

## Methodological Flaws: A Review of Sample Master Theses

### Abstract

*This paper reports results of a review of Master theses from four academic units at the College of Education and Behavioral Studies, Addis Ababa University, Ethiopia. The purpose of this review was to explore and reflect on the appropriateness of research designs of Masters theses across four academic units. The review focused on the research designs, tools, methods of data analyses, and sampling used in the theses. A total of 121 Master theses were randomly selected. The review found similar research designs adopted by theses across each academic unit. Findings common to the theses under review include: qualitative data analysis was hardly explained using appropriate methods of qualitative data analysis. In addition, in most of the theses, the sample size was not determined and justified using the proper sample size calculation formula or justification. Therefore, there is a need for the college and academic units on how the research course instructors and supervisors support students to craft their research designs properly. Finally, the researchers suggest that more studies of this kind need to be conducted in the broader context in other higher education institutions in order to build up a more coherent picture of the area.*

**Keywords: methodological flaw, MA thesis, appropriateness, research design, and academic units**

## 21 BACKGROUND OF THE STUDY

22 The role of higher education institutions in knowledge and skills creation and dissemination  
23 is paramount (Yizengaw, 2004). Abbott and Doucouliagos (2004) argue that higher  
24 education institutions are the foundation for the research and human capital generating  
25 process. These days, the quality and quantity of scholarly research outputs produced by  
26 academics and their students are one of the principles set to evaluate the research output of  
27 higher education institutions (Cadez, Dimovski, & Zaman Groff, 2017; Ngulube, 2005).  
28 Similarly, the issue of quality research output is an area of concern in the Ethiopian higher  
29 education institutions (Office of the Academic Vice President Addis Ababa University, 2015;  
30 Woldegiyorgis, 2017). The Ethiopian Higher Education Proclamation specifies that teaching,  
31 conducting research and rendering community services are central to the mission of higher  
32 education institutions (The Federal Democratic Republic of Ethiopia, 2009). According to  
33 Kahsay (2012), quality research outputs in higher education are vital for a country's  
34 economic, social, and political development. In view of this, higher education institutions are  
35 expected to carry out scientific research using a sound research methodology, which is the  
36 focus of this review.

37 The Ethiopian government has emphasized the role of research in higher education plays in  
38 the economic growth and development of the country in the Growth and Transformational  
39 Plan II (GTP) (The Federal Democratic Republic of Ethiopia, 2016). As specified in the  
40 GTP-II, "The direction of the next five years plan is to ensure quality and relevance in the  
41 public and private higher education institutions" (The Federal Democratic Republic of  
42 Ethiopia, 2016, p. 185). The GTP-II further stipulated that universities need to plan "to  
43 improve the quality of education and research activities in order to supply competent human  
44 power for the industrial sector in leadership, engineering and science fields"(p. 143). In this  
45 context, Addis Ababa University (AAU), which is the oldest and the biggest public university  
46 of the country and has been engaged in teaching, research and community service activities  
47 since its establishment in 1950. The AAU strategic plan is underpinned by its mission to  
48 become a premier research university in Africa (Addis Ababa University, 2011; Addis Ababa  
49 University, 2012; Bisrat, 2013; Kibret & Kebede, 2016). The quality of research outputs  
50 apparently helps the university to achieve its mission, aspiration to become well known  
51 higher education research institution of the country.

52 As part of tackling both local and global pressures, Ethiopia has increased the number of its  
53 higher education institutions from two to eight in 1999 and currently there are to more than  
54 forty public universities (Ministry of Education, 2016). Despite the tremendous expansion,  
55 there is a prevailing chorus of complaint among stakeholders about the *quality of*  
56 postgraduate research outputs (Bisrat, 2013; Woldegiyorgis, 2017). To approach the  
57 problem, Addis Ababa University, was one of the public universities that engaged to take the  
58 leading role in research activities (Kibret & Kebede, 2016; The Federal Democratic Republic  
59 of Ethiopia, 2016). AAU is witnessing a significant increase in the number of postgraduate  
60 students and research (Addis Ababa University, 2011; Kibret & Kebede, 2016). The  
61 increase in the number of postgraduate students was from 211 in 2000 (Education  
62 Management Information Systems (E. M. I. S), 2000) to 17,738 in 2019 (Addis Ababa  
63 University, 2019) at AAU requires attention to be placed on the research training and quality  
64 of output for the institution. In Ethiopian public universities and AAU as well, postgraduate  
65 research output is considered as the final thesis report of a student when it meets university  
66 requirements and is approved by the thesis examining board. Approved theses are publicly  
67 available (Addis Ababa University School of Graduate Studies, 2012). However, achieving  
68 quality research outputs is a complex task, and little is known about the AAU learning and  
69 teaching of research study design as one component that may contribute to this end.  
70 Therefore, this review explores and reflects upon the appropriateness of research designs of  
71 Masters theses across four academic units: Department of Curriculum and Instruction, and  
72 Department of Educational Planning and Management, Department of Special Needs, and

**Comment [QU1]:** If the university has Doctoral programs, it may be key to mention justification of the choice of MA theses.

