

**An exploratory study of translations of the Dewey Decimal Classification
System into South African languages**

by

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DECLARATION

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I hereby declare that *An exploratory study of translations of the Dewey Decimal Classification system into South African languages* is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references. I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.



Mr Gert Johannes Jacobus
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June 2017

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ABSTRACT

This research investigated the feasibility of South African translations of Dewey Decimal Classification (DDC). The study provides an introductory overview of DDC throughout the world, followed by its use in South Africa. The introduction highlights shortcomings and possible solutions – of which translations seem to be the most ideal. This research involved a critical analysis of the literature on DDC translations, a documentary analysis and technology-based research in the form of Google translations and evaluation of parts of Abridged Edition 15 of DDC.

The critical analysis of the literature and the documentary analysis identified problems relating to translations, how translations deal with shortcomings in DDC, the fact that no literature exists on multilingual translations, and the process of translations (including the fact that this is an expensive endeavour). It also revealed information about sponsorship and the mixed translation model.

The technology-based research, using Google Translate for translations of parts of Abridged Edition 15 and the subsequent evaluation of these translations indicated that Google translations were comprehensive and needed minimum editorial effort. Further to this it paved the way for describing a possible workflow for South African translations and indicated that the parts already translated as well as further Google translations can expedite the translation process. A model for South African translations, based on only the cost of the Pansoft translation software was proposed. The mixed model approach, where some languages are used as main languages (schedules, Relative Index terms and the like) and others for Relative Index terms only, was deemed the most appropriate in the South African context.

This led to the conclusion that DDC translations into ten of the official South African languages are indeed feasible. The research supports translations that keep the integrity of DDC intact, with possible expansions based on literary warrant. It is important, though, to get the support of the South African library community and authoritative bodies such as the National Library of South Africa

and/or the Library and Information Association of South Africa (LIASA) to negotiate and sign a contract for these translations.

KEYWORDS

Dewey Decimal Classification, DDC, WebDewey, Abridged Edition 15, Translations, South African languages, Classification, Feasibility, Google Translate, Machine translation

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TABLE OF CONTENTS

DECLARATION	II
ABSTRACT.....	III
KEYWORDS	IV
ACKNOWLEDGEMENTS.....	V
TABLE OF CONTENTS.....	VI
LIST OF FIGURES.....	XV
LIST OF TABLES	XXI
LIST OF ABBREVIATIONS, ACRONYMS AND DEFINITIONS.....	XXVI
CHAPTER 1 INTRODUCTION.....	1
1.1 Background to the study	1
1.1.1 Use of classification systems for bibliographic control	1
1.1.2 General overview of DDC	2
1.1.2.1 Editorial Support System	4
1.1.2.2 WebDewey.....	5
1.1.2.3 Linked data and mappings.....	6
1.1.2.4 Apparent shortcomings in DDC.....	6
1.1.2.4.1 Shortcomings about gender, sexuality and groups of people	7
1.1.2.4.2 Shortcomings about languages and literatures.....	7
1.1.2.4.3 Shortcomings about other subjects.....	8
1.1.2.5 Possible solutions to shortcomings in DDC	8
1.1.2.5.1 Options in DDC.....	9
1.1.2.5.2 Expansions and adaptations.....	9
1.1.2.5.3 Translations	11

1.1.2.5.4 Pansoft translation software.....	12
1.1.3 DDC in South Africa	17
1.1.3.1 South African-related entries in DDC	18
1.1.3.2 Areas for possible expansion and suitable options	20
1.1.3.3 Early South African translations	21
1.1.3.4 Later South African translations	23
1.2 Problem statement	25
1.3 Research questions.....	25
1.4 Purpose of the study	27
1.5 Motivation for the study	27
1.6 Research objectives	28
1.7 Delimitations of the study.....	29
1.8 Significance of the study	30
1.9 Research methodology	31
1.10 Thesis structure.....	32
1.11 Chapter summary	33
CHAPTER 2 CRITICAL ANALYSIS OF REPORTED RESEARCH.....	35
2.1 Introduction.....	35
2.2 General overview and sources on multiple translations.....	37
2.3 Arabic	46
2.4 French.....	47
2.5 German.....	48
2.6 Hindi.....	50

2.7	Icelandic	50
2.8	Indonesian.....	51
2.9	Italian	52
2.10	Korean	53
2.11	Norwegian and Swedish	53
2.12	Persian.....	56
2.13	Russian.....	57
2.14	Spanish.....	58
2.15	Vietnamese.....	59
2.16	Chapter summary	60
2.16.1	Main themes in the literature	60
2.16.2	Challenges relating to translations.....	60
2.16.3	How translations deal with shortcomings in DDC	61
2.16.4	Multiple language translations	62
2.16.5	Directions relating to feasibility	62
CHAPTER 3 RESEARCH METHODOLOGY		64
3.1	Introduction.....	64
3.2	Research objectives	64
3.3	Research type	64
3.4	Research philosophy	65
3.5	Research approach	66
3.6	Research design.....	67
3.6.1	Research purpose.....	67

3.6.2	Research strategy	68
3.6.3	Research methods	68
3.7	Qualitative data segment	69
3.7.1	Data collection and analysis.....	70
3.7.2	Trustworthiness of the data.....	71
3.8	Quantitative data segment.....	71
3.8.1	Preliminary efforts to use DDC summaries and planning of the translation evaluation tool.....	72
3.8.2	Data collection and analysis.....	72
3.8.2.1	Sample size and procedure	73
3.8.2.1.1	000 main class.....	74
3.8.2.1.2	100 main class.....	75
3.8.2.1.3	200 main class.....	76
3.8.2.1.4	300 main class.....	77
3.8.2.1.5	400 main class.....	78
3.8.2.1.6	500 main class.....	79
3.8.2.1.7	600 main class.....	79
3.8.2.1.8	700 main class.....	80
3.8.2.1.9	800 main class.....	81
3.8.2.1.10	900 main class	81
3.8.2.1.11	Tables	82
3.8.2.2	Design of the translation evaluation instrument	83
3.8.2.2.1	Preparation of the sample for evaluation	83
3.8.2.2.2	Evaluation of machine translation systems	86
3.8.2.2.3	Development of the translation evaluation instrument	88
3.8.2.3	Validity and reliability of the data.....	93
3.8.2.3.1	External validity.....	93
3.8.2.3.2	Internal validity	93
3.8.2.3.3	Content validity	93
3.8.2.3.4	Criterion validity	94
3.8.2.3.5	Construct validity	94
3.8.2.3.6	Face validity.....	94

3.8.2.3.7 Reliability	94
3.9 Ethical considerations	95
3.10 Chapter summary	96
CHAPTER 4 DATA ANALYSIS, PRESENTATION AND INTERPRETATION	97
4.1 Introduction.....	97
4.2 The 000 main class.....	98
4.2.1 Knowledge (001).....	98
4.2.2 The book (002).....	102
4.2.3 Systems (003).....	105
4.2.4 Computer science; computer programming, programs, data; special computer methods (004–006).....	108
4.2.5 Bibliographies and catalogs (010 and 011).....	112
4.2.6 Library and information sciences (020, 025, 027 and 028)	116
4.2.7 General encyclopedic works (030–033).....	120
4.2.8 General serial publications (050 and 051).....	124
4.2.9 General organizations and museology (060 and 069).....	127
4.2.10 Documentary media, educational media, news media; journalism; publishing (070)	131
4.2.11 General collections (080 and 081).....	135
4.2.12 Manuscripts, rare books, other rare printed materials (090–099)	138
4.2.13 Summary of the 000 main class	142
4.3 The 100 main class.....	144
4.3.1 Philosophy, parapsychology and occultism, psychology (100–109).....	144
4.3.2 Specific philosophical schools and viewpoints (140–149).....	148
4.3.3 Psychology (150–159)	152
4.3.4 Ethics (Moral philosophy) (170–173).....	156
4.3.5 Summary of the 100 main class.....	160
4.4 The 200 main class.....	161
4.4.1 Religion (200–209).....	161

4.4.2	Christianity (230–239)	165
4.4.3	Christian social and ecclesiastical theology (260–262)	169
4.4.4	Other religions (290–299)	173
4.4.5	Summary of the 200 main class	177
4.5	The 300 main class	178
4.5.1	Social sciences (300–309)	178
4.5.2	Political science (Politics and government) (320 and 323)	182
4.5.3	Economics (330 and 336)	186
4.5.4	Law (340–342)	190
4.5.5	Public administration and military science (350–353)	194
4.5.6	Social problems and services; associations (360, 361 and 364)	198
4.5.7	Education (370, 371 and 378)	202
4.5.8	Commerce, communications, transportation (380, 381 and 384)	207
4.5.9	Customs, etiquette, folklore (390–392)	211
4.5.10	Summary of the 300 main class	215
4.6	The 400 main class	217
4.6.1	Language (400–409)	217
4.6.2	Linguistics (410–419)	221
4.6.3	German and related languages (430 and 439)	225
4.6.4	Other languages (490–499)	229
4.6.5	Summary of the 400 main class	233
4.7	The 500 main class	234
4.7.1	Natural sciences and mathematics (500–509)	234
4.7.2	Mathematics (510–519)	238
4.7.3	Physics (530–539)	242
4.7.4	Biology (570 and 571)	246
4.7.5	Summary of the 500 main class	250
4.8	The 600 main class	251
4.8.1	Technology (Applied sciences) (600–609)	252
4.8.2	Agriculture and related technologies (630–639)	255
4.8.3	Home and family management (640–649)	259

4.8.4	Summary of the 600 main class	264
4.9	The 700 main class	265
4.9.1	The arts (700–709).....	265
4.9.2	Architecture (720–729).....	269
4.9.3	Printmaking and prints (760–769)	273
4.9.4	Photography, computer art, cinematography, videography (770–779). 277	
4.9.5	Summary of the 700 main class	281
4.10	The 800 main class	282
4.10.1	Literature (Belles-lettres) and rhetoric (800–809)	282
4.10.2	Literatures of other specific languages and language families (890–899).....	287
4.10.3	Summary of the 800 main class	291
4.11	The 900 main class	292
4.11.1	History, geography, and auxiliary disciplines (900–909).....	292
4.11.2	Geography and travel (910–919).....	296
4.11.3	Biography, genealogy, insignia (920–929)	300
4.11.4	History of Africa (960–969).....	304
4.11.5	Summary of the 900 main class	308
4.12	The Tables	309
4.12.1	Table 1	309
4.12.2	Table 4	313
4.12.3	Summary of the Tables	317
4.13	Conclusion	318
4.14	Chapter summary	320
CHAPTER 5	SOUTH AFRICAN TRANSLATIONS: A WORKFLOW AND A MODEL.....	321
5.1	Introduction.....	321

5.2	Workflow for South African translations	322
5.2.1	Abridged edition versus full edition.....	323
5.2.2	Stakeholders in a DDC translation	324
5.2.3	Steps in the translation process	325
5.2.3.1	Step 1: Involving the South African library community	325
5.2.3.2	Step 2: The sequence of translations.....	325
5.2.3.3	Step 3: Editing of the Google Translations.....	327
5.2.3.4	Step 4: Negotiating and signing the contract	328
5.2.3.5	Step 5: Use of the Pansoft translation software	329
5.2.4	Summary of the workflow.....	330
5.3	Scenarios for a South African translation model	331
5.3.1	Scenario 1	332
5.3.2	Scenario 2.....	334
5.3.3	Scenario 3.....	335
5.3.4	Comprehensiveness of Relative Index terms translations.....	337
5.3.5	Summary of the scenarios	340
5.4	Chapter summary	340
CHAPTER 6	FINDINGS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH	342
6.1	Introduction.....	342
6.2	Findings.....	342
6.2.1	Directions from the literature	342
6.2.2	Google translations	344
6.2.3	Simplifying the translation process.....	345
6.3	Recommendation.....	346
6.4	Suggestions for further research.....	347
6.4.1	Pure translation versus adaptation.....	347
6.4.2	Aspects of translation about South African languages other than Afrikaans.....	347

6.4.3 End user tools	349
6.4.4 Attitude towards South African translations.....	350
6.4.5 Machine translation studies.....	350
6.5 Chapter summary	350
BIBLIOGRAPHY	351
ANNEXURES.....	371
ANNEXURE A EXAMPLES OF EVALUATION.....	371
ANNEXURE B MASTER STATISTICS OF EVALUATION	380
ANNEXURE C PERMISSION LETTER FROM OCLC	383
ANNEXURE D LETTER FROM LANGUAGE EDITOR	384

LIST OF FIGURES

Figure 1.1: Swedish translation software 1	14
Figure 1.2: Swedish translation software 2.....	14
Figure 1.3: Swedish translation software 3.....	15
Figure 1.4: Swedish translation of WebDewey	16
Figure 1.5: Swedish translation of WebDewey	16
Figure 1.6: Translation software and distribution server integration	17
Figure 1.7: Part of the South African summaries.....	25
Figure 2.1: Evolving relationship between DDC and its international users	38
Figure 3.1: Example of Google Translate page	84
Figure 3.2: Example of Excel sheet of evaluated unit.....	85
Figure 3.3: Example of statistics of an evaluated unit	86
Figure 4.1: Knowledge (001)	99
Figure 4.2: Level of comprehensiveness in 001	101
Figure 4.3: Degree of editorial effort in 001	102
Figure 4.4: The book (002)	103
Figure 4.5: Level of comprehensiveness in 002	104
Figure 4.6: Degree of editorial effort in 002	105
Figure 4.7: Systems (003)	106
Figure 4.8: Level of comprehensiveness in 003	107
Figure 4.9: Degree of editorial effort in 003	108
Figure 4.10: Computer science; computer programming, programs, data; special computer methods (004–006)	109
Figure 4.11: Level of comprehensiveness in 004–006	111
Figure 4.12: Degree of editorial effort in 004–006	112
Figure 4.13: Bibliographies and catalogs (010 and 011)	113
Figure 4.14: Level of comprehensiveness in 010 and 011	115
Figure 4.15: Degree of editorial effort in 010 and 011	116
Figure 4.16: Library and information sciences (020, 025, 027 and 028).....	117
Figure 4.17: Level of comprehensiveness in 020, 025, 027 and 028	119
Figure 4.18: Degree of editorial effort in 020, 025, 027 and 028	120
Figure 4.19: General encyclopedic works (030–033)	121

Figure 4.20: Level of comprehensiveness in 030–033	123
Figure 4.21: Degree of editorial effort in 030–033	124
Figure 4.22: General serial publications (050 and 051).....	125
Figure 4.23: Level of comprehensiveness in 050 and 051	126
Figure 4.24: Degree of editorial effort in 050, 051	127
Figure 4.25: General organizations and museology (060 and 069).....	128
Figure 4.26: Level of comprehensiveness in 060 and 069	130
Figure 4.27: Degree of editorial effort in 060 and 069	131
Figure 4.28: Documentary media, educational media, news media; journalism; publishing (070).....	132
Figure 4.29: Level of comprehensiveness in 070	134
Figure 4.30: Degree of editorial effort in 070	135
Figure 4.31: General collections (080 and 081).....	136
Figure 4.32: Level of comprehensiveness in 080 and 081	137
Figure 4.33: Degree of editorial effort in 080 and 081	138
Figure 4.34: Manuscripts, rare books, other rare printed materials (090–099)...	139
Figure 4.35: Level of comprehensiveness in 090–099	141
Figure 4.36: Degree of editorial effort in 090–099	142
Figure 4.37: Philosophy, parapsychology and occultism, psychology (100–109)	145
Figure 4.38: Level of comprehensiveness in 100–109	147
Figure 4.39: Degree of editorial effort in 100–109	148
Figure 4.40: Specific Philosophical schools and viewpoints (140–149).....	149
Figure 4.41: Level of comprehensiveness in 140–149	151
Figure 4.42: Degree of editorial effort in 140–149	152
Figure 4.43: Psychology (150–159).....	153
Figure 4.44: Level of comprehensiveness in 150–159	155
Figure 4.45: Degree of editorial effort in 150–159	156
Figure 4.46: Ethics (Moral philosophy) (170–173).....	157
Figure 4.47: Level of comprehensiveness in 170–173	159
Figure 4.48: Degree of editorial effort in 170–173	160
Figure 4.49: Religion (200–209).....	162
Figure 4.50: Level of comprehensiveness in 200–209	164
Figure 4.51: Degree of editorial effort in 200–209	165

