwaite (2005), Norman et al. (2002), and Creswell (2012).

Problem statement

Funding challenges faced by “Sub-Saharan African universities are likely to impact on the nature of and motive for undertaking academic research, resulting in different orientations from those of Western universities” (Kaweesi et al., 2019, p. 3). In Mozambique, EMU promotes excellence “based on the postulates of quality and trustworthiness of production of knowledge through research” (EMU, 2007, p. 3). However, it is reported that research conducted at this institution suffers from “weaknesses in several aspects of research management, such as quality of research output” (p. 1). The type of research will dictate the research methodologies that should underpin the methods. Regardless of the methodology, data collection techniques must fit with the study’s objectives. Moreover, “it is important that the technique used to collect data is adequate to provide the information required to accomplish the overall goals of the study” (Opoku et al., 2016, p. 32). As such, research-oriented teaching is an emerging trend in HE and is widely used in developed countries (Ali and Abbas, 2019).

Training at EMU should be based on principles and methods that enable students to develop an academic attitude towards reflection, analysis, and critical thinking (EMU, 2013). As noted by Langa (2014, p. 370), “at all levels of Mozambique predominates a more experiential knowledge of HE and there is a shortage of a scientific-based knowledge”. Due to the shift from traditional methods to research-oriented teaching, changes are occurring in teaching styles. Our study was motivated by the fact that no research has been conducted on the scientific trustworthiness of Master’s dissertations in Education at EMU. There is thus a need to verify the methodological consistency of these dissertations. The problem raised the following question:

How consistent are the Master’s dissertations defended at EMU from 2013 to 2018 in light of the methodological trustworthiness of educational research proposed by Postlethwaite (2005), Norman et al. (2002), and Creswell (2012)?

Operational definition

According to Newman and Covrig (2017, p. 79), “there is no perfect research, but building consistency into a research plan and reflecting on the alignment between the title, purpose, problem, and research questions will greatly improve the quality of the research”. When consistency is achieved, contradictory conclusions cannot be derived from the research. However,

if “there is no coherence and consistency within the approach, the processes cannot be followed and theory generation is impossible” (Holloway and Todres, 2005, p. 98). This “does not mean that the same result would necessarily be found in other contexts but that, given the same data, other researchers would find similar patterns” (Hammarberg et al., 2016, p. 500). Therefore, consistency refers to the extent “to which repeated administration of a measure will provide the same data or the extent to which a measure administered once, but by different people, produces equivalent results” (Krefting, 1991, p. 216).

Each approach has to demonstrate consistency with its foundations and will reflect them in data collection, analysis, and knowledge claims. If consistency is achieved, “the whole thing ‘hangs together’ as coherent; that is, the kind of knowledge generated in the results or presentation section does what it said it would do under the aims of the project” (Holloway and Todres, 2005, p. 93). Thus, an independent researcher should arrive at similar findings (Noble and Smith, 2015).

According to Brown (2017, p. 23), “consistency in research design falls in three categories: quantitative reliability, qualitative dependability, and mixed methods research dependability”.

Quantitative reliability is the degree to which the results of observations are consistent in a study, but the study as a whole is also consistent internally and externally. Two primary strategies should be used to enhance the reliability of a quantitative study (Brown, 2017). First, the reliability of observations can be enhanced by calculating reliability estimates for measures or agreement estimates for ratings and coding. Second, the reliability of the results of the study as a whole can be enhanced internally (by carefully monitoring and controlling issues that might contribute to inconsistency) and externally (by inspecting the statistical tests that are run to determine the degree to which the results would be likely to be stable if the study were replicated).

According to Brown (2017), *qualitative dependability* involves enhancing the consistency of observations and the effects of changing conditions in the study by using one or more of three strategies. The first is method triangulation, which involves multiple data gathering techniques. The second strategy is time triangulation, with data gathered multiple times and the third is investigator triangulation, which means that multiple investigators are involved in the study.

Objective of the study

The study’s objective was to examine the methodological consistency of the Master’s in Education dissertations defended at EMU from 2013 to 2018, in light of the methodological trustworthiness of educational research proposed by Postlethwaite (2005), Norman et al. (2002), and Creswell (2012).