73 School of Psychology.

74 **Review of literature**

75 In the journey of research, crafting an appropriate study design and addressing the proposed  
76 research question is not an easy task for postgraduate students and beginner researchers  
77 (Dawson, 2002; Jonker & Pennink, 2010). This entails, the selection of research design is  
78 essential to taking up a research project so that the conclusion serves the purpose for which  
79 the project is undertaken. In line with this, Jonker and Pennink (2010) argue that “it is not  
80 surprising that in many studies – directed either at regular students, teachers or doctoral  
81 students – methodology forms a difficult, and preferably avoided, a subject of conversation”  
82 (p. 21). In any academic journey, in order to carry out a quality piece of research, careful  
83 choices of methodology and methods are the key to success. However, most of the time the  
84 term ‘methodology’ and ‘method’ and ‘design’ are often used erratically and inconsistently  
85 among the graduate students (Cohen, Manion, & Morrison, 2011; Dawson, 2002; Jonker &  
86 Pennink, 2010).

87 A methodology is a justification for the research approach and the lens through which the  
88 analysis occurs (Howell, 2013). Said another way, a methodology describes the general  
89 research strategy that outlines how research is to be undertaken, whereas methods identify  
90 means or modes of data collection (Howell, 2013). Similarly, Cohen et al. (2011) pointed out  
91 that “Research methodology (approaches and research styles, e.g. survey; experimental;  
92 ethnographic/naturalistic; longitudinal; cross-sectional; historical; correlational; ex post facto)  
93 (p. 79) whereas “methods, we mean that range of approaches used in educational research  
94 to gather data which are to be used as a basis for inference and interpretation, for  
95 explanation and prediction” (p. 47). Kothari (2009) further added research methods refer to  
96 the techniques that are used to carry out research. On the other hand, the same author  
97 explained research methodology as a means to systematically solve the research problem,  
98 and it is a science of studying how research is done scientifically (Kothari, 2009). According  
99 to Kothari (2009), a methodology is broader than research methods.

100 Thus, when we talk of research methodology we not only talk of the research  
101 methods but also consider the logic behind the methods we use in the context of  
102 our research study and explain why we are using a particular method or technique  
103 and why we are not using others so that research results are capable of being  
104 evaluated either by the researcher himself or by others(p. 8).

105 Drawing on Kothari (2009)’s thinking, a methodology is broader than methods because  
106 methodology covers the theoretical and philosophical assumptions of particular interest of  
107 research while methods are not. Saunders (2011) pointed out the distinction between the  
108 two terms, where methodology refers to the theory of how research should be undertaken,  
109 including the theoretical and philosophical assumptions upon which research is based, (p.  
110 3). On the other hand, methods refer to techniques and procedures used to obtain and  
111 analyse data, including for example questionnaires, observation, interviews, and document  
112 analysis as well as both quantitative (statistical) and qualitative (non-statistical) analysis  
113 techniques Saunders (2011). In the academic context, the methodology is often said to be  
114 the most relevant section of the project (Kelley, Clark, Brown, & Sitzia, 2003), yet in  
115 everyday research practice, it is not always treated accordingly.

116 A significant number of research outputs confuse *research design* with *methods* and  
117 *methodology*. It is common to see research design treated as a means of data collection  
118 rather than the guiding principle of the inquiry. Most of the time “research design” and  
119 “methodology” are incorrectly used interchangeably even though they are distinct concepts  
120 (Marczyk, DeMatteo, & Festinger, 2005, p. 22). Marczyk, DeMatteo, and Festinger (2005)  
121 further explain that “methodology refers to the principles, procedures, and practices that  
122 govern research, whereas research design refers to the plan used to examine the question  
123 of interest” (p. 22). Leedy and Ormrod (2015) concur further strengthening the distinction

124 between the two terms as, “the research design provides the overall structure for the  
125 procedures the researcher follows, the data the researcher collects, and the data analyses  
126 the researcher conducts. Simply put, research design is planning” (p. 92). A research design  
127 is a conceptual structure and blueprint for data collection, measurement, and analysis of the  
128 data (Kothari, 2009). It is guided by the idea of ‘fitness for purpose’ (Cohen et al., 2011, p.  
129 78). In general, the research design explains what kind of data is required, what kind of  
130 methods are going to be employed for collection and analysis and overall, it tells how all of  
131 this is going to answer the proposed research questions.