Figure 4.52: Christianity (230–239)	166
Figure 4.53: Level of comprehensiveness in 230–239	168
Figure 4.54: Degree of editorial effort in 230–239	169
Figure 4.55: Christian social and ecclesiastical theology (260–262)	170
Figure 4.56: Level of comprehensiveness in 260–262	172
Figure 4.57: Degree of editorial effort in 260–262	173
Figure 4.58: Other religions (290–299).....	174
Figure 4.59: Level of comprehensiveness in 290–299	176
Figure 4.60: Degree of editorial effort in 290–299	177
Figure 4.61: Social sciences (300–309)	179
Figure 4.62: Level of comprehensiveness in 300–309	181
Figure 4.63: Degree of editorial effort in 300–309	182
Figure 4.64: Political science (Politics and government) (320 and 323)	183
Figure 4.65: Level of comprehensiveness in 320 and 323	185
Figure 4.66: Degree of editorial effort in 320 and 323	186
Figure 4.67: Economics (330 and 336)	187
Figure 4.68: Level of comprehensiveness in 330 and 336	189
Figure 4.69: Degree of editorial effort in 330 and 336	190
Figure 4.70: Law (340–342)	191
Figure 4.71: Level of comprehensiveness in 340–342	193
Figure 4.72: Degree of editorial effort in 340–342	194
Figure 4.73: Public administration and military science (350–353).....	195
Figure 4.74: Level of comprehensiveness in 350–353	197
Figure 4.75: Degree of editorial effort in 350–353	198
Figure 4.76: Social problems and services; associations (360, 361 and 364)	199
Figure 4.77: Level of comprehensiveness in 360, 361 and 364	201
Figure 4.78: Degree of editorial effort in 360, 361 and 364	202
Figure 4.79: Education (370, 371 and 378)	203
Figure 4.80: Level of comprehensiveness in 370, 371 and 378	206
Figure 4.81: Degree of editorial effort in 370, 371 and 378	207
Figure 4.82: Commerce, communications, transportation (380, 381 and 384)...	208
Figure 4.83: Level of comprehensiveness in 380, 381 and 384	210
Figure 4.84: Degree of editorial effort in 380, 381 and 384	211

Figure 4.85: Customs, etiquette, folklore (390–392).....	212
Figure 4.86: Level of comprehensiveness in 390–392	214
Figure 4.87: Degree of editorial effort in 390–392	215
Figure 4.88: Language (400–409)	218
Figure 4.89: Level of comprehensiveness in 400–409	220
Figure 4.90: Degree of editorial effort in 400–409	221
Figure 4.91: Linguistics (410–419)	222
Figure 4.92: Level of comprehensiveness in 410–419	224
Figure 4.93: Degree of editorial effort in 410–419	225
Figure 4.94: German and related languages (430 and 439).....	226
Figure 4.95: Level of comprehensiveness in 430 and 439	228
Figure 4.96: Degree of editorial effort in 430 and 439	229
Figure 4.97: Other languages (490–499) scores	230
Figure 4.98: Level of comprehensiveness in 490–499	232
Figure 4.99: Degree of editorial effort in 490–499	233
Figure 4.100: Natural sciences and mathematics (500–509)	235
Figure 4.101: Level of comprehensiveness in 500–509	237
Figure 4.102: Degree of editorial effort in 500–509	238
Figure 4.103: Mathematics (510–519).....	239
Figure 4.104: Level of comprehensiveness in 510–519	241
Figure 4.105: Degree of editorial effort in 510–519	242
Figure 4.106: Physics (530–539).....	243
Figure 4.107: Level of comprehensiveness in 530–539	245
Figure 4.108: Degree of editorial effort in 530–539	246
Figure 4.109: Biology (570, 571)	247
Figure 4.110: Level of comprehensiveness in 570 and 571	249
Figure 4.111: Degree of editorial effort in 570 and 571	250
Figure 4.112: Technology (Applied sciences) (600–609)	252
Figure 4.113: Level of comprehensiveness in 600–609	254
Figure 4.114: Degree of editorial effort in 600–609	255
Figure 4.115: Agriculture and related technologies (630–639).....	256
Figure 4.116: Level of comprehensiveness in 630–639	258
Figure 4.117: Degree of editorial effort in 630–639	259

Figure 4.118: Home and family management (640–649)	260
Figure 4.119: Level of comprehensiveness in 640–649	263
Figure 4.120: Degree of editorial effort in 640–649	264
Figure 4.121: The arts (700–709).....	266
Figure 4.122: Level of comprehensiveness in 700–709	268
Figure 4.123: Degree of editorial effort in 700–709	269
Figure 4.124: Architecture (720–729).....	270
Figure 4.125: Level of comprehensiveness in 720–729	272
Figure 4.126: Degree of editorial effort in 720–729	273
Figure 4.127: Printmaking and prints (760–769)	274
Figure 4.128: Level of comprehensiveness in 760–769	276
Figure 4.129: Degree of editorial effort in 760–769	277
Figure 4.130: Photography, computer art, cinematography, videography (770–779)	278
Figure 4.131: Level of comprehensiveness in 770–779	280
Figure 4.132: Degree of editorial effort in 770–779	281
Figure 4.133: Literature (Belles-lettres) and rhetoric (800–809).....	283
Figure 4.134: Level of comprehensiveness in 800–809	286
Figure 4.135: Degree of editorial effort in 800–809	287
Figure 4.136: Literatures of other specific languages and language families (890– 899)	288
Figure 4.137: Level of comprehensiveness in 890–899	290
Figure 4.138: Degree of editorial effort in 890–899	291
Figure 4.139: History, geography, and auxiliary disciplines (900–909)	293
Figure 4.140: Level of comprehensiveness in 900–909	295
Figure 4.141: Degree of editorial effort in 900–909	296
Figure 4.142: Geography and travel (910–919).....	297
Figure 4.143: Level of comprehensiveness in 910–919	299
Figure 4.144: Degree of editorial effort in 910–919	300
Figure 4.145: Biography, genealogy, insignia (920–929)	301
Figure 4.146: Level of comprehensiveness in 920–929	303
Figure 4.147: Degree of editorial effort in 920–929	304
Figure 4.148: History of Africa (960–969).....	305

Figure 4.149: Level of comprehensiveness in 960–969	307
Figure 4.150: Degree of editorial effort in 960–969	308
Figure 4.151: Table 1	310
Figure 4.152: Level of comprehensiveness in Table 1	312
Figure 4.153: Degree of editorial effort in Table 1	313
Figure 4.154: Table 4	314
Figure 4.155: Level of comprehensiveness in Table 4	316
Figure 4.156: Degree of editorial effort in Table 4	317
Figure 5.1: Summary of the chapter	322
Figure 5.2: Hierarchical movement and comments in the translation software ..	330
Figure 5.3: Simplified comparison of workflows.....	331
Figure 5.4: Ten instances scenario	333
Figure 5.5: One instance scenario.....	334
Figure 5.6: Three instances scenario	336
Figure 6.1: Barriers to translations	349

LIST OF TABLES

Table 1.1: Cost of translation software	13
Table 1.2: Total South African-related entries DDC 20 to DDC 23.....	20
Table 1.3: South African edition (1960) and British edition (1961) versus DDC 16	23
Table 1.4: Comparison of terms in Afrikaans translations of 1960 and 2009	24
Table 1.5: Summary of quantitative and qualitative data.....	32
Table 2.1: Useful information relating to feasibility	63
Table 3.1: Units of the 000 main class	75
Table 3.2: Units of the 100 main class	76
Table 3.3: Units of the 200 main class	77
Table 3.4: Units of the 300 main class	78
Table 3.5: Units of the 400 main class	79
Table 3.6: Units of the 500 main class	79
Table 3.7: Units of the 600 main class	80
Table 3.8: Units of the 700 main class	81
Table 3.9: Units of the 800 main class	81
Table 3.10: Units of the 900 main class	82
Table 3.11: Units of the Tables.....	83
Table 3.12: Labels for level of comprehensiveness.....	91
Table 3.13: Values measuring the degree of editorial effort	92
Table 3.14: Split-half approach result.....	95
Table 4.1: Level of comprehensiveness in 001	100
Table 4.2: Degree of editorial effort in 001	101
Table 4.3: Level of comprehensiveness in 002	104
Table 4.4: Degree of editorial effort in 002	105
Table 4.5: Level of comprehensiveness in 003	107
Table 4.6: Degree of editorial effort in 003	108
Table 4.7: Level of comprehensiveness in 004–006	111
Table 4.8: Degree of editorial effort in 004–006	112
Table 4.9: Level of comprehensiveness in 010 and 011	115
Table 4.10: Degree of editorial effort in 010 and 011	116

Table 4.11: Level of comprehensiveness in 020, 025, 027 and 028.....	119
Table 4.12: Degree of editorial effort in 020, 025, 027 and 028.....	120
Table 4.13: Level of comprehensiveness in 030–033	122
Table 4.14: Degree of editorial effort in 030–033	123
Table 4.15: Level of comprehensiveness in 050 and 051	126
Table 4.16: Degree of editorial effort in 050 and 051	127
Table 4.17: Level of comprehensiveness in 060 and 069	129
Table 4.18: Degree of editorial effort in 060 and 069	130
Table 4.19: Level of comprehensiveness in 070	133
Table 4.20: Degree of editorial effort in 070	134
Table 4.21: Level of comprehensiveness in 080 and 081	137
Table 4.22: Degree of editorial effort in 080 and 081	137
Table 4.23: Level of comprehensiveness in 090–099	140
Table 4.24: Degree of editorial effort in 090–099	141
Table 4.25: Summary of the 000 main class	143
Table 4.26: Level of comprehensiveness in 100–109	146
Table 4.27: Degree of editorial effort in 100–109	147
Table 4.28: Level of comprehensiveness in 140–149	150
Table 4.29: Degree of editorial effort in 140–149	151
Table 4.30: Level of comprehensiveness in 150–159	155
Table 4.31: Degree of editorial effort in 150–159	156
Table 4.32: Level of comprehensiveness in 170–173	158
Table 4.33: Degree of editorial effort in 170–173	159
Table 4.34: Summary of the 100 main class	160
Table 4.35: Level of comprehensiveness in 200–209	163
Table 4.36: Degree of editorial effort in 200–209	164
Table 4.37: Level of comprehensiveness in 230–239	167
Table 4.38: Degree of editorial effort in 230–239	168
Table 4.39: Level of comprehensiveness in 260–262	171
Table 4.40: Degree of editorial effort in 260–262	172
Table 4.41: Level of comprehensiveness in 290–299	176
Table 4.42: Degree of editorial effort in 290–299	176
Table 4.43: Summary of the 200 main class	177

Table 4.44: Level of comprehensiveness in 300–309	181
Table 4.45: Degree of editorial effort in 300–309	182
Table 4.46: Level of comprehensiveness in 320 and 323	185
Table 4.47: Degree of editorial effort in 320 and 323	185
Table 4.48: Level of comprehensiveness in 330 and 336	189
Table 4.49: Degree of editorial effort in 330 and 336	190
Table 4.50: Level of comprehensiveness in 340–342	193
Table 4.51: Degree of editorial effort in 340–342	194
Table 4.52: Level of comprehensiveness in 350–353	197
Table 4.53: Degree of editorial effort in 350–353	198
Table 4.54: Level of comprehensiveness in 360, 361 and 364	201
Table 4.55: Degree of editorial effort in 360, 361 and 364	202
Table 4.56: Level of comprehensiveness in 370, 371 and 378	205
Table 4.57: Degree of editorial effort in 370, 371 and 378	206
Table 4.58: Level of comprehensiveness in 380, 381 and 384	210
Table 4.59: Degree of editorial effort in 380, 381 and 384	210
Table 4.60: Level of comprehensiveness in 390–392	214
Table 4.61: Degree of editorial effort in 390–392	215
Table 4.62: Summary of 300 main class	216
Table 4.63: Level of comprehensiveness in 400–409	219
Table 4.64: Degree of editorial effort in 400–409	220
Table 4.65: Level of comprehensiveness in 410–419	224
Table 4.66: Degree of editorial effort in 410–419	224
Table 4.67: Level of comprehensiveness in 430 and 439	227
Table 4.68: Degree of editorial effort in 430 and 439	228
Table 4.69: Level of comprehensiveness in 490–499	231
Table 4.70: Degree of editorial effort in 490–499	232
Table 4.71: Summary of the 400 main class	233
Table 4.72: Level of comprehensiveness in 500–509	236
Table 4.73: Degree of editorial effort in 500–509	237
Table 4.74: Level of comprehensiveness in 510–519	241
Table 4.75: Degree of editorial effort in 510–519	242
Table 4.76: Level of comprehensiveness in 530–539	245

Table 4.77: Degree of editorial effort in 530–539	245
Table 4.78: Level of comprehensiveness in 570 and 571	249
Table 4.79: Degree of editorial effort in 570 and 571	250
Table 4.80: Summary of the 500 main class	251
Table 4.81: Level of comprehensiveness in 600–609	254
Table 4.82: Degree of editorial effort in 600–609	254
Table 4.83: Level of comprehensiveness in 630–639	258
Table 4.84: Degree of editorial effort in 630–639	259
Table 4.85: Level of comprehensiveness in 640–649	262
Table 4.86: Degree of editorial effort in 640–649	263
Table 4.87: Summary of the 600 main class	264
Table 4.88: Level of comprehensiveness in 700–709	268
Table 4.89: Degree of editorial effort in 700–709	268
Table 4.90: Level of comprehensiveness in 720–729	272
Table 4.91: Degree of editorial effort in 720–729	273
Table 4.92: Level of comprehensiveness in 760–769	276
Table 4.93: Degree of editorial effort in 760–769	277
Table 4.94: Level of comprehensiveness in 770–779	280
Table 4.95: Degree of editorial effort in 770–779	280
Table 4.96: Summary of the 700 main class	281
Table 4.97: Level of comprehensiveness in 800–809	285
Table 4.98: Degree of editorial effort in 800–809	286
Table 4.99: Level of comprehensiveness in 890–899	289
Table 4.100: Degree of editorial effort in 890–899	290
Table 4.101: Summary of the 800 main class	291
Table 4.102: Level of comprehensiveness in 900–909	294
Table 4.103: Degree of editorial effort in 900–909	295
Table 4.104: Level of comprehensiveness in 910–919	298
Table 4.105: Degree of editorial effort in 910–919	299
Table 4.106: Level of comprehensiveness in 920–929	303
Table 4.107: Degree of editorial effort in 920–929	303
Table 4.108: Level of comprehensiveness in 960–969	306
Table 4.109: Degree of editorial effort in 960–969	307