3 In 2013 the EMU launched a new vision of being “a research-oriented university”.

Method

This was a qualitative (grounded theory design) and comparative study (Tie et al., 2019). Grounded theory design is a systematic, qualitative procedure that researchers use to generate a general conception (grounded in the views of participants, called a grounded theory) that explains a process, action, or interaction among people (Creswell, 2012). The procedures to develop this theory include collecting data (from dissertations), developing and relating categories (or themes) of information, and composing a figure or visual model that portrays the general explanation.

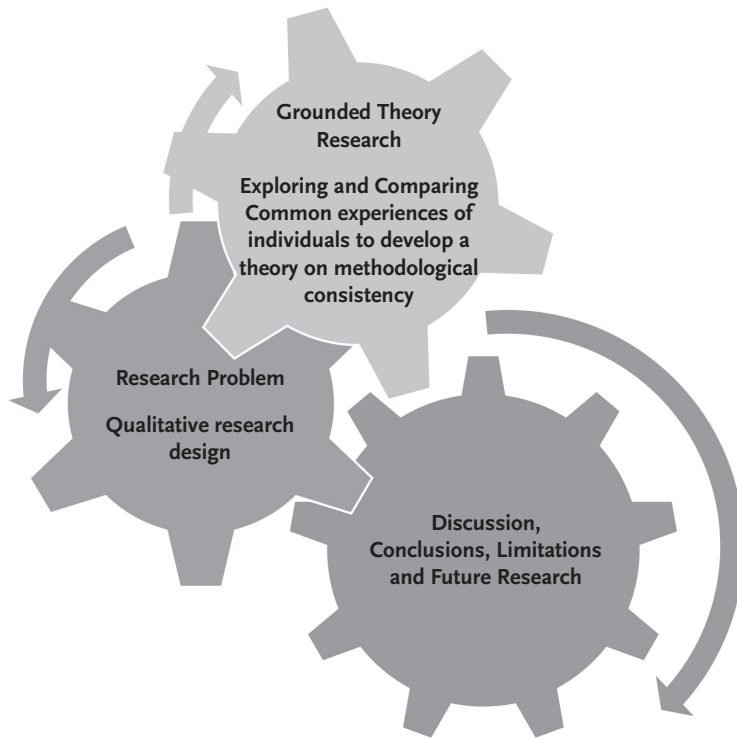


Figure 1. Visual model of the research design and general explanation

In terms of comparisons, we selected particular units and aspects (such as the research title, educational research methodology, and findings) rather than others (why and how a given phenomenon is analysed in the dissertations). As a construction, “comparison thus helps to create an ordered perception of this reality, i.e., an organized way to see it in one rather than in many other alternative ways” (Azarian, 2011, p. 123). Comparisons were, therefore, based on checking the methodology of the dissertations

under the types of educational research proposed by Postlethwaite (2005), which enables identification of the type of research and how it should be conducted. Comparisons emerged as the data analysis proceeded as in grounded theory, through relating categories of information that allowed propositions (Creswell, 2012).

Population and sampling strategy

Electronic versions of the dissertations were accessed on EMU’s institutional repository. Only dissertations that meet specific quality requirements are made available on the repository. From a population of 90 dissertations defended from 2013 to 2018 (see Table 1), a purposive sample of 33, available on the repository, was selected, “based on the assumption that these elements represent a ‘typical sample’ from the appropriate target population” (Ross, 2005, p. 7).

Table 1: Students enrolled and graduated by cohort

Year	Registered				Graduates (True cohort)				Graduates (False cohort)				Total of graduates
	EAM	ENSM	AE	CID	EAM	ENSM	AE	CID	EAM	ENSM	AE	CID	
2009	6	5	0	6	0	0	0	0	0	0	0	0	0
2010	0	11	16	13	0	0	0	0	0	0	0	0	0
2011	16	6	0	10	2	0	0	0	5	2	4	5	18
2012	20	8	7	17	0	0	1	0	2	1	0	1	5
2013	15	0	13	13	0	0	0	0	3	1	3	2	9
2014	19	7	19	6	8	0	0	2	0	2	1	0	13
2015	17	0	0	7	1	0	0	1	3	1	2	2	10
2016	13	0	6	8	0	0	0	0	2	1	5	5	13
2017	0	0	0	0	0	0	0	0	6	0	2	4	12
2018	0	0	0	0	0	0	0	0	4	0	0	6	10
Total	106	37	61	80	11	0	1	3	25	8	17	24	90

EAM: Educational Administration and Management
 ENSM: Education in Natural Sciences and Mathematics
 AE: Adult Education
 CID: Curriculum and Instructional Development

Source: University Librarian Services (2020)

With permission from the Library Services, these dissertations were downloaded and their titles, objectives, methods, and conclusions were analysed.