## 132 **The context of the study**

133 Nowadays, there is a prevailing complaint among university academics and leaders about  
134 the quality of MA research papers of graduate students at AAU (Kibret & Kebede, 2016;  
135 Office of the Academic Vice President Addis Ababa University, 2015). For instance,  
136 Woldegiyorgis (2017) argued that “Given the quality of graduates, and of those admitted into  
137 graduate programs, the research capacity of Ethiopian universities is in serious jeopardy” (p.  
138 19). The researchers teaching experience and examining several MA theses examiners at  
139 different departments of the College of Education and Behavioural Studies of Addis Ababa  
140 University also confirms Woldegiyorgis’s argument. This situation inspired the team to  
141 explore and reflect on the postgraduate students’ MA theses at AAU. In addition to this, the  
142 University Senate legislation in article 95 (1) stipulated that “A thesis/dissertation shall  
143 constitute an individual’s effort in academic pursuits to identify and analyse problems by  
144 applying sound methodology”(Addis Ababa University, 2013b, p. 103). Hence, the  
145 researchers believed that a critical review of AAU students MA theses’ research design and  
146 methods section would help both the institution and the university system participants such  
147 as, students, academics, and institutional leaders to see and feel the gaps to improve the  
148 quality of postgraduate research outputs in the future. With this in mind, the study is deemed  
149 to answer the following research questions.

## 150 **Research questions**

- 151 1. What research designs and methods are being employed in AAU MA theses?
- 152 2. How appropriate were research designs and methods applied in AAU MA theses?
- 153 3. What are the implications of this review for quality postgraduate research?
- 154 4.

## 155 **METHODS AND MATERIALS**

### 156 **Study design and setting**

157 This study used document analysis as a research method. According to Bowen (2009)  
158 “Document analysis is a systematic procedure for reviewing or evaluating documents both  
159 printed and electronic (computer-based and Internet-transmitted) material”(p. 1). In  
160 qualitative research, like other analytical methods, document analysis needs data to be  
161 studied and interpreted in order to elicit meaning, gain understanding, and develop empirical  
162 knowledge (Corbin & Strauss, 2008). Martin and Stella (2007) note that the policy document,  
163 research papers, and records give the researchers access to the necessary information and  
164 insights into the issue under investigation. In line with this idea, a thorough review of MA  
165 theses of four academic units at Addis Ababa University was made. The methodology  
166 section of the theses was analysed thematically, with themes drawn from literature on the  
167 use of appropriate methodology in a research project. Finally, the findings of the review of  
168 the theses from each sample academic unit was presented and its implication was also  
169 forwarded.

**Comment [QU2]:** State justification for this choice and not any other for example Doctoral theses.

170 This study was conducted at one of the higher learning institutions, Addis Ababa University  
 171 (AAU), Ethiopia. Founded in 1950 as University College of Addis Ababa, AAU is the biggest  
 172 and oldest public university of the country, with a student population of 51,500 (Addis Ababa  
 173 University, 2013a). AAU has 10 colleges and approximately 70 departments delivering  
 174 undergraduate and graduate programs. Among the ten colleges, the College of Education  
 175 and Behavioural Studies was selected as the study area because it is the oldest college of  
 176 AAU (Addis Ababa University, 2013a; Addis Ababa University, 2013b). The has also  
 177 experienced, and senior faculties are engaged in research and teaching activities. In  
 178 addition, the College has committed itself in preparing teachers, educational policy analysts,  
 179 educational planners, educational managers/leaders, human resource developers, and  
 180 trainers (Geberew & Demoze, 2014). Therefore, much is expected from the college in terms  
 181 of maintaining quality education, which comprises quality research outputs as well. The  
 182 population of the study was all the academic units delivering post-graduate education  
 183 programs in the college.

### 184 Sampling

185 Determining appropriate sample size depends upon the nature of the population of interest  
 186 or the data to be gathered and analysed, and subject availability (Best & Kahn, 2003; Leedy  
 187 & Ormrod, 2015) & Kahn 1993). Accordingly, the sample size for the review was determined  
 188 based on the recommendation by Kothari (2009); (Kumar, 2019); Mills and Gay (2012). The  
 189 review considered MA theses in the College from 2014-2018 as represented in Table 1  
 190 below.