Table 4.110: Summary of the 900 main class	308
Table 4.111: Level of comprehensiveness in Table 1	312
Table 4.112: Degree of editorial effort in Table 1	312
Table 4.113: Level of comprehensiveness in Table 4	316
Table 4.114: Degree of editorial effort in Table 4	316
Table 4.115: Summary of the Tables	317
Table 4.116: Summary of all main classes and tables	318
Table 5.1: 636 Abridged Edition 15 versus WebDewey	324
Table 5.2: Problems relating to translation	328
Table 5.3: Advantages and disadvantages of scenario 1	334
Table 5.4: Advantages and disadvantages of scenario 2	335
Table 5.5: Advantages and disadvantages of scenario 3	337
Table 5.6: Google translations of Relative Index terms	339
Table 5.7: Comprehensiveness of Relative Index terms translations	340

LIST OF ABBREVIATIONS, ACRONYMS AND DEFINITIONS

Abridged edition: Version of DDC suited for classification needs of libraries with smaller collections. It consists inter alia of shorter numbers and fewer tables, four instead of six

Adaptations: A specific part of DDC is used for something other than its use in the English edition

ASTED: Association pour l'avancement des sciences et des techniques de la documentation

ATKV: Afrikaanse Taal- en Kultuurvereniging

BISAC: Book Industry Subject and Category Subject Headings

BLEU: Bilingual evaluation understudy

CAT: Computer assisted translation

CC: Colon classification

DDC: Dewey Decimal Classification

DDK: Deweys Desimalklassifikasjon

Encore: Discovery solution in the Unisa Library catalogue covering a vast range of databases for single search results

EPC: Editorial Policy Committee

ESS: Editorial Support System

Expansions: The development of a class in the schedules or tables by further subdivisions

Feasibility: The possibility of accomplishing something. In the context of this research it refers to the possibility of accomplishing South African translations of DDC in terms of costs, technical aspects as well as organisational aspects

FRAD: Functional Requirements for Authority Data

FRBR: Functional Requirements for Bibliographic Records

HTML: Hypertext Mark-up Language

IFLA: International Federation of Library Associations

IGBIS: Interest Group for Bibliographic Standards

KDC: Korean Decimal Classification

LCSH: Library of Congress Subject Headings

LIASA: Library and Information Association of South Africa

LIBRIS: Library Information System (Swedish national union catalogue)

MARC: MACHine-Readable Cataloguing

MARXML: Extensible Markup Language for use with MARC data

MeSH: Medical Subject Headings

MT: Machine translation

NHN: National Human Language Network

OCLC: Online Computer Library Centre

Options: Solutions given by the editors in the English edition to accommodate different usage in other countries

PANSALB: Pan South African Language Board

Pansoft translation software: Software used by DDC translators. One instance or physical manifestation is needed per language, thus, for 10 languages, translators would use 10 separate instances of the software

PDF: Portable Document Format

ProQuest: Database platform covering thousands of full text journals, books, reports, dissertations and newspapers

RDA: Resource Description and Access

RDF: Resource Description Framework

RTF: Rich Text Format

SAB: Klassifikationssystem for svenska bibliotek

Sabinet: Network of South African and international libraries and public and private organisations to enable information dissemination

SKOS: Simple Knowledge Organisation System

Translations: Versions of DDC in any language other than the original English

UDC: Universal Decimal Classification

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNISA: University of South Africa

URI: Uniform Resource Identifier

WebDewey 2.0 (or simply WebDewey): The electronic edition of DDC available to licensed users only

WorldCat: The world's largest network of library content and services

XML: Extensible Markup Language

Chapter 1 Introduction

1.1 Background to the study

This study focuses on the translation of the Dewey Decimal Classification (DDC) system into the official South African languages. It reports on the broader context of classification systems within bibliographic control and then describes the use of DDC in the world. DDC in South Africa is featured separately because the emphasis of the research is on South Africa. The researcher investigates the feasibility of translations into ten of the eleven official South African languages.

1.1.1 Use of classification systems for bibliographic control

Classification systems fall within the broader area of bibliographic control which entails the process of creating, exchanging, preserving and using information resources (Encyclopedia of library and information science 2009, sv “Bibliographic control”). Bibliographic control includes the use of cataloguing codes, the MACHine-Readable Cataloguing (MARC) standard in catalogues, shared cataloguing and more recent developments such as Functional Requirements for Bibliographic Records (FRBR) and Functional Requirements for Authority Data (FRAD) which resulted in the newest cataloguing code, Resource Description and Access (RDA) (Encyclopedia of library and information science 2009, sv “Bibliographic control”). Bibliographic control is collaborative and decentralised in nature (Encyclopedia of library and information science 2009, sv “Bibliographic control”). This means that libraries throughout the world use these standards in bibliographic and subject description to ensure international exchange of cataloguing records.

Subject cataloguing forms part of bibliographic control and consists of two distinct aspects. It firstly entails the use of controlled vocabularies or terms to describe the subject matter of the bibliographic record in a cataloguing environment. Controlled vocabularies include – for example, Library of Congress Subject Headings (LCSH) and Sears List of Subject Headings. Sears List of Subject Headings is a

simplification of LCSH and is named after Minnie Earl Sears who formulated it in 1923. The main functions of subject cataloguing are selection, retrieval and searching of information resources (Encyclopedia of library and information science 2009, sv “Subject cataloguing principles and systems”).

Classification is the second form of subject cataloguing within the realm of bibliographic control and uses notations or symbols to describe the subject matter. Melville (also known as Melvil) Dewey developed DDC in 1876. Subsequently, other classification systems such as Universal Decimal Classification (UDC) (1899), Library of Congress Classification (LC) (1898) and Colon Classification (CC) (1933) were developed (Encyclopedia of library and information science 2009, sv “Classification theory”). The focus of this study is on DDC which is further discussed in Section 1.1.2 General overview of DDC.

In bibliographic control, the information specialist or cataloguer is the primary user of a classification system. The cataloguer uses the classification system in the bibliographic description of an information resource to enhance the possibility of retrieving that resource.

The broader area of the study has been identified in Section 1.1.1 Use of classification systems for bibliographic control and the more specific focus follows in the next two sections.

1.1.2 General overview of DDC

This section gives a short overview of DDC. The research focuses on translations with specific reference to South Africa. A comprehensive historical discussion about the development of DDC since 1876 would thus be redundant. The researcher refers to full editions using DDC and the relevant edition number – for example, DDC 23, and to abridged editions using the term Abridged Edition and its edition number – for example, Abridged Edition 15. Although the title “Dewey Decimal Classification” was not used until 1951, for uniformity the researcher prefers to use the abbreviation “DDC” along with the edition number – even for those pre-1951 editions that use other names.

The DDC milieu consists of the English DDC 1 to 23, Abridged Editions 1 to 15, translations in various other languages as discussed in Section 1.1.2.5.3 Translations and WebDewey as discussed in Section 1.1.2.2 WebDewey. The most recent English editions are DDC 23 published in 2011 and Abridged Edition 15 published in 2012.

DDC is a pure notational system in that it consists of numerals only. It is structured into ten main classes, also called the first summary. Each of these ten main classes contains ten divisions and, together, these hundred divisions make up the second summary. Similarly, the third summary is made up of a thousand sections – that is, ten sections in each of the hundred divisions. Because this structure is hierarchical, the longer the notation, the more specific the indication of the subject (Introduction to the Dewey Decimal Classification 2017:3–5). DDC uses upper case in headings or captions in a very specific way, and the researcher duplicates that in examples.

A majority of libraries all over the world use DDC for classification. Dewey services (2017) mentions that more than 200 000 libraries use DDC. The widespread use of DDC is mainly attributed to the fact that it makes use of the Arabic numeral system which is known to the vast majority of the world's literate population (Introduction to the Dewey Decimal Classification 2017:2).

According to Jones (e-mail, 6 January 2017) DDC is now used in 142 countries. She gives the following statistics per continent:

- Europe: 36 countries (including Austria, Bulgaria, Cyprus, Finland, France and Iceland)
- Middle East: 23 countries (including Iran, Iraq, Israel, Jordan and Syria)
- Africa: 24 countries (including Benin, Botswana, Cameroon, Ghana, Kenya and South Africa)
- Americas: 29 countries (including Argentina, the Bahamas, Chile, Ecuador and Mexico)
- Asia-Pacific: 30 countries (including Australia, Bangladesh, China, Fiji, Korea and Mongolia)

Sections 1.1.2.1 to 1.1.2.3 describe aspects of DDC that are important in the discussion of translations.

1.1.2.1 Editorial Support System

The Editorial Support System (ESS) is the software that the DDC editors have used to produce and maintain DDC since the mid-1980s (Green 2006). Beall and Mitchell (2010:49) show that, up until 2009, DDC used a proprietary format for data representation. The need to replace the existing ESS, the need to deliver DDC data in different formats and editorial work that had to be undertaken with translation partners led to the use of the MARC format, specifically its authority/classification format (Beall & Mitchell 2010:49). This format opened up a world of new uses and alternative representations of DDC – for example, translations in other languages.

According to Mitchell (2012:17), data from the ESS are distributed via a server to the Pansoft translation software, discussed in Section 1.1.2.5.4 Pansoft translation software. Data are also distributed to WebDewey, discussed in Section 1.1.2.2 WebDewey, with distribution formats such as Extensible Markup Language (XML) for use with MARC data (MARCXML), Resource Description Framework (RDF) and Simple Knowledge Organisation System (SKOS) as well as end user transformations such as Portable Document Format (PDF). RDF is a general method for conceptual description and SKOS is a family of formal languages for representation of thesauri, classification schemes and the like (Mitchell 2012:15).

This means that when the editors add a new number in the ESS, the information is distributed to the English edition of WebDewey as well as to the Pansoft translation software where any translator can then translate the caption, notes, and other parts for distribution to any edition of WebDewey or for later use in a new print edition (Mitchell 2012:34).

It is also possible for a user to build a number in any edition of WebDewey by adding – for example, a Table 2 geographic area to any DDC number in the schedules, simultaneously adding key words and then submitting this built

number. The number is then distributed to the ESS where it is evaluated by the editors and, if approved, it is distributed to WebDewey for all users (WebDewey 2017). Built numbers are described in more detail in Section 1.1.2.2 WebDewey.

1.1.2.2 WebDewey

WebDewey 2.0 (or simply WebDewey) is the electronic edition of DDC available to licensed users only. It is one of the products of the Pansoft translation software, the other being a print edition. WebDewey in English consists of DDC 22 and DDC 23, but the two cannot be used simultaneously. Users can access individual classes and tables by clicking on hyperlinks. There are also various search and browse options – including the schedules, tables, Relative Index and mappings of LCSH as discussed in Section 1.1.2.3 Linked data and mappings, or all of these combined. WebDewey also contains Abridged Edition 15 in its entirety, divided into PDFs for each main class (WebDewey 2017).

In addition, WebDewey has a facility to build numbers. Built numbers are combinations of a DDC notation and anything that can be added as per instruction at the specific notation – for example, 305.420968 is built with 305.42 (Social role and status of women), -09 from Table 1 (indicating geographic subdivision) and -68 from Table 2 (South Africa). Built numbers can be saved as follows:

- As personal on the hard drive of the user's computer and visible to only that user
- As institutional and visible to all users within an institution
- Submitted to the editors for evaluation, as discussed in Section 1.1.2.1 Editorial Support System, for visibility to all WebDewey users around the world

The MARC field 765 eases editorial evaluation because it shows the steps in number building – for example, 765 0# \$b 796.522 \$z 1 \$s 092 \$u 796.522092 (Panzer 2012:2-9).

1.1.2.3 Linked data and mappings

Hallo, Lujan-Mora, Maté and Trujillo (2016:118) define linked data as a technique using Web technologies to connect related data and publish it on the Web. Linked data in DDC, specifically dewey.info, is described by Mitchell and Panzer (2013). Each data entity has a Uniform Resource Identifier (URI) and this is represented by RDF, SKOS and Dublin Core, a set of vocabulary terms to describe resources for machines, and by Hypertext Markup Language (HTML) for humans (Mitchell & Panzer 2013:178). In dewey.info there is a web page for every class of DDC summaries and, according to Mitchell and Panzer (2013:188), this is in the process of being extended meaning that geographic data from Table 2 in DDC and build numbers from WebDewey will gradually also be included. Afrikaans summaries previously formed part of dewey.info. However, the service was discontinued due to technical issues.

Mappings in WebDewey refer to linking LCSH, Medical Subject Headings (MeSH), Sears Subject Headings and Book Industry Subject and Category Subject Headings (BISAC) to notations (Mitchell 2012:11). In other translations of WebDewey, subject headings of other languages are also linked to notations – for example, “Svenska ämnesord” in the Swedish translation (Rype & Svanberg 2009:21). In the South African context, it will be necessary to decide if the existing mappings will be translated into South African languages or if terminology existing in specific languages will be mapped to specific notations.

1.1.2.4 Apparent shortcomings in DDC

Sections 1.1.2.1 to 1.1.2.3 gave an overview of the major parts of and new developments in DDC. Section 1.1.2.4 discusses apparent shortcomings of DDC. The researcher uses the word “apparent” because some of the so-called shortcomings are identified as such based on ideological stances, making them, to a certain extent, subjective. The term “shortcomings” is used instead of “bias” because it defines the problem more accurately. The shortcomings are not limited to bias, but also include topics that are omitted from DDC.

The section gives only a short overview because it serves as an introduction to a discussion on possible solutions and because the research focuses on the positive aspect of translations as a solution rather than on negative aspects of DDC's shortcomings.

1.1.2.4.1 Shortcomings about gender, sexuality and groups of people

- Bias against women – for example, terminology used in 360, such as “unmarried mothers” (Kublik, Clevette, Ward & Olson 2003:18)
- Bias against minorities – such as the use of “Puerto Ricans”, “Native Americans”, “the developing world”, “gays” and many more because DDC represents mainstream thought (Olson 1998:234)
- Topics are omitted – for example, African independent churches rejecting elements foreign to African culture are not mentioned in DDC (Olson & Schlegl 2001:68)

1.1.2.4.2 Shortcomings about languages and literatures

- The so-called colonial languages occupy the most space in the 800 class of DDC (810–869), but African languages are cramped into 896. Diversity, rather than universality, is necessary to decrease levels of bias (Olson 2001:121)
- Literature in DDC is classified based on languages and not geographic regions, thus fragmenting national literatures and causing “cultural imperialism” which can be seen with South African literatures, classed in three different sections: 820 (English), 836 (Afrikaans) and 896 (African languages) (Pacey 1989:102–103)
- Bias of DDC at 890 where more than 6 000 indigenous languages are situated in one division (Chester 2006:67)

1.1.2.4.3 Shortcomings about other subjects

- Chester (2006:68–69) further shows how DDC conflicts with traditional indigenous culture where medicine is in 610 as part of technology and with no connection to spirituality, therefore a narrow Western view
- DDC was meant as a practical solution for use in American libraries and not as a philosophical foundation. The bias reflects the culture of the creator and neglects developing world subjects (Comaromi & Satija 1985:1). Comaromi and Satija also indicate the difference between universal and local subjects, the uniqueness of art, literature, religion, philosophy, medicine and so on in Indian culture (Comaromi & Satija 1985:3)
- The difficulty in translating kinship terms and the necessity to stretch traditional classifications away from the original. There are differences between knowledge structures and how ideas are represented in different cultures. An ideal translation should be 100% culturally and linguistically sensitive and not be a word-for-word or structure-by-structure effort (Kwasnik & Rubin 2003:46)

Most articles on shortcomings are outdated and usually prescribe how DDC should change to accommodate and/or include certain aspects, but critics seem to forget that DDC is a classification system and not an agent for social change. The inherent structure of DDC must be taken into account and things cannot simply be added or removed. Having said this, it is essential for DDC to keep pace with social change, but in a way that does not compromise its inherent quality and structure.