Material

Data collection commenced with a systematic literature review on educational research and identification of the 33 dissertations. This was followed by construction and validation of the analytic model based on the descrip-

tion of eight types of educational research proposed by Postlethwaite (2005). This typology (i.e., historical, descriptive, correlational, causal, experimental, case study, ethnographic, and research and development) was validated through “investigator triangulation” (Norman et al., 2002; Creswell, 2012). The eight types of educational research were drawn from *Educational Research: some basic concepts and terminology*, jointly produced by International Institute for Educational Planning (IIEP) and the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ). These types were also adopted by the College of Social Sciences and International Studies of Exeter University in the United Kingdom, and by the University of Sao Paulo in Brazil. This was deemed an appropriate methodological lens to understand educational research from a Southern African perspective.

Data analysis

Data analysis was based on a comparison of each type of research with the corresponding description and definition (Norman et al., 2002; Postlethwaite, 2005; Creswell, 2012). We adopted a two-stage comparison to firstly, verify the types of educational research; and secondly, to determine whether these types of educational research matched the methodology adopted by EMU students. In terms of ethical issues, dissertations were coded and analysed anonymously.

Findings and discussion

The eight types of educational research proposed by Postlethwaite (2005), Norman et al. (2002) and Creswell, (2012) were identified to verify the methodological consistency of the dissertations defended at EMU from 2013 to 2018 (see Table 2).

Table 2: Dissertations defended from 2013 to 2018 by code, gender, and type of educational research

Code	Area of study	Year	Gender		Supervisor (area of study)		Co-supervisor (area of study)		Type of educational research adopted by the students	Type of educational research as per Postlethwaite (2005), Norman et al. (2002), and Creswell (2012)
			Male	Female	Male	Female	Male	Female		
Dissertation 01	ENSM	2013	•		PhD in Education (Quality Assurance)				Mixed methods	Descriptive study
Dissertation 02	AE	2013	•		PhD in History of Education		PhD in Adult Education		Case study	Descriptive study
Dissertation 03	EAM	2013	•		PhD in Physics		PhD in EAM		Descriptive study	Case study
Dissertation 04	CID	2013	•		PhD in Educational Technology			PhD in Educational Technology	Case study	Case study
Dissertation 05	CID	2013	•		PhD in Sociology of Education				Case study	Case study
Dissertation 06	EAM	2013	•		PhD in Philosophy of Education				Case study	(Multiple) Case study
Dissertation 07	ENSM	2014	•			PhD in ENSM			Mixed methods	Case study
Dissertation 08	EAM	2014		•	PhD in EAM				Mixed methods	Descriptive study
Dissertation 09	EAM	2014	•		PhD in Physics				Case study	(Multiple) Case study
Dissertation 10	EAM	2014	•		PhD in Physics				Descriptive study	Co-relational
Dissertation 11	AE	2014		•	PhD in Psychology			PhD in Psychology	Quantitative	Causal study
Dissertation 12	EAM	2015		•	PhD in EAM				Mixed methods	Case study
Dissertation 13	CID	2015		•		PhD in ENSM			Mixed methods	Co-relational
Dissertation 14	EAM	2015	•		PhD in Linguistics				Mixed methods	Co-relational
Dissertation 15	AE	2015		•	PhD in History of Education		PhD in AE		Case study	(Multiple) Case study
Dissertation 16	AE	2015		•		PhD in Psychology		PhD in Psychology	Descriptive study	Descriptive study
Dissertation 17	AE	2015		•	PhD in Psychology		PhD in Psychology		Descriptive study	Causal study
Dissertation 18	CID	2015	•		PhD in Physics		PhD in CID		Quantitative	Co-relational
Dissertation 19	AE	2015		•	PhD in AE				Case study	Case study
Dissertation 20	EAM	2015		•		PhD in Sociology	PhD in EAM		Case study	Causal study