191 **Table 1: Total MA papers from 2014-2018 across the academic units**

Academic units	2014	2015	2016	2017	2018	Total
Educational management and planning (EDPM)	65	20	29	23	5	142
Curriculum & instruction (CI)	34	12	12	4	0	62
Psychology	77	36	8	11	3	135
Special needs education (SNE)	32	12	12	8	0	64
Total	208	80	61	46	8	403

192 As indicated in Table 1, from 2014 to 2018, a total of 403 MA theses were found in the  
 193 database of the university.

194 As specified in the Addis Ababa University School of Graduate Studies (2012) thesis writing  
 195 and grading grades guideline and the University Senate legislation, MA theses are rated as  
 196 Excellent  $\geq 85$  A; Very Good  $75 \leq X < 85$  B+ ; Good  $60 \leq X < 75$  B; Satisfactory  $50 \leq X < 60$   
 197 C+ ;Fail  $< 50$  F. From the researchers' personal experience, it is only the thesis which is  
 198 rated as 'excellent' or 'very good' that is available in the university database for public  
 199 access. As recommended by Mills and Gay (2012), for a descriptive study, "it is not  
 200 uncommon to sample 10% to 20% of the population" (p. 139). However, the researchers  
 201 sampled 30% of the total MA papers that are found in the database of the university to get a  
 202 wider picture of the issues of the review. This idea is also supported by Leedy and Ormrod  
 203 (2015), and Best and Kahn (2003) who argued having a large sample size is yet essential.  
 204 Therefore, of 403 MA theses, 30% of the theses was sampled, and finally, 121 MA theses  
 205 were selected for the review (see Table 2).

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**Comment [QU3]:** Follow journal's guidelines on text citations. This may not have been done correctly.

208 **Table 2: Sampled papers**

Academic units	2014	2015	2016	2017	2018	Total
Educational management and planning (EDPM)	20	6	9	7	2	43
Curriculum & instruction (CI)	10	4	4	1	0	19
Psychology	23	11	2	3	1	41
Special needs education (SNE)	10	4	4	2	0	19
Total	62	24	18	14	2	121

209 As can be seen from Table 2, after determining the sample size, the required total number of  
 210 MA thesis (n=121) were proportionally drawn from each academic unit using Pandey,

211 Ashraf, and Verma (2012)'s formula:  $n_i = \frac{N_i}{N} n$

212 Where,  $n_i$  = the number of MA theses required to be selected from a given academic unit  
 213 with a total number of  $N_i$  MA theses, and the  $n$ =the total number of MA theses sampled from  
 214 the four academic units with a total of MA theses= $N$ . Finally, the required MA theses were  
 215 selected using the simple random technique from each academic unit.

216 **Data gathering instrument**

217 Document analysis was employed as a tool for data collection. As Bowen (2009) argued,  
 218 document analysis is a systematic procedure for reviewing both printed and electronic  
 219 materials. The documents which might be used for reviewing study have a variety of forms  
 220 such as "...manuals; background papers; books and brochures; diaries and journals; event  
 221 programs (i.e., printed outlines); letters and memoranda; maps and charts; newspapers...  
 222 (Bowen, 2009, p. 27). This review utilised Addis Ababa University graduate students' MA  
 223 theses, and considered associated legal documents, for instance, thesis assessment and  
 224 grading guidelines, the University's Senate legislation, Ethiopian Higher Education  
 225 Proclamation, and the Ethiopian Growth and Transformational Plan-II.

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238 **RESULTS AND DISCUSSION**

239 This section presents the results and discussion pertaining to the data that emerged from  
 240 the review of the MA theses. The section outlines the findings of each of the four Academic  
 241 Units. The first academic unit is the School of Psychology. The findings of the review  
 242 encompassed the research design used, tools employed, data analysis used, and the  
 243 sampling process of the theses as indicated in Table 3.