1.1.2.5 Possible solutions to shortcomings in DDC

After the discussion in Section 1.1.2.4 Apparent shortcomings in DDC, Section 1.1.2.5 looks at possible solutions to shortcomings and discusses options, expansions, adaptations and translations.

1.1.2.5.1 Options in DDC

Mitchell (1995) mentions the various types of options – for example, close versus broad classification, emphasis on jurisdiction, racial, ethnic or national group, language, topic and so on. Options can be described as internal solutions, thus solutions given by the editors in the English edition to accommodate different usages in other countries. According to Mitchell (1995:100), options help to accommodate cultural differences and show local importance. She elaborates on various options and devices used in these options – for example length of notation, alphabetical sub-arrangement and so on. She also discusses licensed expansions and adaptations (Mitchell 1995:100).

Other DDC options are mentioned in Section 1.1.3.2 Areas for possible expansion and suitable options, Chapter 2 Section 2.7 Icelandic and Chapter 2 Section 2.12 Persian.

Options can, however, present some difficulties. There are options at 342–347 (Branches of law). The library of the University of South Africa (UNISA) uses option C, where the geographic jurisdiction is placed after the branch of law – for example, Criminal courts in South Africa, 345.1068 versus 345.6801, the regular number. Despite this being a valid option explained in DDC, as well as various training sessions and documentation available to further explain the option, cataloguers seem to constantly err with law classification. This indicates that options could be a hindrance instead of being helpful. The use of such an option also implies that time and effort will be spent to change good quality Online Computer Library Center (OCLC) records, with financial implications for any particular institution.

1.1.2.5.2 Expansions and adaptations

Expansions are described as the development of a class in the schedules or tables by further subdivisions according to the Glossary [of DDC] (2017, sv “expansions”). A practical example would be the expansion of a South African district municipality to include subdivisions for local municipalities, as explained in Chapter 5 Section 5.2.3.5 Step 5: Use of the Pansoft translation software.

Expansions can occur in the English edition or in a translation – for example, in Chapter 2 Section 2.2 General overview and sources on multiple translations where there is reference to Beall’s description (2003) of expansions in the German and Vietnamese translations.

Various expansions to the English edition have been suggested throughout the history of DDC – for example:

- An expansion to the history of the Pacific North West (979.5), suggested by Charles W. Smith in 1908
- A partial expansion of the history of South America (980), suggested by Virginia Clarke in 1944
- Expansion to Table 2 for Melanesia (-93/-95) (1984), Table 5 Peoples of Melanesia (various numbers at -99) (1985) and Table 6 Languages of Melanesia (-9912 and -995) (1985), suggested by Fraiser McConnell
- Further expansion of Table 2 (-598), 499.221 and Table 6 (-99221) and historical periods for Indonesia (959.8), suggested by L. Sulisty-Basuki in 2007

Expansions for Melanesia were made in DDC 20 and for Indonesia in DDC 22. This indicates that the editors of DDC do give attention to suggestions – not only those made in literature, but also through discussions with national bodies. However, expansions in the English edition would be based on international literary warrant and would therefore not be as detailed as in a translation. International literary warrant refers to the existence of a body of literature on a particular topic in OCLC’s WorldCat (Glossary [of DDC] 2017, sv “literary warrant”).

Adaptations imply that a specific part of DDC is used for something other than what it is used for in the English edition – for example, the use of 230–280 for Islam and not Christianity. It can also refer to the different use of a main class than in the English edition – for example, in the Korean adaptation where the language schedule is at 700 and not at 400 as described in Chapter 2 Section 2.10 Korean. Not all adaptations receive official recognition, however. Adaptations occur only in

translations and are discussed in Chapter 2 Section 2.3 Arabic, Chapter 2 Section 2.8 Indonesian and Chapter 2 Section 2.13 Russian.

Most people who advocate expansions and adaptations do not, however, mention the idea of literary warrant, and do not consider the inherent hierarchical structure of DDC. For example, in the South African edition of 1960, described in Section 1.1.3.3 Early South African translations, 369.1 is used for “Voortrekkerseuns”, an expansion from 369. However, 369.1 is used with the caption for “Hereditary, military, patriotic societies of United States” in DDC 16 and 369.4 is used with the caption “Young people’s societies” meaning that the latter would therefore have been the correct option for “Voortrekkerseuns”. The practice to use just any number of DDC for a local expansion can thus not be condoned.

Although expansions in the milieu of local literary warrant can be useful, this research does not propose the route of adaptations of DDC in the South African context, however the decision would rest on the shoulders of translators of individual languages. Local literary warrant, as described by Beall (2003:2) and various other authors in Chapter 2 Section 2.2 General overview and sources on multiple translations, plays an important part in translations.

Section 1.1.2.5.3 Translations deals with general aspects of translations as well as the idea of local literary warrant.

1.1.2.5.3 Translations

DDC has been translated into more than 30 languages, such as Arabic, French, Greek, Hebrew, Icelandic, Swedish and German (Introduction to the Dewey Decimal Classification 2017:2). Different translation strategies have been used, such as translation of the abridged edition into Indonesian and translation of the full edition into German, while more recently the Swedes have opted for the mixed translation model. This entails headings at the top of the hierarchical structure being translated into Swedish, but headings further down in the hierarchical structure being maintained in English. The researcher will deal with this in more detail in Chapter 2 Section 2.11 Norwegian and Swedish.

Local literary warrant or a body of literature on a particular topic in a local system or union catalogue plays a major role in expansion within translations, usually in terms of geographic areas in Table 2, groups of people in Table 5, language groups in Table 6 and historical periods in the 900 class (Beall 2003:2). This indicates that a translation can be the best solution to shortcomings of DDC.

Translations of DDC are the focus of this research and, therefore, Chapter 2 Section 2.2 General overview and sources on multiple translations deals with it in more detail.

Section 1.1.2.5.4 Pansoft translation software focuses on the software that is now used for all licensed translations of DDC. Section 1.1.3.3 Early South African translations and Section 1.1.3.4 Later South African translations focus on existing South African translations.

1.1.2.5.4 Pansoft translation software

It is important to look at the Pansoft translation software because it is used by all translators undertaking licensed translations of DDC. Doing so also gives an indication of one fragment of the translation costs.

Pansoft, a software company in Karlsruhe, Germany, provides the backbone for DDC translations (Heiner-Freiling, 2006:149). The software consists of one instance or one physical manifestation per language. This means that for the translation of DDC into three South African languages, translators need three instances of the software. However, if WebDewey is the product of the translation, all three translations (or any number of translations), can be accommodated in one WebDewey instance (Werling e-mail, 18 July 2016). In such a WebDewey instance, there will then be three “links” for each language and the user can choose the appropriate translation.

It is possible to accommodate Relative Index entries of multiple languages in one translation instance. Therefore, a translation software instance and an Afrikaans WebDewey could contain the schedules and tables in Afrikaans, with Relative Index terms in Afrikaans and any of the other South African languages (Werling e-

mail, 17 September 2014). The Swedish instance of the translation software and WebDewey display English and Swedish Relative Index entries as illustrated in Figures 1.1 and 1.2 (page 14) and Figures 1.4 and 1.5 (page 16).

According to Werling (e-mail, 18 July 2016), the cost of the software is as indicated in Table 1.1. In the case of multiple instances, all instances subsequent to the first instance can be bought at 50% off the cost of the first instance, thus EUR 12 500 per instance. The cost of the abridged edition’s translation software is the same as that of the full edition (Werling e-mail, 12 September 2016).

Table 1.1: Cost of translation software

	With Print edition as end product	With WebDewey as end product
Initial fee	EUR 25 000	EUR 25 000 plus EUR 15 000 (EUR 12 500 plus EUR 15 000 for every subsequent translation)
Running costs (Start 12 months after installation)	EUR 1 000 (per month)	EUR 500 (per month) for all instances combined
Total cost (for one year period after installation, including running cost)	EUR 37 000	EUR 46 000 (EUR 27 500 for every subsequent translation)

A detailed discussion of the cost pertaining to South African translations based on electronic editions only features in Chapter 5 Section 5.3 Scenarios for a South African translation model.

Figures 1.1 to 1.3 (pages 14–15) show the Swedish translation software at a particular DDC number, 636.8. These three figures represent one page of the translation software. It illuminates the following:

- The MARCXML format of the software, where the DDC number and caption are in MARC fields 153 and Relative Index terms are in MARC field 150
- The Relative Index terms in Swedish and English

- The hierarchy for this number from 6 downwards displays in Figure 1.3 (page 15)

menu go to < > history search archive structure mab phrases version publish

User: gertdj

DTC: 04.02.2010 00:00 DTU: 26.03.2011 17:46
 last modified: 15.07.2011 14:27 user: Administrator

History Built number

153 {636.8}

153 Cats

REG: 150##

DTC: 01.06.1996 00:00 DTU: 15.07.2011 14:27

Productive History

STA: 0 Comments

153 {636.8}

153 Katter

REG: 150## Kattraser

REG: 150## Katter

REG: 150## Katter -> djurhållning

REG: 150## Tamkatter

REG: 150## Kattdjur -> djurhållning

REG: 150##

Figure 1.1: Swedish translation software 1

REG: 150## Cat breeds

089 (man:636.82-636.83)

REG: 150## Cats

REG: 150## Cats -> animal husbandry

REG: 150## Domestic cats

REG: 150## Felidae -> animal husbandry

REG: 150##

REG: 150##

REG: 150##

REG: 150##

REG: 150##

si1:636 Cats

si2:630 Cats

GNO:

Figure 1.2: Swedish translation software 2

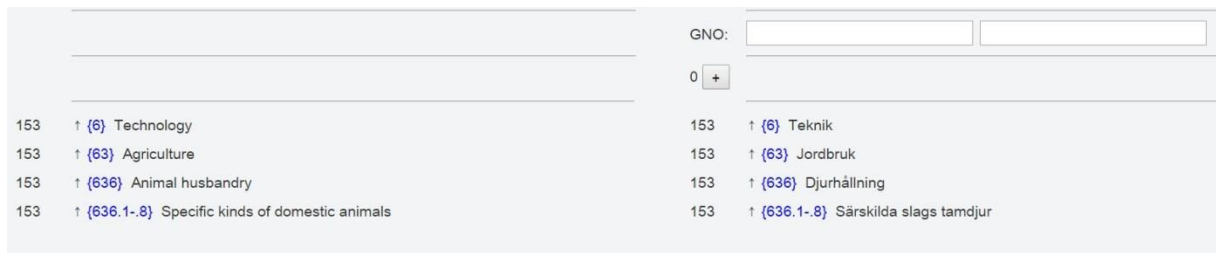


Figure 1.3: Swedish translation software 3

Figures 1.4 and 1.5 (page 16) display the resulting page in WebDewey and illuminate the Relative Index terms in Swedish and English. Here, the mixed translation model is clearly visible. 636.89, further down in the hierarchy, is not translated and there are three blocks for Relative Index terms: Swedish, Swedish-English and English. In the top right hand corner, English as display language has been chosen, so words such as “History”, “Main Classes” and “Tables” are in English. If Swedish is chosen as display language, those words will be displayed in Swedish.

SEARCH ADVANCED SEARCH BROWSE COMMENTS MARC LINK TO OPAC English WebDewey 23 (SV)

Search GO Build 49 / 66

636.8 Katter

- 600 Teknik
- 630 Jordbruk
- 636 Djurhållning
- 636.1-636.8 Särskilda slags tamdjur
- 636.8 Katter**
- 636.8001-636.8009 Standardindelningar
- 636.801-636.808 Särskilda ämnen inom djurhållning av katter
- 636.82-636.83 Särskilda kattraser och olika slags tamkatter
- 636.89 Nondomestic cats

Notes

Comments

Relative Index Terms (Swedish)

- Kattdjur--djurhållning
- Katter
- Katter--djurhållning
- Kattraser
- Tamkatter

Additional Terminology Sources

SAO

- Katter
- Katter--beteende

History

Relative Index Terms (Swedish/English)

- Cat breeds
- Cats
- Cats--animal husbandry
- Domestic cats
- Felidae--animal husbandry

LC Subject Headings

- Sphynx cat

Relative Index Terms (English)

- Cat breeds

Figure 1.4: Swedish translation of WebDewey

49 / 66

Main Classes

[Home](#) [000](#) [100](#) [200](#) [300](#) [400](#) [500](#) [600](#) [700](#) [800](#) [900](#)

Tables

[Home](#) [T1](#) [T2](#) [T3](#) [T3A](#) [T3B](#) [T3C](#) [T4](#) [T5](#) [T6](#)

Dewey Services

[Introduktion](#) [Ordlista](#) [Dewey i Verktygslådan](#) [Deweybloggen](#) [Konverteringstabell SAB-Dewey](#) [Auktoritetsdatabasen](#)

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Figure 1.5: Swedish translation of WebDewey

Werling (2011:5) describes how the software integrates with the ESS and WebDewey translations and how user input into WebDewey goes back into the translation software. His model resembles Mitchell's DDC distribution model

described in Section 1.1.2.1 Editorial Support System, as amended in Figure 1.6. The integration is true for all translations that use the Pansoft translation software.

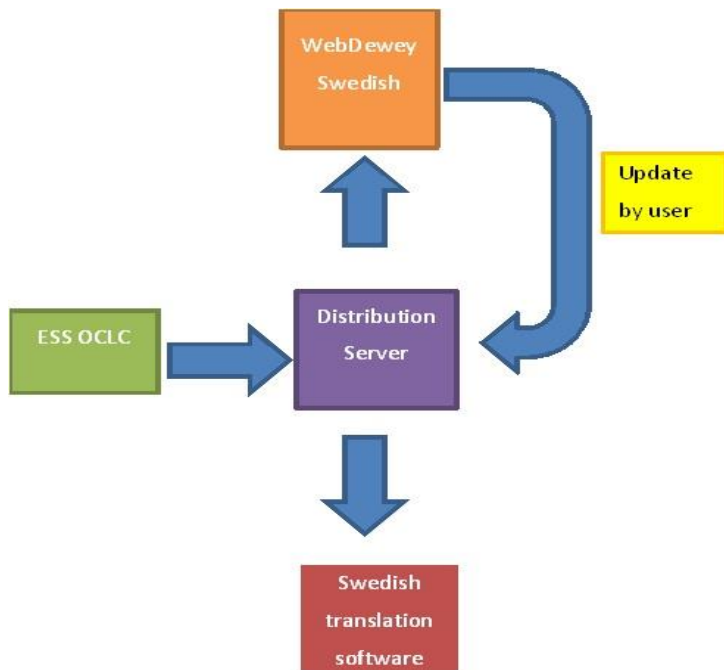


Figure 1.6: Translation software and distribution server integration
(Adapted from Mitchell 2012:17 and Werling 2011:5)

1.1.3 DDC in South Africa

In Section 1.1.2 General overview of DDC the use of DDC around the world, shortcomings and possible solutions were discussed. Translations have been identified as the best option to deal with most shortcomings.