Code	Area of study	Year	Gender		Supervisor (area of study)		Co-supervisor (area of study)		Type of educational research adopted by the students	Type of educational research as per Postlethwaite (2005), Norman et al. (2002), and Creswell (2012)
			Male	Female	Male	Female	Male	Female		
Dissertation 21	ENSM	2015	•		PhD in Physics				Mixed methods	Descriptive study
Dissertation 22	EAM	2016		•	PhD in Sociology of Education		PhD in Sociology of Education		Case study	(Multiple) Case study
Dissertation 23	EAM	2016	•		PhD in Physics				Case study	Descriptive study
Dissertation 24	CID	2016		•	PhD in CID	PhD in CID			Qualitative	Descriptive study
Dissertation 25	AE	2016		•		PhD in Sociology		PhD in AE	Bibliographic research	Case study
Dissertation 26	CID	2016	•			PhD in ENSM			Bibliographic research	Descriptive study
Dissertation 27	AE	2016	•			PhD in Psychology		PhD in Psychology	Ex-post facto research	Ethnographic research
Dissertation 28	CID	2016	•			PhD in CID	PhD in CID		Mixed methods	Descriptive study
Dissertation 29	AE	2016	•		PhD in AE				Qualitative	Research and development
Dissertation 30	CID	2016	•			PhD in CID			Exploratory	Descriptive study
Dissertation 31	AE	2016		•	PhD in Education (Quality Assurance)	PhD in AE			Mixed methods	Case study
Dissertation 32	EAM	2017	•		PhD in Sociology of Education		PhD in Sociology of Education		Case study	Case study
Dissertation 33	EAM	2018	•		PhD in Education		PhD in EAM		Descriptive study	Descriptive study
			20	13						

EAM: Educational Administration and Management.

ENSM: Education in Natural Sciences and Mathematics.

AE: Adult Education.

CID: Curriculum and Instructional Development.

Source: EMU Open Institutional Repository

Table 2 above lists the 33 dissertations by code, year, gender, area of study, supervisor, and type of educational research. Within this sample, 18 dissertations were supervised and/or co-supervised by specialists, i.e., by supervisors whose training areas are related to students' degree programme areas. Of these, only four are methodologically consistent. On the other hand, despite the fact that the remaining 15 dissertations were supervised by non-specialists, five of these are methodologically consistent. These findings suggest that, being a specialist is an important but not sufficient condition for adequate supervision. This implies the need for on-going training of supervisors on educational research methodology, whether or not they are specialists.

Historical research generates descriptions and sometimes explanations of conditions, situations, and events that occurred in the past, because "time passes between the beginning of the experiment and the end, and events may occur between the pretest and post-test that influence the outcome" (Creswell, 2012, p. 304). To assess the methodological consistency of historical research, one should ascertain if preliminary research took place, and whether the topic or research question has been identified and refined. There is also a need to ensure the adequacy of the methods and data sources, to enable the use of research evidence to support or reject a hypothesis. Based on this, the researcher is expected to formulate a thesis statement, analyse the data and develop a narrative exposition of the findings.

We did not identify any historical research in the sample. There are two possible reasons: students may have privileged other interests rather than seeking to understand educational events that have already occurred; or they didn't feel methodologically prepared to undertake historical research.

Descriptive research provides information on current conditions, situations, and events. Based on "descriptive statistics, means, standard deviations, and the range of scores to show useful information about results" (Creswell, 2012, p. 197), its consistency is assessed by determining the degree to which cases that share a given condition or combination of conditions produce the same outcome. However, "descriptive studies lack the powerful controls needed to establish credible links between exposures and outcomes" (Norman et al., 2002, p. 58). For this reason, many researchers that seek to establish possible links between the variables do not consider a simple descriptive study sufficient and therefore focus on co-relational or causal linkages. We identified 11 dissertations written employing descriptive analysis (Table 2). This number is reasonable given that the descriptive research design is the second most common methodological option, suggesting that this is the methodological procedure students feel most comfortable with, or that their supervisors direct them to this type of educational research.