244 **Table 3: Reviewed MA theses in the School of Psychology**

Research designs used (n=41)	Tools employed						Data analysis used				Sampling		
	Questionnaire	Test	Interview	Focus group discussion	Document analysis	Observation	Descriptive statistics	Inferential analysis	Both	Thematic	determined with reasonable	determined without reasonable justification	not justified
Cross-sectional design (n=9)	9	1	2	-	-	-	1	7	1	-	3	-	6
Descriptive (n=8)	8	-	3	2	-	2	2	4	1	5	-	3	
Qualitative (n=6)	1	-	6	1	1	2	-	-	1	5	4	-	2
Merged/Fused (n=5)	4	1	2	2	2	1	-	1	2	2	2	1	2
Correlational design (n=4)	4	-	1	-	-	-	-	-	4	-	2	-	2
Mixed (n=3)	3	1	2	-	-	1	1	1	1	1	1	1	1
Quantitative (n=3)	3	-	1	-	-	-	-	1	2	-	1	-	2
Unstated (n=3)	3	-	-	-	-	-	-	2	1	-	3	-	-
Total	35	3	17	5	3	6	4	14	15	9	21	3	18

245  
 246 As indicated in Table 3, the MA theses in the School of Psychology predominately used  
 247 cross-sectional, descriptive, and qualitative research designs. Other designs such as  
 248 correlational design, mixed methods, and quantitative research designs were also used in  
 249 the methods section of the theses. From the review, it has also been learned that students  
 250 used two different research designs, that is fused or merged different research designs in a  
 251 study. In some theses, the research designs and procedures were clearly explained, but  
 252 there were discrepancies in the use of appropriate terminology. For instance, cross-sectional  
 253 study design was used with different terms such as cross-sectional survey research design,  
 254 cross-sectional mixed methods design, cross-sectional design with the theses in School of  
 255 Psychology. In a similar view, the remaining research designs, for example, descriptive,  
 256 correlational, and others were given different names. This leads us to the question of  
 257 whether students understood the concept of study design clearly or not. The use of two  
 258 different designs at a time would also justify this. For instance, in some theses, two different  
 259 designs were stated as the designs of the study. For example, 'descriptive survey and <sup>1</sup>  
 260 correlation research design'; 'descriptive and explanatory research design'; 'exploratory  
 261 sequential design and cross-sectional survey design'; 'sequential explanatory mixed method  
 262 design and cross-sectional mixed method design'; 'quantitative and qualitative design and

<sup>1</sup> Indicates the use of two study designs at a time in an MA thesis.



263 descriptive survey design' was claimed as the research designs in some of the theses. Also,  
 264 the research designs were hardly explained in a few theses (see Table 3). From this, it could  
 265 be argued that students seem to lack some understanding of how to craft appropriate study  
 266 design.

267 With regard to the study tools used, questionnaires and interviews were largely used. For the  
 268 quantitative data analysis, both inferential and descriptive statistics were employed even  
 269 though inferential statistics commonly used in the method sections of the theses. The data  
 270 collection tools such as interview, focus group discussion, document analysis, and  
 271 observation were utilised for qualitative data collection. However, in most of the theses,  
 272 methods of qualitative data analysis were not stated. Very few theses, (9 out of 36 theses)  
 273 had explained "thematic analysis" as the method of the qualitative data analysis (see Table  
 274 3). The methods of analysis were inclined to the descriptive and inferential analyses with  
 275 little attention to qualitative data analysis. If the students were using the qualitative data as  
 276 part of their study, they would not have listed the tools as a means of qualitative data  
 277 collection. Sometimes, qualitative data collection instruments were used arbitrarily without  
 278 serious consideration on how to analyse and use the data that collected through qualitative  
 279 data gathering instruments such as interview, observation, document analysis, and focused  
 280 group discussion.

281 In order to examine the sampling employed, the sample theses were grouped into three  
 282 categories: reasonable justification, without reasonable justification, and without justification.  
 283 21 out of 41 MA theses, determined their sample size with justification. A significant number  
 284 of the theses, nearly 18 out of 41 theses did not determine and justify their sample size (see  
 285 Table 3). Sampling issues are also at the heart of research. As Leedy and Ormrod (2015)  
 286 argued, "Sampling is a concern for any researcher, but it is especially so for the researcher  
 287 who wants to draw inferences about a large population" (p. 176). This shows, study power  
 288 determination is an area of concern and students need support on how to determine sample  
 289 size. The respective academic unit is expected to equip students with with the necessary  
 290 knowledge and skills in determining their study sample size in the future.

291 In the previous discussion, we have seen the review of theses from the School of  
 292 Psychology. The next discussion is about the finding of the review of MA theses from the  
 293 Department of Educational Planning and Management (EDPM) as indicated in Table 4.