This section highlights the use of DDC in the South African context by giving a short overview of the development of South African-related entries in DDC and discussing areas for possible expansion, suitable options, early and current South African translations of the summaries.

Print editions of DDC have been sold to more than 300 organisations in South Africa since 2004, ranging from universities, government departments and public libraries to private firms. WebDewey, on the other hand, has been sold to fewer than 100 organisations in South Africa, mostly universities and government

institutions, since 2004, dropping to 34 for 2016/2017 (Wiltz e-mail, 18 January 2017).

1.1.3.1 South African-related entries in DDC

This section gives a short overview of South African-related entries in DDC from DDC 1 to DDC 23 in terms of significant changes or additions in some editions; hence, not all editions are mentioned. The purpose of this overview is to indicate the significant growth of such entries from 1876 to the present, but only highlights are given because the research is not intended to be a study of the history of DDC in general, or of the history of DDC in South Africa, but rather focuses on DDC translations. The entries show how some significant South African historical events found their way into DDC. PDF versions of all editions together with the WebDewey editions of 22 and 23 served as sources for the discussion.

Entries refer to periods and events in South African history and politics, (for example Administration of Nelson Mandela); geographic areas (for example Transvaal); languages and literatures (for example Afrikaans); groups of people (for example Zulus).

- 968 (South Africa), referring to the geographic entity and not to a political entity, was the only entry in DDC 1 (1876)
- Nine subdivisions for the geographic area South Africa, namely Sofala, Transvaal, Zululand, Natal, Orange Free State, Kaffraria, Cape Colony, West Coast and Interior were added in DDC 2 (1885)
- Hottentots as index entry was added in DDC 6 (1899)
- The Union of South Africa at 968 was belatedly added in DDC 11 (1922) because the Union was formed in 1910, but did not occur in DDC 7 to DDC 10 (1911–1919). The geographic sub-divisions of the Union also do not appear in the Relative Index of DDC 11
- Afrikaans made its debut at 439.36 (and 896.36) in DDC 12 (1927), in the edition that immediately followed its constitution as an official language in 1925. 496.1 (Hottentot), 496.2 (Bushman) and 496.3 to 496.5 (Bantu) also appeared in DDC 12

- South African entries increased significantly in DDC 16 (1958), consisting mainly of geographic area terms – for example, Kalahari desert, Gold fields, Kimberley, Veld, Witwatersrand, Mossel Bay, Walvis Bay and so on
- The Republic of South Africa (1961–) became the caption at 968 in DDC 17 (1965)
- 320.56 (Apartheid) and the possibility to add from Table 6 (Languages) to 496 for African languages appeared in DDC 18 (1971)
- South African political parties occurred at 324.268, with the possibility for further geographic subdivisions, such as a province in DDC 19 (1979). At 968 the “Administration of ...” indication of historical period divisions occurred for the first time with six divisions. The Homelands (Bantustans) also occurred for the first time in Table 2 in DDC 19
- An extensive expansion of -68 in Table 2, with South African districts, cities and towns occurred in DDC 20 (1989) and five South African languages (496.39771 (Northern Sotho); 496.39772 (Southern Sotho); 496.39775 (Tswana); 496.3985 (Xhosa); 496.3986 (Zulu)) were mentioned explicitly for the first time with corresponding numbers at 896. Venda, Tsonga, Swazi and Ndebele were mentioned only in Table 6 (Languages) and the Relative Index
- 496.3987 (Swazi) and 496.3978 (Tsonga) were added to 496 with corresponding numbers at 896 and the Nelson Mandela administration appeared at 968.06 in DDC 21 (1996). A revision of Table 2 for South Africa was published separately in 1997 because it was not finished in time for DDC 21
- The new South African provinces occurred for the first time and the former homelands were relocated in DDC 22 (2003). Ndebele was relocated in Table 6 (Languages) and added at 496.3989, with Venda added at 496.3976 and corresponding numbers at 896. The administration of Thabo Mbeki was also added in DDC 22
- The administrations of Kgalema Mohlanthe and Jacob Zuma appeared at 968.06 in DDC 23 (2011). New geographic names (for example Tshwane) appeared in Table 2 and the heading at 968 was now Republic of South

Africa and neighbouring Southern African countries in DDC 23 as opposed to Southern Africa Republic of South Africa in DDC 22

- In 2015, a new period subdivision for Post-Apartheid South Africa (1994–) was approved by the editors, and the administrations of Mandela to Zuma were relocated from 968.06 to 968.07. An extensive revision of -68 in Table 2 also took place to accommodate the new district municipalities and was added in 2016

Table 1.2 contains the numbers of South African related entries in the Relative Index from DDC 20 to DDC 22, according to a search in the ESS (Green e-mail, 3 December 2014) and DDC 23 (Green e-mail, 4 January 2017). DDC 23 in the ESS is the newest edition and the only one that is still updated. The first total of each edition indicates Relative Index entries containing the term “South Africa”. The total in brackets shows all Relative Index terms with additional entries for South African languages, ethnic groups, administrations of heads of state and the like. It shows the growth from the one entry in DDC 1 to 900 (1087) entries in DDC 23.

Table 1.2: Total South African-related entries DDC 20 to DDC 23

Edition	ESS entries
20	532 (648)
21	665 (792)
22	776 (959)
23	900 (1087)

1.1.3.2 Areas for possible expansion and suitable options

This section gives a short overview on some topics that South African translators may consider for expansion after local literary warrant has been established. It considers only existing numbers that can be expanded:

- History (968): changes/possible additional notes or expansions to the periods before 1994 to give a more comprehensive focus on South African history and not just the Apartheid regime

- Table 2 (-68): expansions to reflect local municipal level – for example, West Rand District Municipality at -68222 could be expanded for its three local municipalities (more detail in Chapter 5 Section 5.2.3.5 Step 5: Use of the Pansoft translation software)
- Table 5 (-963): -963986, Zulu or any other group could be expanded by clans
- Expansion at Table 6 (Languages) would be unnecessary because all the African languages of South Africa have been added

Further to this, DDC contains 1523 options (WebDewey 2017) of which many provide for emphasis of a specific country or specific language/s. Numbers which usually indicate the subject for North America or American English (XX1 numbers such as 031, 051, 081 and 191) can be used in this way. Chapter 2 Section 2.7 Icelandic and Chapter 2 Section 2.12 Persian describe these and other options in the context of translations. There are also other options which can be useful in the South African context, including but not limited to:

- 289.2 – a permanently unassigned number – can be used to expand South African denominations and sects (combining mainstream churches and African independent churches)
- 708.1, 759.1, 781.6 and 789 can be used to emphasise local art, artists, music and music traditions

South African translators should keep the use of these options in mind to keep the inherent structure of DDC intact.

1.1.3.3 Early South African translations

Section 1.1.3.1 South African-related entries in DDC showed that South Africa is well represented in DDC. This section looks at existing South African translations of DDC.

Batty (1976:304) mentions that full or abridged DDC has been translated into, among other languages, Afrikaans. However, this seems to be unlikely, as Van der Walt (1986) in the first South African thesis on DDC mentions only two

Afrikaans translations in his bibliography namely: *Dewey Klassifikasiesetel vir skoolbiblioteke* (1949 and 1960). His thesis is about DDC adaptations in South African libraries and he would surely have mentioned an abridged translation in Afrikaans. It is however possible that Batty could have considered the translations mentioned by Van der Walt as abridgements.

The 1960 translation is the only one that was available for scrutiny. The subtitle is “verkort en vereenvoudig” (shortened and simplified), but this is not an abridged edition, as its content extends only up to the third summary numbers with a few extended numbers, consisting mainly of added standard subdivisions, but also – for example, 133.8 (Telepatie), 369.1 (Voortrekkerseuns), 636.8 (Katte), 839.96 (Duitse briewe ...) and 968.2 (Transvaal). This was a top to tail classification of books available in Transvaal school libraries at that time.

It is difficult to establish if it was based on Abridged Edition 8 (1959) because Abridged Edition 8 seems not to be available in any library in the world as no reference to it could be found on OCLC WorldCat. A similar edition was published in Great Britain in 1961: *Introduction to Dewey Decimal Classification for British schools*, and explicitly states that it is based on Abridged Edition 8. Although the South African edition further states that the basic numbers from 000 to 999 are used with permission from Lake Placid Club Education Foundation, the copyright owners, no record exists of such correspondence and the current DDC editors do not know about this translation. Table 1.3 (page 23) indicates the above-mentioned examples in relation the British version and DDC 16 (1958) from which Abridged Edition 8 was derived to highlight what the relationship, if any, between them was.

Table 1.3: South African edition (1960) and British edition (1961) versus
DDC 16

South African edition (1960)	British edition (Based on Abridged Edition 8, 1961)	DDC 16 (1958)
133.8 (Telepatie)	X	133.8 (Telepathy)
369.1 (Voortrekkerseuns)	369 (Associations, societies ... including youth clubs)	369.1 (Hereditary, military, patriotic societies of United States)
636.8 (Katte)	636 (Livestock; domestic animals; pets)	636.8 (Cats)
839.96 (Duitse briewe ...)	839 (Other Germanic literatures)	839 (Other Germanic literatures)
968.2 (Transvaal)	X	968 (South Africa); 968.2 does not exist

It seems that the South African edition expanded and modified most of the DDC numbers. The British edition even omitted some numbers of DDC 16 – notation 968 does not appear there, probably because they did not have books about South Africa in their school libraries. The use of 369.1 in the South African edition is incorrect as already explained in Section 1.1.2.5.2 Expansions and adaptations.

1.1.3.4 Later South African translations

In 2009 the three summaries of DDC 22 were translated into Afrikaans. The editor in chief at that time, Joan Mitchell, asked the Interest Group for Bibliographic Standards (IGBS) of the Library and Information Association of South Africa (LIASA) to do this translation (Van Eeden e-mail, 21 January 2013). It confirms that nobody knew of the 1949 and 1960 translations into Afrikaans, otherwise the 1960 edition could have been used as a source for the new translation. Even though more than forty years have passed, a comparison in Table 1.4 (page 24) shows how close some of the terms are to each other.

Table 1.4: Comparison of terms in Afrikaans translations of 1960 and 2009

	1960 translation	DDC 22 summaries (2009)
070	Joernalistiek; Algemene uitsaaidienste	Nuusmedia, joernalistiek & uitgewery
150	Sielkunde	Sielkunde
230	Christelike teologie	Christendom & Christelike teologie
360	Volkswelsyn	Maatskaplike probleme & dienste; genootskappe
510	Wiskunde	Wiskunde

A project to translate the summaries in the remaining nine official languages was launched by the researcher in 2012 because it seemed politically incorrect that there was, at that time, only an Afrikaans translation. An advertisement for volunteer translators was placed on both the LIASA and Sabinet mailing lists. Eventually, most of the volunteers withdrew and only two translations were finished (Northern Sotho and Tsonga). These two translations were then edited by the Unit for Language Facilitation and Empowerment of the University of the Free State and the other seven translations of the summaries were done by their translators.

By 2013, the DDC summaries were available in all South African languages and an attempt was made to add the other nine, together with Afrikaans, to dewey.info. However, this did not happen as dewey.info was taken offline shortly after that due to technical difficulties. Various other attempts to use the summaries were made and these will be discussed in Chapter 3 Section 3.8.1 Preliminary efforts to use DDC summaries and planning of the translation evaluation tool.

Figure 1.7 (page 25) shows a part of the summary translations as an example.

000	Rekenaarwetenskap, inligting & algemene werke	Isayensi yekhompyutha, imininingwane nemisebenzi evamile	Inzululwazi ngekhompyutha, ulwazi nem
001	Kennis	Ulwazi	Ulwazi
002	Die boek	Incwadi	Incwadi
003	Stelsels	Izindlela	Iinkqubo
004	Dataverwerking & rekenaarwetenskap	Isayensi yekhompyutha	Inzululwazi ngekhompyutha
005	Rekenaarprogrammering, programme & data	Uhlelo lwezokhompyutha, izinhlelo nemininingwane	Ukufaka iinkqubo kwikhompyutha, iinkq
006	Spesiale rekenaarmetodes	Izindlela ezikhethekile zekhompyutha	Iindlela/iimethodi ezizodwa zekhompyut
007	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
008	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
009	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
010	Bibliografie	Uhlu lwemibhalo efundiwe	Uludwe lwemibhalo ekubhekiselwe kuyo
011	Bibliografieë & katalogusse	Uhlu lwemibhalo efundiwe namakhathalogi	Uludwe lwemibhalo ekubhekiselwe kuyo
012	Bibliografieë & katalogusse van individue	Uhlu lwemibhalo efundiwe namakhathalogi abantu	Uludwe lwemibhalo ekubhekiselwe kuyo
013	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
014	Bibliografieë van anonieme & pseudonieme werke	Abantu abangaziwa nemisebenzi engasebenzisi amagama ayiwo	Imisebenzi engenagama nehalwe ngega
015	Bibliografieë van werke afkomstig van spesifieke plekke	Emisebenzi evela ezindaweni ezikhethekile	Yemisebenzi esuka kwiindawo ezithile
016	Bibliografieë van werke oor spesifieke vakke	Emisebenzi yezihloko ezikhethekile	Yemisebenzi engezifundo ezithile
017	Algemene onderwerpskatalogusse	Amakhathalogi ezihloko ezivamile	Iikhathalogu zezifundo ngokubanzi
018	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
019	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
020	Biblioteek- & inligtingkunde	Umtapo wolwazi nesayensi yemininingwane	Iinzululwazi zamathala eencwadi nolwaz
021	Biblioteekverwantskappe	Ubudlelwano bomtapo wolwazi	Ubudlelwane bamathala eencwadi
022	Administrasie van biblioteekgebou	Ukuphathwa kwezihlahla ezibonakalayo	Ulawulo lwesityalo ngokwaso
023	Personneelbestuur	Ukuphathwa kwabasebenzi	Ulawulo lwabasebenzi
024	[Nie toegeken nie]	[Akubekiwe]	[Alabelwanga]
025	Biblioteekwerksaamhede	Imisebenzi yomtapo wolwazi	Imisebenzi yamathala eencwadi
026	Biblioteke vir spesifieke vakke	Imitapo yolwazi yezihloko ezikhethekile	Amathala eencwadi ezifundo ezithile
027	Algemene biblioteke	Imitapo yolwazi evamile	Amathala eencwadi ngokubanzi

Figure 1.7: Part of the South African summaries

1.2 Problem statement

It is clear from Section 1.1 Background to the study that translations of DDC are costly, not only in terms of the translation software as explained in Section 1.1.2.5.4 Pansoft translation software, but also in terms of human resources and time involved as discussed later in Chapter 2 Section 2.5 German and Chapter 2 Section 2.11 Norwegian and Swedish.

Costs of translations are however not the only barrier to feasibility or the possibility of accomplishing something (Merriam-Webster 2016, sv “feasible”). In the context of this research, feasibility also refers to technical aspects (such as the use of Google Translate, the Pansoft translation software and an appropriate model for translations) and organisational aspects (such as stakeholders, sponsorship and contracting).