Correlational research involves the search for relationships between variables through the use of measures of statistical association. Co-relational designs enable researchers to predict scores and explain the relationships among the variables under study. Such researchers “use the correlation statistical test to describe and measure the degree of association (or relationship) between two or more variables or sets of scores” (Creswell, 2012, p. 338). To assess the consistency of co-relational research, one might check whether participants’ scores in the brief test strongly correlate with their scores in the longer one. This is important considering that neither test score is thought to cause the other and there is thus no independent variable to manipulate. Thus, having fulfilled all the relevant steps, the researcher is expected to ensure that the terms *independent* and dependent variables do not apply to this type of research. We registered four co-relational studies where the variables are associated to verify possible trends. This is an eighth of the total, suggesting that there is little preference for this type of educational research, or that students feel underprepared to undertake it.

Causal research suggests plausible causal linkages between variables. It establishes the *underlying* causes of events, i.e., the reasons *why* a particular phenomenon occurred in the way it did and when it did (Norman et al., 2002). Three causal research studies were identified. The consistency of causal research is assessed considering several paths to the same outcome. In this context, consistency assesses the degree to which instances of an outcome agree in displaying the causal condition thought to be necessary, but not sufficient, whereas coverage assesses the relevance of the causal condition. Thus, adding the four co-relational studies to the three causal ones, seven dissertations, or a fifth (20%) of the total, aimed to establish associations between the variables under study.

In *experimental research*, variables defining one or more ‘causes’ are systematically manipulated to discern their ‘effects’ on other variables. An example is an experimental study in which the “experiment yields useful information about educational outcomes, but the additional collection of qualitative data develops a more in-depth understanding of how the experimental intervention on it worked” (Creswell, 2012, p. 535). The consistency of experimental research is assessed by ascertaining the degree to which a measurement supplies reliable results with equal values. It measures the precision, repeatability, and trustworthiness of research and indicates the extent to which it is free from bias, and hence ensures consistent measurement across time and the various items in the instruments. We did not identify any experimental research in this study. It is possible that the differentiated conception of educational sciences, in comparison to others, such as biomedical sciences, may be why students do not adopt experimental research to understand phenomena within the educational sciences.

However, such a conception weakens educational research, because it loses sight of the need to think more in terms of practical application, pragmatic consequences, and outcomes.

The *case study* is a research design that is “a variation of ethnography in that the researcher provides an in-depth exploration of a bounded system, based on extensive data collection” (Creswell, 2012, p. 617). To assess the methodological consistency of case study research, whether the researcher is an outsider or insider, the issues one should pay attention to for valid data, procedures, and results are: (i) investigating a contemporary phenomenon within its real-life context; (ii) when the boundaries between phenomenon and context are not evident; and (iii) in which multiple sources of evidence are used. When necessary, “case studies can include, and even be limited to, quantitative evidence” (Norman et al., 2002, p. 67). Thirteen dissertations are case studies, constituting the majority of the sample. Because case studies focus attention on certain entities, taken as unities, they seem to be easy. However, this is a misleading, because case studies are also highly demanding.

Ethnographic research consists of a description of events that occur within the life of a group – individuals’ interaction in the context of the socio-cultural norms, rituals, and beliefs shared by the group. The consistency of ethnographic research is assessed by ascertaining if, beyond the procedures, data are internally consistent when the researcher records behaviours that are consistent over time and in different social contexts (Sangasubana, 2011). This qualitative procedure describes, analyses, and interprets a cultural group’s shared patterns of behaviour, beliefs, and language that develop over time. We identified one ethnographic research study, which may point to weak appropriation of anthropological issues.

Research and development focuses on the interaction between research and the production and evaluation of a new product (Postlethwaite, 2005). The consistency of this research is assessed through a rigorous, valid, and credible examination of the quality of proposed solutions, which have the potential to contribute significantly to the improvement of practices and outcomes of the primary process that is the focus of the research. With one dissertation identified, this type of research is related to the production, testing, and presentation of new products or services.

In summary, of the 33 dissertations in the sample, nine were mixed methods; 11 case studies; five descriptive studies; two quantitative, qualitative and bibliographic research studies, respectively, and one ex-post facto research, and exploratory study, respectively. According to Postlethwaite (2005), Norman et al. (2002), and Creswell (2012) only case studies and descriptive studies can be considered valid types of educational research. In terms of this typology, mixed methods, quantitative, qualitative, bibliographic, ex-post-facto, and exploratory research are not types of educational

research but are instead, kinds of educational research. Based on these findings, and due to the misleading research design adopted in the majority of the dissertations, the theories the students claim to confirm are falsified. The theoretical implications of these findings are the need to design educational research in such a way that the procedures deliver the most correct results, recommending appropriate action for school improvement. The practical implications are the need for specialists in educational research to identify strengths and weaknesses and design specific interventions for improvement at EMU.