294 **Table 4: Reviewed MA theses in the Department of EDPM**

Research designs used (n=43)	Tools employed						Data analysis used				Sampling		
	Questionnaire	Interview	Focus group discussion	Document analysis	Observation	test	Descriptive statistics	Inferential analysis	both	thematic	determined with reasonable justification	determined without reasonable justification	not justified
Descriptive (27)	27	23	8	13	6	-	21	2	4	8	3	5	19
Merged/fused design (7)	7	7	1	2	1	-	4	-	3	3	2	-	5
Mixed approaches (4)	4	4	-	-	-	-	3	-	1	1	1	1	2
Correlational (3)	3	2	-	1	1	1	1	2	-	-	2	1	-



Explanatory research design (1)	1	-	-	-	-	-	-	1	-	-	1	-	-
Quasi-experimental design (1)	1	1	-	-	1	1	-	1	1	-	-	-	1
Total	43	37	9	16	9	2	29	6	8	13	9	7	27

295

296 As shown in Table 4, most of the MA theses from the Department of Educational Planning  
 297 and Management (EDPM) employed a descriptive study design. From 43 MA theses, 27  
 298 used descriptive research designs. However, within the same department, different terms  
 299 were used to explain the descriptive research designs, namely, 'descriptive survey method,'  
 300 'descriptive survey research,' 'descriptive survey research method,' 'descriptive survey  
 301 study,' 'descriptive research,' and 'descriptive survey design.' There is no problem with the  
 302 use of different terms if the students clearly identify the concept behind the terms. For  
 303 instance, if students understand the difference between, design, methods, and approaches,  
 304 using different terms interchangeably do not create any problem as the concept is the main  
 305 guiding principles. However, the problem lies if the students misunderstood the difference  
 306 between those terms, using different terms without understanding the concept will apparently  
 307 affect the research processes. This is evident from the review that students did not clearly  
 308 conceptualise the terms as the research designs, tools employed and methods of data  
 309 analysis were not properly aligned (See Table 4). In line with this, Velentgas, Dreyer,  
 310 Nourjah, Smith, and Torchia (2013) argued that "the choice of study design often has  
 311 profound consequences for the causal interpretation of study results" (p. 21). In spite of this,  
 312 some of the theses employed fused/merged research designs (see Table 4), which refers to  
 313 the use of more than one study design. This may infer that either student did not fully grasp  
 314 the knowledge of study design or did not get supervision. However, the Addis Ababa  
 315 University Academic Senate legislation specifies, "The academic advisor of the graduate  
 316 student provides advice to the student both on general academic matters such as course  
 317 enrolment and choice of specialization and on the organization and supervision of the  
 318 student's research and writing and/or or preparation for a comprehensive/qualifying exam  
 319 (Addis Ababa University, 2013b, p. 83). Therefore, advisors are expected to guide students  
 320 to properly structure their study design as it is a foundation of the analysis and interpretation  
 321 for the result of a study (Leedy & Ormrod, 2015).

322 Concerning the data collection tools used, questionnaires and interviews were mainly  
 323 utilised. Other tools such as document analysis, focus group discussion, observation, and  
 324 testing were employed as additional means of data collection. Almost, all the theses  
 325 employed more than one tool for data collection except one study (Explanatory research  
 326 design, see Table 4), which used only questionnaire as data collection instrument. Despite  
 327 the use of different data collections tools, the theses widely employed descriptive statistics  
 328 (frequency, percentage, mean, and standard deviation) with few inferential statistics, and  
 329 thematic analysis for quantitative and qualitative data analysis respectively. If we take the  
 330 descriptive study design (see Table 4), as an example, 23 interviews, 13 document  
 331 analyses, eight focus group discussions, and six observation utilised in the 27 MA theses.  
 332 These are all qualitative data collection tools. However, only eight theses explained 'thematic  
 333 analysis' as the methods of qualitative data analyses, and the remaining were silent about its  
 334 methods of analyses. Therefore, from the review, it appears to us that students lack full  
 335 understanding about the methods of qualitative data analysis, that is, how to analyse the  
 336 qualitative data collected through different tools (interviews, document analysis, focused  
 337 group discussion, and observation). In addition, the qualitative data were also rarely  
 338 analysed and interpreted in the body of the theses. Most of the results of the theses were  
 339 reported using descriptive statistics (percentage, frequency, mean and standard deviation),

340 and a very few theses (6 out of 43 theses) employed analytic analysis.

341 As shown in Table 4, out of 43 theses, the majority (n=27) did not justify the sample size  
 342 employed in the studies. They merely mentioned the simple size, for example, 317 (thesis  
 343 32), 347 (thesis 33), and 362 (thesis 13), and so on. A few theses, 7 out of 43 (see Table 4)  
 344 determined the sample size without reasonable justification. At some point, the students tried  
 345 to mention the percentage, to mention some, 40% of the population (N=547; thesis 1), 50%  
 346 of the population (N= 1353; thesis 22), and 63% of the population (N=448; thesis 7) and so  
 347 on without any justification of why such a figure was used to determine the study power.  
 348 However, 9 theses did determine their study power with reasonable justification. Overall, the  
 349 sampling size determination was another area of concern for this academic unit.