1.3 Research questions

Research questions in general are the result of what Alvesson and Sandberg (2013:31) call a process of gap spotting, and specifically “neglect spotting” where something has been neglected in literature or never researched. In this case, it

refers to the limited research about DDC in general and more so the limited research about DDC translations. There is no research available on DDC translations in South Africa.

The problem statement can be converted to the following key research question:

To what extent are South African translations feasible?

The following sub-questions support the main research question:

1) To what extent do articles on DDC translations give direction pertaining to the matter of the feasibility of translations?

- What are the main themes in these articles?
- What challenges do translations present and how do translators deal with these challenges in terms of?
 - The translation process and sequence of translating contents
 - Problems with translation of DDC terminology
 - Cost of translations
- Do these articles give insight into how translations deal with apparent shortcomings in DDC?
- Do these articles show how translators should handle multiple languages?

2) How does Google Translate perform in translating parts of Abridged Edition 15?

- How comprehensive are Google translations?
- What is the degree of editorial effort?

3) Is it possible to simplify the translation process?

- To what extent can South African translators use Google Translate for the translation process?

- How can Google translations assist with minimising time, effort and human input?
- Which model of translation, pertaining to the Pansoft translation software, can assist in the simplification of the process?

1.4 Purpose of the study

The purpose of the study is to investigate existing literature about translations to decide if there are any indications on how to enhance the feasibility of multiple language translations of DDC. The research also describes other means of enhancing feasibility in a multilingual context – for example, using Google Translate.

1.5 Motivation for the study

South Africa is represented on the DDC Editorial Policy Committee (EPC). The EPC is an international board with ten members whose main function is to advise the DDC editors and OCLC on matters relating to changes, innovation and the general development of the DDC (Introduction to the Dewey Decimal Classification 2017:2). South Africa is the only African country with a representative, as well as being one of only two countries from the southern hemisphere, the other being Australia. The other members are from Great Britain, Canada and the United States.

The researcher became aware of dewey.info and the fact that the Afrikaans summaries of DDC were part of it when he became the EPC representative for South Africa. The fact that the other South African languages were not part of dewey.info was seen as constituting a gap and as contradictory to language diversity. This led to the translation of the summaries into these languages as described in Section 1.1.3.4 Later South African translations.

Language diversity is enshrined in South Africa's constitution (South Africa 1996). Public services must be provided in at least three of the eleven official languages according to the Use of Official Languages Act of 2012 (South Africa 2012).

Just as it does in the public sphere, multilingualism can also thrive in the cyber sphere (Internet). In South Africa, the National Human Language Network (NHN) promotes the automatic processing and use of the eleven official languages on the Internet (Mariani 2015:56). The United Nations Educational, Scientific and Cultural Organization (UNESCO) also plays a major role in promoting multilingualism throughout the world, especially on the Internet (Mariani 2015:60).

Gibson (2015:61) indicates how the Internet can become a refuge for multilingualism because it is easy and inexpensive to produce documents – for example blogs, and to publish these online. A multilingual edition of WebDewey can similarly become a refuge for South African languages. According to Wellner (2015:214), both multiculturalism and multilingualism cultivate a sense of belonging and the preservation of marginalised languages on the Internet can lead people to new perspectives of the world and can enrich thinking (Wellner 2015:221). Hence, translations of DDC can counteract the marginalisation of South African languages. In addition, it is noted that learning foreign or other languages can deepen cultural identity (Motlak 2015:360).

Section 1.5 indicated how important multilingualism and the preservation of marginalised languages are and how South African translations of DDC can help with this and with nation building or cultivating a sense of belonging. This serves as motivation or starting point for the current research. More specific research objectives feature in Section 1.6 Research objectives.

1.6 Research objectives

The objectives of the study were:

- To investigate to what extent existing literature on translations contributes to the discussion about feasibility of DDC translations in the multilingual context of South Africa
- To investigate how Google Translate performs with the translation of chosen parts of Abridged Edition 15

- To investigate to what extent Google Translate can be used for translations of DDC
- To describe the possible simplification of the translation process
- To investigate a possible translation model

1.7 Delimitations of the study

This section gives an indication of the delimitations of the research.

The critical evaluation of the literature focused on sources relating to translations and included sources about translations containing expansions and adaptations. However, because of the lack of sources, it was complemented with sources on the broader aspect of internationalisation. Expansions and adaptations in the context of the English edition of DDC were not evaluated, but were briefly discussed in Section 1.1.2.5.2 Expansions and adaptations because they are not part of a translation.

The researcher used Abridged Edition 15 for Google Translate translations because it was more user-friendly than WebDewey. This choice is discussed in more detail in Chapter 3 Section 3.8.2.1 Sample size and procedure.

The chosen parts of Abridged Edition 15 were translated into Afrikaans only because the researcher does not have enough knowledge of other South African languages to make judgments about the quality of such translations.

The researcher did not attempt to translate the text and examples (used in Chapter 4), or use other human translators because this would have been time consuming and expensive. Under normal circumstances, it is always humans who translate DDC. A key characteristic of this research is not, however, to indicate how machine translations can substitute for human translations, but to indicate how machine translations can assist humans with DDC translations.

The researcher included the other South African languages in the discussion about further translations and the choice of a model for South African translations in Chapter 5 Section 5.3 Scenarios for a South African translation model.

The research does not incorporate a full cost-analysis of translations because such an analysis usually forms part of an actual translation project after a contract has been signed with OCLC.

Although some indications are given about possible expansions and options pertaining to South Africa in Section 1.1.3.2 Areas for possible expansion and suitable options, these indications are by no means comprehensive because the actual translation process would dictate decisions on expansions, options and adaptations and this could differ among the various languages. The researcher does, however, indicate that this can be a topic for further research in Chapter 6 Section 6.4.1 Pure translation versus adaptation, although he supports translations which keep the integrity of DDC intact.

1.8 Significance of the study

The research contributes to the broader discipline of information science and, more specifically, to bibliographic control and classification, as well as to the enrichment of the use of South African languages in the information science sector. In addition, the research contributes to the broader milieu of development of research in South African languages and to the deepening of a national cultural identity.

Translations of DDC into South African languages do not exist, except for the summaries that have been translated in recent years. This research was therefore unique and original because the phenomenon of full translations has never before been considered.

This research is further important because it focuses on the practical use of official languages in the library and information sector and thereby expedites the opportunity for the usage, development and exposure of these languages.

The study attempts to give some direction in reducing shortcomings of DDC relating to South Africa and contributes to an indication of the possible expansion of DDC numbers within South African translations.

The research also contributes to the body of research on DDC translations on an international level. It could give direction to other multilingual countries on how to develop a model for multilingual translations of DDC.

Further, the research could also lead to the promotion of DDC in South Africa and develop an interest in DDC in African countries where it is not yet used.

1.9 Research methodology

The research type is a combination of applied and basic research because it uses empirical evidence to ascertain the feasibility of South African translations of DDC. In this study, the pragmatist approach as paradigm which uses both positivist and interpretivist world views is used (Ngulube 2015:128). The research approach is inductive since the researcher could make inferences from data that led to the theory regarding the feasibility of South African translations of DDC. Data collection techniques of pragmatic research often tend to be mixed or multiple methods oriented (Saunders, Lewis & Thornhill 2012:140).

The researcher used the mixed method strategy consisting of two methods of data collection (Denscombe 2014:153), namely critical analysis of the literature supplemented with document analysis, and technology-based research.

The study is exploratory by nature and looks at the feasibility problem in its preliminary stage which is typical of exploratory research (Babbie 2010:87). The study gives possible ways of dealing with South African translations, but reaches no definitive conclusion, as is often the case with exploratory studies.

The research uses both quantitative and qualitative data, as summarised in Table 1.5. (page 32). The research methodology is discussed in detail in Chapter 3 Research methodology.

Table 1.5: Summary of quantitative and qualitative data

Chapter	Data type	
	Quantitative	Qualitative
Chapter 2		Critical evaluation of literature
Chapter 4	Evaluation of Abridged Edition 15's Google translations; Primary data	
Chapter 5		Consolidates data from Chapter 1, derived from documentation such as the various DDC editions and e-mails with the data from Chapter 2 and is exploratory in nature (Inductive); Secondary data

1.10 Thesis structure

The thesis consists of the following chapters:

Chapter 1 provides the background to the study, first by means of a broad overview of bibliographic control and then by describing how classification is part of bibliographic control. A broad introduction to DDC follows, highlighting apparent shortcomings and possible solutions to these shortcomings. A discussion on translations as the most appropriate solution and the Pansoft translation software follows. There is also an overview of South Africa-related occurrences in DDC and existing South African translations. Chapter 1 also details the research problem and questions, motivation, purpose and objectives, delimitations and significance of the research, with a short discussion on the research design.

Chapter 2 provides a critical evaluation of the literature on DDC translations to decide if it gives direction pertaining to the feasibility of translations. The chapter illuminates the main themes in the literature and whether the literature contains any indications of the translation process, sequence of translating content,

problems, costs, how to deal with shortcomings in DDC using translations and how to handle translations of multiple languages.

Chapter 3 describes the research methodology. It specifies the research objectives, derived from the research questions because the questions and objectives dictate the research design. The broader research type and paradigm precede the discussion of the design. The qualitative and quantitative data used in the research concludes the discussion on research methodology.

Chapter 4 presents the data of the empirical investigation into Google translations of chosen parts of Abridged Edition 15 into Afrikaans and answers the question of how Google Translate performs in the translation process in terms of comprehensiveness and degree of editorial effort.

Chapter 5 provides further information on the possibilities of the translation of DDC into South African languages. It describes a possible workflow for moving towards complete South African translations and shows how a mixed translation model can enhance the feasibility of such translations.

Chapter 6 summarises the findings and gives a general recommendation for the way forward for South African translations, as well as suggestions for further research.

1.11 Chapter summary

This chapter presented the background of the wider DDC environment in which the feasibility of South African translations must be investigated.

The broad area of bibliographic control and the role of classification, with specific reference to DDC was described. The worldwide use of DDC was emphasised and some issues on shortcomings were discussed. This led to a summary of possible solutions of which translations with expansions based on local literary warrant have been indicated as the most appropriate. The significance of the Pansoft translation was also discussed. The focus then moved to the multilingual South African context of DDC.

The problem statement, research questions, objectives, delimitations, significance of the study and a summary of the research methodology were also reported.

Chapter 2 Critical analysis of reported research evaluates literature on translations and possible contributions to the question of feasibility of translations in the South African context.

Chapter 2 Critical analysis of reported research

2.1 Introduction

This chapter presents an analysis of literature on translations of DDC – named as adaptations in a language other than English – as well as other translations to find answers to the following main research question and sub-questions:

To what extent do articles on DDC translations give direction pertaining to the matter of the feasibility of translations?

- What are the main themes in these articles?
- What challenges do translations present and how do translators deal with these challenges in terms of?
 - The translation process and sequence of translating contents
 - Problems with translation of DDC terminology
 - Costs of translations
- Do these articles give insight into how translations deal with apparent shortcomings in DDC?
- Do these articles show how translators should handle multiple languages?

The researcher presents the evaluation starting with a general section that discusses sources that do not refer to specific translations or to more than two translations, and thereafter arranging it alphabetically according to language, except for Swedish which features with Norwegian because of articles discussing these two together. This keeps the discussion of translations of the same language or language group together.

A short critical analysis follows some articles or groups of articles, though Section 2.16 Chapter summary contains a holistic critical overview.

Although there are many sources dealing with DDC in respect of its general history, expansions and adaptations in all the classes, there are few pertaining to

translations of DDC. The researcher conducted searches for the duration of the research through Encore, ProQuest, OCLC Worldcat and Google Scholar and after very specific searches using “Dewey Decimal Classification” and/or “DDC” with terms such as “translations”, “versions” and “internationalisation” yielded limited but relevant sources, he further searched only “Dewey Decimal Classification” which resulted in mostly irrelevant sources.

The researcher found only one doctoral study distantly connected to DDC translations and briefly discusses this in Section 2.14 Spanish. Only one master’s study pertaining to DDC translations, and specifically to the effect of the Swedish translation on users of DDC, was found, as discussed in Section 2.11 Norwegian and Swedish. No South African resources specifically relating to translations were found. South African articles on DDC focused on discussions of new editions or the role of DDC in the South African National Bibliography.

The following theses and dissertations are found on the NRF’s Nexus database of South African completed and current research (NRF’s English translations):

- *Die ordening van lektuurvoorraad vir sosiale biblioteekdiens = The ordering of reading stock for social library services* (Fourie 1970)
- *The cataloguing and classification of a South African legal collection* (Greenstein 1970)
- *Recataloguing and reclassification projects and methods in Cape Town libraries* (Hinchliff 1974)
- *'n Ontleding van die begrippe klas, faset en kategorie met die oog op die evaluering van bibliografiese klassifikasie vir inligtingsontsluiting = An analysis of the concepts class, facet and category considering the evaluation of bibliographic classification for the indexing of information* (Pansegrouw 1979)
- *The place of cataloguing and classification in the curricula of South African universities* (Spruyt 1980)
- *Aanpassing van die desimale klassifikasiesistelsel van Dewey in Suid-Afrikaanse biblioteke = Adaptation of the decimal classification system of Dewey in South African libraries* (Van der Walt 1986)

- *Die inligtingontsluitingstelsel van die Stevenson-Hamilton Inligtingsentrum, Skukuza = The information cataloguing system for the Stevenson-Hamilton Information Centre, Skukuza* (Burger 1992)
- *Die bruikbaarheid van bibliografiese klassifikasie in intydse katalogi = The usefulness of bibliographic classification in in-time catalogues* (Ducharme 1996)

Of these, only Van der Walt's thesis is useful for this study because the others are broad and not specifically focused on DDC or discuss DDC as classification tool only.

In addition to the small number of resources on translations in specific languages, the researcher discusses resources dealing with expansions and adaptations connected to translations or dealing with internationalisation of DDC in a broader context. In respect of some languages, the researcher also mentions the newest available translation as described in issues of Dewey Decimal Classification News. This is done for the sake of completeness only because these newsletters cannot be considered as research.

2.2 General overview and sources on multiple translations

The idea of internationalisation below refers to adapting the content of DDC for its international body of users as opposed to international or worldwide use.

Figure 2.1 (page 38) indicates the evolvement of the relationship between DDC and its international users, from a situation where translations were in abundance and mostly unlicensed to the current situation that allows licensed translations, with expansions and adaptations based on local literary warrant, using the Pansoft translation software described in Chapter 1 Section 1.1.2.5.4 Pansoft translation software.