Data for four of the studies (dissertations 6, 9, 15, and 22) were collected from more than one school and students considered them “multiple case studies”. It is important to distinguish between a simple case study and a multiple one. As noted by Gustafsson (2017, p. 11), “with a multiple case study ... the researcher can analyze the data within each situation and across different situations”. It thus enables the researcher to understand the similarities and differences between the cases, and generate strong, reliable evidence to clarify if the findings are valuable. The misleading classification of case studies denotes methodological limitations when students design their research projects. Furthermore, we identified a significant number of “mixed methods studies”, suggesting that many students feel comfortable conducting quantitative and qualitative research at the same time, based on the idea that mixed methods research provides better results than a single approach.

As shown in Table 2, 20 dissertations were by male and 13 by female students. There were 13 case studies, 11 descriptive studies, four co-relational studies, three causal studies, and one ethnographic and research and development study, respectively.

Improved completion rates are pursued by research-focused academics because they one of the measures of research excellence in some countries. However, we did not identify any systematic study at EMU on educational research methods, resulting in a scarcity of “research findings upon which sound evaluation strategies might be grounded” (Seymour et al., 2004, p. 493). A possible reason might be the lack of a theoretical framework in terms of which to assess educational research.

As research and the development of research skills are both a product and a process at university, this should involve students learning how to research within a specific discipline: “research-orientated teaching” (Ali and Abbas, 2019); it should also involve students conducting their research: “research-based teaching” (Rosenshine, 2012). This is not surprising considering that postgraduate education has been historically linked with academics’ research agenda (Jepsen and Varhegyi, 2012).

Motivated by the desire to break out of the tired old teaching versus research debate, a recent conceptualisation of scholarship suggests possi-

bilities other than the seemingly entrenched ‘truth’ of research and teaching as necessarily competing endeavours (Kyvic, 2015). Thus, teaching and research may not be in opposition but linked (Robles, 2016), corresponding with Zieger and Pulichino’s vision of “Establishing a Community of Learners” (2004, p. 1).

Table 3 describes the typology used to determine whether or not a particular dissertation “matched” the typology proposed by Postlethwaite (2005), Norman et al. (2002), and Creswell (2012).

Table 3: Typology of Educational Research used by the authors and students

Types of Educational Research used by the authors as their typology			Types of Educational Research used by students		
Type	N	%	Type	N	%
Historical Research	0	0.0	-	0	0.0
Descriptive Research	11	33.5	Descriptive Research	2	6.0
			Case Study	2	6.0
			Mixed Methods	4	12.1
			Qualitative Study	1	3.0
			Bibliographic Research	1	3.0
Exploratory Study	1	3.0			
Co-relational Research	4	12.1	Descriptive Research	1	3.0
			Mixed Methods	2	6.0
			Quantitative Research	1	3.0
Causal Research	3	9.0	Case Study	1	3.0
			Quantitative Study	1	3.0
			Descriptive Study	1	3.0
Experimental Research	0	0.0	-	0	0.0
Case Study	13	39.4	Case Study	8	24.2
			Mixed Methods	3	9.7
			Descriptive Research	1	3.0
			Bibliographic Research	1	3.0
Ethnographic Research	1	3.0	Ex-post facto research	1	3.0
Research and Development	1	3.0	Quantitative Study	1	3.0
Total	33	100.0	Total	33	100.0

Table 3, shows that 10 dissertations (i.e., two descriptive studies and eight case studies), match the typology of educational research used by the authors. Together, they represent 30% of the 33 dissertations. The remaining 23 dissertations (representing 70%) do not match the typology used by Postlethwaite (2005), Norman et al. (2002), and Creswell (2012).

Table 4: Dissertations defended from 2013 to 2018 by area, supervisors' specialisation, types of educational research, and methodological consistency.