350 The finding of the review of MA theses from the Department of Curriculum and Instruction is  
 351 presented in Table 5 below.

352 **Table 5: Reviewed MA theses of the Department of Curriculum and Instruction**

353

Research designs used (n=19)	Tools employed					Data analysis used				Sampling		
	Questionnaire	Interview	Focused group discussion	Document analysis	Observation	Descriptive statistics	Inferential analysis	both	thematic	determined with reasonable justification	determined without reasonable justification	not justified
Descriptive (n=11)	11	9	4	7	3	9	1	1	5	1	5	5
Mixed (n=5)	5	5	4	2	1	5	-	-	2	-	1	4
Qualitative (n=3)	3	3	1	-	1	2	-	-	1	-	-	3
Total	19	17	9	9	5	16	1	1	7	1	6	12

354

355 Similar to the Department of Educational Planning and Management, the MA theses in the  
 356 Department of Curriculum and Instruction mainly used descriptive study design. As  
 357 displayed in Table 5, 11 out of 19 theses employed descriptive study design followed by  
 358 mixed methods (n=5), and qualitative study design (n=3). Nevertheless, the research  
 359 designs employed were explained by using different terms as stated in the footnotes. In fact,  
 360 this could be attributed to different assumptions such as knowledge of study design  
 361 (confusion on the difference between, study design, methods, and approaches), language  
 362 problem (vocabularies on technical research terms), lack of proper supervision, lack of  
 363 critical reading and so on. A similar problem was identified in EDPM and Psychology  
 364 academic units.

365 As indicated in Table 5, questionnaire and interview were the primary tools employed in the  
 366 theses followed by document analysis, focus group discussion, and observation. Descriptive  
 367 statistics was mainly used as the methods of data analysis. Even though different tools of  
 368 qualitative data collection were also used, little attention was given to methods of qualitative  
 369 data analysis. It is unusual to employ a closed questionnaire as a data collection tool and  
 370 descriptive statistics as methods of data analysis in qualitative study design (see Table 5). In  
 371 line with this idea, Leedy and Ormrod (2015) argued that "Qualitative research involves  
 372 looking at characteristics, or qualities, that cannot be entirely reduced to numerical values. A  
 373 qualitative researcher typically aims to examine the many nuances and complexities of a  
 374 particular phenomenon" (p. 24). Marczyk et al. (2005) also further argued that "qualitative  
 375 research is characterised by the fact that the researcher works on the basis of an open  
 376 question" (Marczyk et al., 2005, p. 78). From this, the students could not have employed

377 numerical values when only the qualitative approach was cited as the study design. This  
 378 shows that students lack a full understanding of the study design and appropriate tools need  
 379 to be utilised for that design.

380 Regarding the sample size determination, 12 out of 19 theses could not determine their  
 381 study power. Only one thesis did determine the sample size with reasonable justification.  
 382 The remaining 6 theses attempted to determine their sample size using percentage, for  
 383 example, 20% of the population (N=871; thesis 3), 70% of the population (N=1082; thesis  
 384 14), 46.6% of the population (N=494: thesis 6), but, they did not justify the proposed percent  
 385 for determining the sample size.

386 The finding of the review of MA theses from the Department of Special Needs Education is  
 387 presented in Table 6 that follows.

388 **Table 6: Reviewed MA thesis of the Department of Special Needs Education**

Research designs used (n=19)	Tools employed					Data analysis used				Sampling		
	Questionnaire	Interview	Focused group discussion	Document analysis	Observation	Descriptive statistics	Inferential analysis	both	thematic	with reasonable justification	determined without	not justified
Qualitative (n=10)	4	10	8	2	10	4	-	-	5	1	-	9
Mixed (n=5)	3	4	2	3	3	4	-	1	-	-	1	4
Descriptive (n=2)	1	1	-	-	-	1	1	-	-	-	-	2
Merged/fused (n=2)	2	2	-	1	-	1	1	-	-	1	-	1
<b>Total</b>	<b>10</b>	<b>17</b>	<b>10</b>	<b>6</b>	<b>13</b>	<b>10</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>16</b>

389

390 As opposed to the previous academic units, which were characterised by more of  
 391 quantitative in nature, the theses from this academic unit are marked by qualitative research  
 392 methods (see Table 6). As can be seen from Table 6, from 19 theses, 10 of them employed  
 393 a qualitative research method. However, different terms were used to explain the qualitative  
 394 research method as the main design of the study. In two MA theses, more than one study  
 395 design was reported. Similar problems have been identified from the other three sample  
 396 academic units.