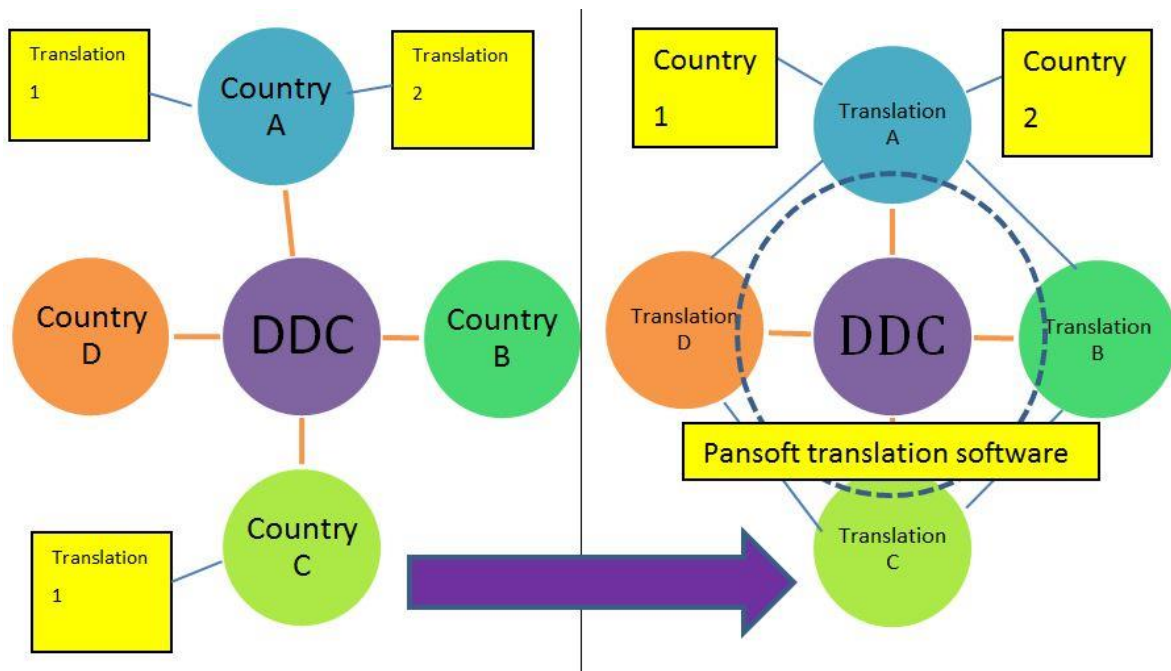


Figure 2.1: Evolving relationship between DDC and its international users

Vann (1965) describes the field surveys undertaken in the 1960s. More than 100 nations used DDC at that time, and the idea was to promote the increasing usefulness of DDC to foreign libraries (Vann 1965:550). One of the recommendations of the interim report is that there should be a special introduction for English second and third language speakers (Vann 1965:552). Some of the criticisms against DDC are lengthy numbers, irregular structure, illogical arrangement of the 300 class and Christian bias. Vann mentions both the need for an international advisory council and international meetings, as well as contradictory views on expansions for Buddhism, Hindi, Islam and Afrikaans (Vann 1965:553).

This article of Vann (1965) illuminates many of the problems of DDC users and mentions a South African aspect (Afrikaans), but does not give insight into translations as such.

Batty (1976) gives a historical overview of DDC in his article on its international uses and mentions that, according to Sarah Vann, DDC was in use in more than 100 countries by the middle of the sixties (Batty 1976:304). He further mentions major adaptations such as the Korean Decimal Classification and the Nippon

Decimal Classification (Japanese). The most interesting information is, however, “translations exist, of full or of abridged editions, in Afrikaans, Arabic, French, Hebrew, Indonesian, Korean, Malayan, Sinhala, Spanish, Thai, Turkish, and Vietnamese” (Batty 1976:304). Is he referring to the Afrikaans translations for school libraries that Van der Walt (1986) also mentioned? This cannot be established because Batty (1976) puts forward no more information on this matter. He follows with statistics of use in various countries, with emphasis on Great Britain, Australia and New Zealand.

Batty (1976) gives strong evidence of international use, and the existence of many translations, but does not give any further insight into feasibility aspects of translations.

Downing (1976) describes DDC’s place in the world. He also mentions Vann and Seely’s field surveys (Downing 1976:797). He indicates that the area and racial, ethnic and national group tables further confirm the international trend (Downing 1976:798). The structure of DDC does not allow for major changes, but options are possible – for example, for Islam. He emphasises the new trend toward international cooperation, the French translation of 1974 and other authorised translations namely, Icelandic, Indonesian, Persian, Japanese, Korean, Malay, Norwegian, Turkish and Vietnamese (Downing 1976:800).

Downing (1976) echoes all other articles written during this time when the library world was celebrating the centenary of DDC.

Dewey international ... (European Centenary Seminar on the Dewey Decimal Classification 1977) consists of papers delivered at the European Centenary Seminar on Dewey Decimal Classification and includes various papers which focus on the internationalisation of DDC a hundred years after it came into existence. It covers the use of DDC in North America and Britain, the role of the EPC, how a DDC edition is prepared, its importance in universal bibliographic control, as well as articles about the French and Spanish translations of that period. It serves as bridge between DDC 18 (1971) and DDC 19 (1979), offering insights into people’s perspectives on DDC 18 and looking at their expectations of the next edition. The opening paper talks about internationalisation in general and

is discussed in the paragraph following this one. The papers on specific translations feature in Section 2.4 French and Section 2.14 Spanish.

Humphry (1977:10) mentions that international use of DDC went back as far as DDC 4 or DDC 5, but increased noticeably only around 1958 with DDC 16. The field survey reports of Vann and Seely, published in 1965, led to the strengthening of international relations (Humphry 1977:11). British and Canadian representatives were appointed to the EPC in the early 1970s. According to Humphry, Forest Press declared that foreign language editions should provide for local needs through translations, expansions and adaptations where the English edition could not accommodate needs (Humphry 1977:13). Humphry also mentions discussions with South Africa (Humphry 1977:14).

Humphry (1977) gives a good overview of the new direction that DDC was moving towards, even mentioning South Africa, and indicates how foreign users can accommodate local needs by means of translations. However, he makes these remarks in the context of an introductory paper and not a comprehensive discussion on translations.

Sealock (1978:31) describes the “international commitments” of DDC and indicates that more than 138 countries use the system. He gives a brief historical overview, focusing on the relationship between DDC and UDC since the Belgian Paul Otlet’s request to Melville Dewey in 1895 to expand and translate DDC (Sealock 1978:32). He chooses Norway as an example of a foreign country that adopted DDC as early as 1898 and indicates its current nationwide use (Sealock 1978:32). He mentions the international surveys of Vann and Seely and states that internationalisation began only after the publishing of DDC 17 (Sealock 1978:33). He discusses the first joint French translation by Canada and France of 1974 based on DDC 18, the 1976 Hindi abridgement of the same edition, with expansions pertaining to art, religion, philosophy and literature and a new Spanish translation of DDC 18 (Sealock 1978:34).

Although Sealock (1978) gives only an overview of translations, this does give valuable information on where expansion in a translation can occur.

Custer, editor of DDC 16 to DDC 19, gives an overview of his time as editor. He also talks about internationalisation (Custer 1980:100). He mentions that this had already started from DDC 16 (Custer 1980:101) as opposed to Sealock's view that it started only after DDC 17. He also mentions the reports of Vann and Seely which was published after the publication of DDC 16 in 1965. He indicates how the areas and ethnic and national group tables further demonstrate this internationalisation process. He discusses further developments around internationalisation, including international meetings – for example, the International Federation of Library Associations (IFLA), the EPC and further expansions. Unfortunately, he does not give more information about the expansions. He also shows the modernisation in terms of developments on women, Native Americans, the separation of Jewish history and Jewish religion, Roman Catholicism and Islam (Custer 1980:101). He states that literary warrant defines changes and not theoretical considerations so that DDC does not discriminate against anyone (Custer 1980:104).

Custer's (1980) article is of value for stating explicitly the idea of literary warrant.

Momeni (1985) examines the socio-cultural factors that influence adaptations when translating DDC into Middle Eastern languages such as Arabic, Turkish, Persian and Hindi. He mentions that DDC is the most used system (Momeni 1985:4). He lists categories of adaptations:

- Deletions for brevity
- Deletions for socio-cultural reasons
- Adaptations for socio-cultural reasons
- Changes (Momeni 1985:6)

The Arabic translation of 1960, based on DDC 16, contained adaptations about Islam, Arabic language and literature and partial changes in law and administration, additions in Arabic history and new notations for Arabic culture (Momeni 1985:7). Momeni discusses similar adaptations and changes in the Persian, Turkish and Hindi translation (Momeni 1985:8–11). He further indicates that most expansions are for local interest sake, but that the majority of changes

consist of deletions. He highlights areas such as philosophy, religion, education, public law and administration, social organisations, local languages and literatures, national arts and sculpture and history and geography, with Islam being one of the major factors for adaptations and expansions and Christianity the major factor in deletions, except in the Hindi translation (Momeni 1985:28). He also shows that these translations prefer shorter notations and avoidance of the auxiliary tables – for example, standard subdivisions (Momeni 1985:29). There are also many conceptual errors – for example, wrong subdivisions for Russian language and editorial or technical errors such as Turkish language at 420, but literature at 810 in the Turkish translation (Momeni 1985:32).

Momeni (1985) gives a good indication of the classes within DDC that have shortcomings and upon which South African translations should focus in terms of expansion within the limits of local literary warrant.

Van der Walt's (1986) thesis about adaptations of DDC in South African libraries is the only existing South African work on DDC. It gives valuable insight into the various adaptations used by libraries at that time, but it is outdated because many of the adaptations, especially in terms of -68 Table 2, 968 historical periods and South African languages, were used to incorporate these aspects into DDC from DDC 19 onwards. Some of the expansions and adaptations he focuses on in his appendices are:

- Roman law (340.54) at UNISA and four other institutions
- Anglo-Boer War and Great Trek (968) at the University of the Orange Free State and two other institutions

Van der Walt indicates that there were a large number of expansions and adaptations in use in South Africa at that time and that they were not necessarily good solutions for shortcomings in DDC – indeed, the sheer number of adaptations indicates the chaos that they cause. The main value of his thesis, however, lies in the fact that he mentions the early Transvaal School Library Service Afrikaans translation of 1949 (Van der Walt 1986:187, 192) and 1960, as discussed in Chapter 1 Section 1.1.3.3 Early South African translations. He also

mentions a similar edition of the Cape School Library Service (Van der Walt 1986:192). His is also the only South African thesis specifically focused on DDC.

Dewey: an international perspective ... (IFLA General Conference 1991), a follow up to European Centenary Seminar on the Dewey Decimal Classification (1977), contains conference papers reporting on DDC 20 (1989). It gives further attention to internationalisation of DDC and includes three papers about translations (Arab, French, and Italian). Also included is an overview dealing with the changes in DDC 20 (music and computer science are each discussed in separate articles) and a critical review of the new edition. The introductory paper on internationalisation is discussed in the next paragraph and the papers on translations feature in Section 2.3 Arabic, Section 2.4 French and Section 2.9 Italian.

Sweeney (1991) presents an overview of the international use of DDC in the volume mentioned in the previous paragraph. He indicates that it is in use in more than 135 countries (Sweeney 1991:11) and, despite the Western bias, there exist more than 30 translations or adaptations, including French, Spanish, Italian, Norwegian, Danish, Greek, Hindi, Arabic, Persian, Turkish, Hebrew and Japanese (Sweeney 1991:12). He discusses how to deal with the needs of all international users, but retain the English edition as an international bibliographic standard (Sweeney 1991:14). The discussion focuses on how committees within library associations can negotiate changes with the DDC editors, mostly expansions of their countries' geographic subdivisions in Table 2 (Sweeney 1991:17) or options, especially in 200 Religion (Sweeney 1991:20).

Sweeney (1991) gives a few indications of how to reduce the shortcomings of DDC, but apart from mentioning some translations does not give insight into how translations can help with this. He repeated the content of this paper in a 1995 article and it is thus not necessary to discuss the article separately.

Beall (1991) also contributes to the general overview of internationalisation in the above-mentioned source. She discusses expansions of the geographic areas, ethnic and national groups, languages, history, language and literature schedules and music (Beall 1991:64-80).

The trend of linking DDC editions to internationalisation continued with *Dewey Decimal Classification: DDC 21 and international perspectives ...* (IFLA General Conference 1997). These collected conference papers report on DDC 21 (1996) and follow the pattern of the two previously mentioned conference sources. The continuing internationalisation (use in Asia-Pacific and China and the most recent Spanish translation), introduction to the new edition, major changes, the use of DDC in national bibliographies and the first electronic “edition”, Dewey for Windows, are discussed. The move to electronic format was one of the major developments during this time and changed the DDC landscape forever. Although there is only one paper about it in this book, this development actually overshadows the internationalisation aspect, but at the same time opens the door for further developments of DDC translations. The paper on the Spanish translation features in Section 2.14 Spanish.

Beall (2003) indicates different approaches to the expansion of DDC in translations, relating to the German and Vietnamese translations. She accentuates the importance of literary warrant: that is the existence of a body of literature on a particular topic. For a translation however, literary warrant in local systems is just as important for considering expansions on local level (Beall 2003:2). She mentions the following expansions:

- German translation: Table 2 and German political parties (Beall 2003:3–8)
- Vietnamese translation: Vietnamese peoples (ethnic groups), political parties, languages and literatures, Table 2 and the history schedule (Beall 2003:8–9)

Beall also shows how to compromise and reach solutions in this context. DDC numbers in the German and Vietnamese translations that she discusses, as already indicated in the first sentence of this paragraph, vary in length from the English because they have been expanded, but they remain the same numbers. Some translations that Beall does not mention by name do not expand the United States to the same extent as the original English (Beall 2003:9) and South African translators may consider this as well. The practice of extending numbers of local

importance according to local literary warrant could also be considered in South African translations.

Mitchell and Vizine-Goetz (2009) give an overview of DDC and discuss the development of the relationship between DDC and OCLC, translations, mappings to other schemes, data representation, history of the editorial team and the EPC. They indicate how widely DDC is used in the world. They mention the following authorised translations undertaken since OCLC acquired DDC in 1988: Arabic, French, German, Czech, Hebrew, Icelandic, Italian, Norwegian, Russian, Spanish, Turkish and Vietnamese. There are plans for a new abridged Indonesian translation, the Swedish mixed translation and a new German web-only translation. Current translations are localised. This means that terminology and examples are in the specific language. These translations are also interoperable, meaning that they contain authorised expansions (Vietnamese Table 2) or contractions. Table 2 in the English edition is a logical abridgement of the Vietnamese Table 2 (Mitchell & Vizine-Goetz 2009:662).

Although Mitchell and Vizine-Goetz (2009) describe translations on one page only, they give valuable information on the current translations as well as localisation and interoperability which may be useful in the South African context.

Beall (2012) gives an update on DDC translations. She describes how the new Indonesian translation from Abridged Edition 15 adds Table 2, developments in 297 (Islam), expands 305.899 and Table 5 (Indonesian ethnic groups), Table 6 (Indonesian languages), and 959.8 (Indonesian history) from DDC 23 (Beall 2012:4). The abridged Vietnamese translation of 2006 also added these expansions from DDC 22 (Beall 2012:5) and a new Vietnamese translation of DDC 23, with expansions in Table 2 is in process (Beall 2012:9). The new Arabic translation also includes expansion at 297 (Islam) about the Koran, religious law and Mecca (Beall 2012:10). The Swedish mixed translation uses standard terminology only in Swedish – for example, “Klassificera här”, and a preliminary WebDewey translation began to function in 2012 (Beall 2012:11).

Beall (2012) gives valuable information on how to handle translations, especially with the indication of how translators combine abridged and full translations and

deal with standard terminology in a mixed translation setting. This is valuable for the South African context as described in Chapter 5 Section 5.2.3.5 Step 5: Use of the Pansoft translation software.

Individual translations will be discussed in sections 2.3 to 2.15.