Dissertation	Year	Area of study	Supervisor	Co-supervisor	Type of educational research used by students	Type of educational research used by the authors	Consistency
03	2013	EAM	Non-specialist	Specialist	Descriptive study	Case study	
06	2013	EAM	Specialist	-	Case study	(Multiple) Case study	Consistent
08	2014	EAM	Specialist	-	Mixed methods	Descriptive study	
09	2014	EAM	Non-specialist	-	Case study	(Multiple) Case study	Consistent
10	2014	EAM	Non-specialist	-	Descriptive study	Co-relational research	
12	2015	EAM	Specialist	-	Mixed methods	Case study	
14	2015	EAM	Non-specialist	-	Mixed methods	Co-relational	
20	2015	EAM	Non-specialist	Specialist	Case study	Causal study	
22	2016	EAM	Non-specialist	Non-specialist	Case study	(Multiple) Case study	Consistent
23	2016	EAM	Non-specialist	-	Case study	Descriptive study	
32	2017	EAM	Non-specialist	Non-specialist	Case study	Case study	Consistent
33	2018	EAM	Specialist	Specialist	Descriptive study	Descriptive study	Consistent
01	2013	ENSM	Specialist	-	Mixed methods	Descriptive study	
07	2014	ENSM	Specialist	-	Mixed methods	Case study	
21	2015	ENSM	Specialist	-	Mixed methods	Descriptive study	
02	2013	AE	Non-specialist	Specialist	Case study	Descriptive study	
11	2014	AE	Non-specialist	Non-specialist	Quantitative study	Causal study	
15	2015	AE	Non-specialist	Specialist	Case study	(Multiple) Case study	Consistent
16	2015	AE	Non-specialist	Non-specialist	Descriptive study	Descriptive study	Consistent
17	2015	AE	Non-specialist	Non-specialist	Descriptive study	Causal study	
19	2015	AE	Specialist	-	Case study	Case study	Consistent
25	2016	AE	Non-specialist	Specialist	Bibliographic research	Case study	
27	2016	AE	Non-specialist	Non-specialist	Ex-post-facto research	Ethnographic research	
29	2016	AE	Specialist	-	Quantitative study	Research and development	
31	2016	AE	Non-specialist	Specialist	Mixed method	Case study	
04	2013	CID	Non-specialist	Non-specialist	Case study	Case study	Consistent
05	2013	CID	Non-specialist	-	Case study	Case study	Consistent
13	2015	CID	Non-specialist	-	Mixed method	Co-relational study	
18	2015	CID	Non-specialist	Specialist	Quantitative study	Co-relational study	
24	2016	CID	Specialist	Specialist	Qualitative study	Descriptive study	
26	2016	CID	Non-specialist	-	Bibliographic research	Descriptive study	
28	2016	CID	Specialist	Specialist	Mixed method	Descriptive study	
30	2016	CID	Specialist	-	Exploratory	Descriptive study	

EAM: Educational Administration and Management.

ENSM: Education in Natural Sciences and Mathematics.

AE: Adult Education.

CID: Curriculum and Instructional Development.

Source: EMU Open Institutional Repository

Table 4 above illustrates that ten dissertations were deemed to be methodologically consistent, four of which were supervised by specialists, and six by non-specialists. Eight of the ten dissertations are case studies, and two are descriptive studies. Thus, 23 dissertations were not found to be methodologically consistent, although 14 of these were supervised by specialists. These figures can be synthesised as follows:

1. In the area of Educational Administration and Management (EAM), six of the 12 dissertations were supervised by specialists; and five of the 12 dissertations were deemed methodologically consistent, with three of these supervised by non-specialists.
2. In the area of Education in Natural Science and Mathematics (ENSM), none of the three dissertations are methodologically consistent, although the supervisors are all specialists.
3. In the area of Adult Education (AE), five of the ten dissertations were supervised by specialists, of which three are methodologically consistent. Of these three, two were supervised by specialists.
4. In the area of Curriculum and Instructional Development (CID), two of eight dissertations are methodologically consistent, both of which were supervised by non-specialists. In this area, four dissertations were supervised by specialists.

These figures suggest that EAM has more methodologically consistent dissertations than any other area, due to producing the highest number of dissertations during the period under review.