397 With regard to data collection tools employed, interview and observation were used as the  
 398 main tools followed by focus group discussion, questionnaire, and document analysis. Even  
 399 though most of the theses used different qualitative data collection tools, only five theses  
 400 explained 'thematic analysis' as a technique of qualitative data analysis. From the review, it  
 401 seems students could not acquire enough research knowledge and skills because, in most  
 402 of the theses, students preferred to keep aside from analysing and reporting the results of  
 403 qualitative data. They even preferred to quantify the qualitative data and report using  
 404 descriptive statistics (frequency and percentage). The data in Table 6 also confirm this  
 405 circumstance, where four theses employed descriptive statistics in qualitative research  
 406 methods.

407 When it comes to sampling, 12 out of 19 theses did not determine and justify the number of  
408 research participants (see Table 6). Only two theses scientifically determined their sample  
409 size using appropriate sample size determination formula. Even if, unlike quantitative,  
410 sample determination for qualitative research is not rigid in most cases, yet a researcher  
411 needs to justify the number of participants needed for the study. Concerning this, Morse  
412 (2000) propose the following sample determination for qualitative research:

413 If, when using semi-structured interviews, one obtains a small amount of data per  
414 interview question (i.e., relatively shallow data), then to obtain the richness of data  
415 required for qualitative analysis, one needs a large number of participants (at least  
416 30 to 60). If, on the other hand, one is doing a phenomenological study and  
417 interviewing each person many times, one has a large amount of data for each  
418 participant and therefore needs fewer participants in the study (perhaps only 6 to  
419 10). Grounded theory, with two to three unstructured interviews per person, may  
420 need 20 to 30 participants...(pp. 4-5).

421 From Morse (2000)'s argument, a researcher also needs to justify the sample size for the  
422 qualitative research though this was not the case for most of the sample theses of this  
423 academic unit.

## 424 **CONCLUSION AND IMPLICATIONS**

425 This paper reported a review and document analysis of the content of MA theses of four  
426 academic units at the College of Education and Behavioural Studies, Addis Ababa  
427 University. The analysis focused mainly on the study design used, tools employed, methods  
428 of analyses utilised, and sampling determination. The results of the review indicated that the  
429 theses from each academic unit had almost similar and repetitive study design. For instance,  
430 the MA theses from EDPM and Curriculum and Instruction academic units were  
431 characterised by descriptive research designs. The theses of the Psychology academic unit  
432 employed more of cross-sectional and correlational research designs while Special needs  
433 followed a qualitative research method. This repetitive use of similar study design in each  
434 academic unit could be ascribed to different assumptions such as organisational culture (the  
435 influence of the research designs of previous MA theses available as references), the  
436 influence of instructors who offer research methodology courses, and the influence of  
437 supervisors, and students' study design preferences, and so forth. From the four academic  
438 units, the theses from the School of Psychology were characterised by analytical research  
439 whereas the rest followed a descriptive research approach.

440 The review also revealed that different tools were used to collect both quantitative and  
441 qualitative data. However, the qualitative data analysis and report of the results were hardly  
442 discussed using appropriate methods of qualitative data analysis, that is, thematic analysis  
443 and emerging themes from the data.

444 From the review of the theses, sampling was also found as an area of concern. Most of the  
445 theses from the sample academic units did not determine and justify properly the sample  
446 size of their studies. However, relatively, the theses from the Psychology academic unit  
447 managed to determine the sample of study using appropriate sample size calculation  
448 formula.

449 In general, the review of the MA theses of the sample academic units revealed some  
450 methodological flaws of the theses because the research designs, tools employed, the  
451 analyses used, and sampling of the studies were not well connected. From the finding of the  
452 review, almost the homogenous research design is employed by the students of each  
453 academic unit in writing their theses. The reasons why students used a similar research  
454 design in their respective academic unit left open for further investigation. Students should  
455 be supported with the necessary knowledge and skills on how to craft their research design  
456 properly, and align the research design with tools of data collection and analysis. They need  
457 to be also equipped with how to determine the sample size of the study scientifically. Finally,

458 the researchers suggest that more studies of this kind need to be conducted on this area in  
459 the broader context of other higher education institutions in order to build up a more  
460 coherent picture of the area.

461

UNDER PEER REVIEW

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