The fact that 23 dissertations can be considered methodologically inconsistent calls for consideration of the extent to which teaching and research are linked at EMU. Only when the profession embraces scientific methods to determine efficacy and accepts accountability for results will education acquire the status – and the rewards – of a mature profession (Carnine, 2000). Educational researchers are regarded as those who participate in the process of discovery and communication of knowledge (Livingstone, 2005). Universities are, therefore, scholarly communities (Huber and Hutchings, 2004) where the goal is to prepare students for research and practice in their communities. Hickey and Zuiker (2005) state that learning is configured through the process of the learner becoming a full participant in a socio-cultural practice. They add that, “learning involves meaningful participation in the practices that characterize a community” (p. 278). Thorne et al. (2004) cite one of the ‘best examples’ of the integration of teaching and research as leading to a process of inquiry. Such studies often build upon “relatively small samples, using such data collection methods as interviews, participant observation, and documentary analysis to articulate a coherent and meaningful account of the experiential knowledge” (p. 3).

According to Haguette (2002), postgraduate studies must familiarise students with epistemological and methodological principles for knowledge generation. If research underlies the centrality of the Master's degree, it is necessary to pay more attention to its theoretical, empirical, and methodological demands. However, "many programs are silent regarding the requirement about the empirical nature of the dissertation, which also requires the theoretical-methodological field exercise" (Haguette, 2002, p. 376).

Wangenge-Ouma et al. (2015) observe that lecturers at EMU show little commitment to research. They note that, "from a remuneration point of view, it is more lucrative to follow a teaching track than a research career track" (p. 136). Wangenge-Ouma et al. (2015) add that, less than 100 of the 1700 academic staff at EMU have chosen the research career track. Hockey (1996) asserts that a good supervisor-student relationship is a key factor in students' success or failure in their studies or research. Therefore, supervision is concerned with the mechanics of ensuring that students are making good progress towards completion.

Conclusion

There is a need for a strong research-teaching nexus, which refers to the "relationships and interactions that may exist between teaching and research in HE, through curriculum designs and teaching practices" (Covele, 2017, p. 1). The findings of our study show that a large number of Master's in Education dissertations defended at EMU are not methodologically consistent, although some of the results may be useful for reflection on methodological consistency. Thus, these studies do not lay a reliable foundation for future research or interventions for school improvement. The findings reinforce the claim that Mozambican universities "are weak and informal" (Zavale and Macamo, 2016, p. 257).

Zavale (2013) compared the pro-liberal curricula introduced in the 2000s in Mozambique with those from the 1990s, and identified differences and specificities. He states that the 1990s curricula were mainly disciplinary based, insular and rigid, and based on a-social realist epistemology. In contrast, the 2000s pro-liberal curricula are mainly interdisciplinary, hybrid, flexible, centred on practical/professional knowledge or skills, and inspired by a socio-constructivist epistemology and by claims of socio-economic relevance (Zavale, 2013).

Empirical evidence on methodological consistency at EMU should be of interest to the entire academic community, researchers, policymakers, and decision-makers. The lack of historical and experimental research noted by this study weakens the methodological options adopted by students. The historical design uses experiences of the past to understand the present and possibly project the future, whereas experimental research is expected to recommend measures to address a specific problem.

Although the results of this research cannot be generalised to the entire university, they suggest that migration from a teaching-centred to a research-based university demands sound theoretical and methodological preparation of researchers, lecturers and students, so that research becomes a practice and an important part of the university's organisational culture. Such migration should not only be an intention but also practice and, therefore, part of the university culture.

Recommendations

The supervision literature indicates that ethical, technical, and methodological problems can be minimised or prevented if all the participants in the relationship strive to enter it with clear expectations of their respective roles and the rules for their interaction (Goodyear et al., 1992). In particular, students require guidance on when to stop data collection and analysis, when to start drafting the dissertation and how to structure it. Therefore, supervisors are expected and assumed to be guides and critical friends (Hockey, 1996).

The findings of this study highlight the need for in-depth research to capture and explore perceptions of the types of educational research for future academic interventions. According to Zavale and Langa (2018), developing countries in Africa suffer from double neglect, not only because they are under-researched, but are also ignored when research on them is produced. Thus, concerns about the quality of training, especially in postgraduate studies, should not only be located within the borders of the university and the country, but also a broader agenda, especially since the modern world is a global village, with professionals moving from one place to another. It is, therefore, possible to take advantage of synergies and different experiences in research capacity building in postgraduate studies between universities located in the country, but also with those of other countries.

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