2.3 Arabic

Unlicensed Arabic translations of DDC appeared from as early as 1947 (Aman & Salem 1991:33), with a translation by al-Sheneti and Kabesh published in 1960, shortly after DDC 15 and Abridged Edition 9 (Aman & Salem 1991:34). Arabic translations focused mostly on eliminating the Christian bias of the 200 main class, and changes at philosophy, language, literature, geography, history and art.

Aman and Salem (1991:36) indicate that, regardless of the fact that most of these translations were illegal, they played a major role in spreading the use of DDC in the Arab world. They mention the first licensed Arab translation based on Abridged Edition 11, with expansions taken from DDC 19 and published in 1984 in two volumes (Aman & Salem 1991:38).

Aman and Salem (1991) give a good indication of the classes within DDC that have shortcomings and upon which South African translations should focus in terms of expansion within the limits of local literary warrant.

In a literature review, Idrees (2011) shows bias toward Islam in mainstream classification because of a lack of interest from people responsible for classification schemes. He also indicates the emergence of various indigenous classification systems in the Islamic world. DDC class 297 is insufficient for libraries with extensive Islamic collections (Idrees 2011:124-125). He indicates the large number of works published about Islam (Idrees 2011:125–126) and mentions expansions of Qaisar, 1974 (Idrees 2011:126), Shafi, 1962 (Idrees 2011:127), Sardar, 1979 (which was actually Sardar's own system), Tashkandi, 1977 (translation and expansion) and many others (Idrees 2011:127-129). All these translations featured expansions and/or adaptations about Arabic language, literature, philosophy, Islam and Islamic history. However, Idrees, in discussing

these translations, ignores the DDC principle of literary warrant which is based on OCLC's WorldCat and the hierarchical structure and integrity of DDC. In addition to the literature review already mentioned, he wrote two similar articles, one in 2012 containing interviews with librarians in Islamic countries and the other, in 2013, containing a survey of library and information science scholars in Islamic countries.

All three of his articles contain the same argument in respect of the shortcomings of DDC classifications of Islam, but without considering the DDC principles mentioned in the previous paragraph. The articles also show the confusion that certain expansions and adaptations cause, as in Van der Walt's (1986) thesis.

Planning for a new Arabic translation of DDC 22, including expansions of Islam (297), started in 2009 (Dewey Decimal Classification News 2009:2) and was expected to be published in 2015 (Dewey Decimal Classification News 2015:2).

2.4 French

The first French translation – by Paul Otlet and Henry La Fontaine of the Institut International de Bibliographie – dates from 1899, but it was actually an adaptation and became known as the Universal Decimal Classification in English (Comaromi 1976:322). Béthery (1991:49) mentions that, until the 1970s, the only French translation was an abridgement of a few pages; however, Guillien (1977:64) says that Canadian and French libraries started with a French translation based on DDC 18 in 1967 and completed it in 1974. By 1991, this translation and an abridged translation of DDC 19 were the only French translations in use (Béthery 1991:50).

In 2005, Association pour l'avancement des sciences et des techniques de la documentation (ASTED) published the French translation of Abridged Edition 14. Le Cercle de la librairie in Paris, France, has published several abridged translations of unabridged editions, including one based on DDC 22 in 2005 (Dewey translations 2017).

A French translation of WebDewey (DDC 22) was published in 2011 (Dewey Decimal Classification News 2011b:2) and translators started working on DDC 23 (Dewey Decimal Classification News 2015:2) that was published later that year, together with a new WebDewey translation (Dewey Decimal Classification News 2016:2). The translation team regularly submits issues in the English text to the editors which leads to exhibits for discussion by EPC members, as observed by the researcher in his capacity as an EPC member.

2.5 German

Heiner-Freiling relates the German translation experience in two articles, one dated shortly after the translation started (2003) and one dated after its completion (2006).

She mentions that the Germans started to use DDC only recently and that this is because classification is a system of knowledge with philosophical, theological and ideological impact, all areas where Germans have always had their own strong views. The German federal government also does not intervene in library and education politics, so, historically, no one classification system has dominated (Heiner-Freiling 2003:1). The DDC project started in 1998 with a feasibility study to introduce it in Germany, Austria and Switzerland (Heiner-Freiling 2003:2). Some problems or deficiencies with DDC were as follows:

- German and European law
- Philosophy and religion (different views of organising)
- No main class for archaeology
- Outdated engineering (620) schedule
- German and Austrian geographic subdivisions in Table 2 (Heiner-Freiling 2003:3)

DDC accepted proposed changes to Table 2 and this acceptance had a positive influence on the German attitude (Heiner-Freiling 2003:4). They formed a consortium of three library networks and three state libraries and received funding from the Deutsche Forschungsgemeinschaft (Heiner-Freiling 2003:5). The

software company Pansoft developed a system based on XML for use in this project. The resulting files were exported into PDF for printing (Heiner-Freiling 2003:6). Most countries use this software for local translations, but now in MARCXML format. Sixty experts (two per discipline) and translators cooperated (Heiner-Freiling 2003:7). They attended to the special needs mentioned in the previous paragraph. The national bibliographies of Germany, Austria and Switzerland started to use DDC from 2001 (Heiner-Freiling 2003:8–9).

After completion of the translation, Heiner-Freiling (2006) once again discusses the project. Some DDC terminology does not have any equivalent in German (Heiner-Freiling 2006:149). This article gives a good overview of the history of DDC in Germany, and of new approaches to classification, such as decomposition of built numbers so that numbers from Tables 2, 5 and 6 could be access points on their own, separate from the schedule number that they follow (Heiner-Freiling 2006:151). Heiner-Freiling also emphasises that the German translation goes beyond the use of DDC for shelving, and can be used for retrieval purposes as well (Heiner-Freiling 2006:156-157). The German translation was published in 2005 in a full edition and not in an abridged edition, as was the usual practice for translations. The German translation also includes revised numbers for German and Austrian history, and is the first outside of the English-language standard edition to be published simultaneously in Web and print versions. The Web service includes MelvilClass, used for classification (German WebDewey) and MelvilSearch, a user interface for retrieval purposes (Heiner-Freiling 2006:159).

These two articles give valuable information on the planning, funding and different ways of using a translation.

A new translation of DDC 23 was started in 2015 (Dewey Decimal Classification News 2015:2) and was expected to be introduced in 2016 (Dewey Decimal Classification News 2016:2).

2.6 Hindi

Guha (1976) mentions the publication of the Hindi translation based on DDC 18 in 1976, the centenary year of DDC. It consists of a single volume and the Hindi title implies that it is of a selective nature (Guha 1976:281). It is thus an adaptation rather than a translation. Guha also indicates that some scope notes, relocation notes and other instructions do not feature in this translation (Guha 1976:282). Guha says that some of the Hindi terms appear to be “unfamiliar and queer” because they are not in general use in commonplace Hindi (Guha 1976:284). The examples are given in Hindi script and the researcher can therefore not reproduce any of them here. Guha’s remark about the Hindi terms is important because it is possible that this could also happen with some South African languages. This short and dated article provides some valuable information to consider.

2.7 Icelandic

Þórarinsdóttir (2014) gives an overview of the history of Icelandic translations. The first Icelandic translation of DDC dates from 1902 and was only an outline in a journal article rather than a separate publication (Þórarinsdóttir 2014:6).

In 1952, an abridged translation with index based on DDC 15 was published (Þórarinsdóttir 2014:1951). Another abridged translation followed in 1970, based on DDC 16 and DDC 17, and this was the first licensed Icelandic edition (Þórarinsdóttir 2014:9).

In 1987 a shorter Icelandic translation based on Abridged Edition 11 and Abridged Edition 12 was published, and the latest translation, a full translation of Abridged Edition 13 of 1997 was published in 2002 (Þórarinsdóttir 2014:9).

From the beginning, adaptations, within the limits of the options in DDC, were made for Icelandic language and literature – for example, Icelandic language is classed at 410 (and linguistics moved to 401). Other adaptations include using 031 for Icelandic encyclopaedias (see also 051, 081) and 191 for Icelandic philosophy. The XX1 numbers are used for North America in the original English. Geographic areas and historical periods for Iceland are also expanded

(Þórarinsdóttir 2014:10). The options are incorporated into the translated text (Green e-mail, 6 February 2017), meaning that the Icelandic translation differs from the English text at all of these numbers. South African translators should consider doing the same if they choose to use options as discussed in Chapter 1 Section 1.1.3.2 Areas for possible expansion and suitable options.

The Icelandic translation shows that DDC can be translated into and used successfully by a very small language (in terms of number of speakers). The mixed translation model may be considered for a future full edition (Þórarinsdóttir 2014:23). This paper therefore provides important information for consideration in the South African environment which is home to a number of “small” languages.

2.8 Indonesian

Sulistyo-Basuki and Mulyani (2008) give an overview of Indonesian efforts in respect of Islamic adaptations and indicate that Indonesia is the largest Islamic nation in the world (Sulistyo-Basuki & Mulyani 2008:89). They mention that, despite developments from DDC 15 to DDC 23, DDC’s rendition of Islam is still inadequate (Sulistyo-Basuki & Mulyani 2008:90-94). They describe how A. Kartawinata proposed an expansion of 297 as early as 1952 (Sulistyo-Basuki & Mulyani 2008:94), but it was not used. *Klasifikasi Pengetahuan Agama Islam Perluasan notasi 297 DDC (Scientific classification on Islamic knowledge notation expansion 297 of DDC)* published in 1958 was the result of the Yogyakarta Islamic Library’s revision (Sulistyo-Basuki & Mulyani 2008:95). They describe several other attempts at adaptations and the confusion surrounding the use of different adaptations by different institutions – something that can also be seen in Van der Walt’s description of the South African situation in Section 2.2 General overview and sources on multiple translations, Section 2.3 Arabic and Section 2.13 Russian.

A contemporary licensed Indonesian translation of Abridged Edition 15 is described in Section 2.2 General overview and sources on multiple translations and is underway (Dewey Decimal Classification News 2016:2).

2.9 Italian

Danesi (1991) indicates that economic constraints, adaptation to a different cultural environment and a different literary warrant have been the biggest problems for the Italian translation (Danesi 1991:55). The first Italian translation was published in 1898, but it was more similar to the Brussels translation of Paul Otlet and Henry La Fontaine, later named UDC (Danesi 1991:56-57). DDC more or less disappeared from the Italian landscape and started to resurface only in the 1950s (Danesi 1991:57). In 1986, the Italian National Bibliography adopted DDC 19 (Danesi 1991:58). It is important that an Italian translation include everything that is useful for Italians, but this can lead to the violation of the basic DDC rule of literary warrant (Danesi 1991:59). Although Italy forms part of Western culture, there are still some significant differences in terms of religion (Roman Catholic versus Protestant bias of DDC), law, administrative structures and so on (Danesi 1991:60). Other difficulties include linguistic issues, where Italian has fewer terms for new technologies such as computer science, software and the like (Danesi 1991:61), cultural or conceptual issues which are accommodated with new or adapted notes and quantitative issues, where more numbers are needed for Italian history, geography and others (Danesi 1991:62–63).

Danesi (1991) gives insight into some of the problems experienced in translations and confirms the importance of local literary warrant when translating DDC.

Fagiolini and Paradisi (2010) give an account of the feasibility study for the new Italian translation of DDC 23. They summarise their findings, indicating the workdays and cost for converting the existing DDC 22 data and the related text (Fagiolini & Paradisi 2010:25). This study gives some hints in terms of the costs involved. However, the Italians worked from an already existing translation towards a new one and, therefore, the information is not relevant to the South African context where no full translation exists – only the translations of the summaries.

According to Crociani, Giunti and Viti (2016) DDC has been used more and more in Italian libraries since 1958, but from 1986 there has been a rapid increase in

usage (Crociani, Giunti & Viti 2016:88-89). The following translations have been produced since 1994:

- DDC 20 (1994)
- DDC 21 (2000)
- DDC 22 (2009) (Cavaleri e-mail, 2 December 2014)

The National Central Library of Florence commissioned a feasibility study for DDC 23 and WebDewey in 2014. Work on the new translation started shortly after that (Crociani, Giunti & Viti 2016:92) and the first Italian translation of WebDewey, based on DDC 23, was launched later in 2014 (Dewey Decimal Classification News 2016:2).

2.10 Korean

Kwasnik and Chun (2004) focus on issues surrounding the Korean Decimal Classification (KDC) which is not a pure translation of DDC because it contains some major adaptations. The first edition was published in 1964, and Batty (1976:304) mentions it as well. The fourteenth edition appeared in 1996 (Kwasnik & Chun 2004: 193). The language schedule is located in 700 and not in 400 as in DDC (Kwasnik & Chun 2004: 194). They also describe DDC as “awkward” for non-Christian and non-western works on religion, social problems, customs and folklore, domestic sciences, architecture and calligraphy within an Eastern or Asian realm (Kwasnik & Chun 2004:194). KDC consists of unique terms – for example, about traditional Korean religion (Kwasnik & Chun 2004:195).

2.11 Norwegian and Swedish

Knutsen (2003) describes the experience of the Norwegian translation of DDC 21. DDC was introduced in Norway in 1898 by Haakon Nyhuus (Knutsen 2003:1). The Norwegian tradition was to translate, abbreviate and slightly adjust every second full edition based on Norwegian literary warrant. She describes how, for DDC 21, they scrutinised editorial rules, the *Guidelines for preparations of Translations and Adaptations, Edition 21*, identified reference sources to use and translated the

glossary during the planning phase which lasted four to five months (Knutsen 2003:2). She also mentions the sequence of translation, starting with tables and then going on to the schedules. A policy of avoiding options was followed. The translation team had problems with the number for the Church of Norway, using 274.81 instead of DDC 21's 284.1481, the word "race" which they changed to "ethnic" and Norwegian history, language and literature numbers (Knutsen 2003:3). Knutsen indicates that the project showed how a small country can improve quality, and even influence the development of DDC, referring to the changes they proposed for history, language and literature which were also accepted (Knutsen 2003:4). The team used XML which was converted to Rich Text Format (RTF) for easy reading and printing by the project participants (Knutsen 2003:4).

Knutsen (2003) gives information which could be valuable in the South African context in terms of the process, sequence and problems about translations of DDC as well as the idea of local literary warrant.

There is a history of DDC usage in Norway dating back more than a century (Mitchell, Rype & Svanberg 2008:98). The National Library of Norway and the Norwegian Directorate for Public Libraries completed an abridged translation of DDC 21 in August 2002. According to Mitchell, Rype and Svanberg, the mixed translation model is feasible in an environment where English enjoys wide use in academic and social discourse (Mitchell, Rype & Svanberg 2008:99). Mixed translations use data already existing in the official language together with data from the English full edition. They describe two approaches: The first is the Norwegian model of "Deweys Desimalklassifikasjon" (DDK) 5, a customised Norwegian abridgment of DDC 21 and translations of DDC 22 summaries (with options for law, an alternative geographic area table and history).

The second approach, that of the Swedes, uses the same official DDC content, with mappings between the Swedish classification system and DDC 21 and the Swedish translation of DDC 22 summaries and full translations of Tables 1 to 6. However, United States geographic areas remain in English and there is a full English Relative Index (Mitchell, Rype & Svanberg 2008:99). They conclude that

this demonstrates the usability of such translations as classifier tools and not for end user applications (Mitchell, Rype & Svanberg 2008:104).

Rype and Svanberg (2009:21) mention the recent switch to DDC in Sweden. This is in contrast to South Africa that has been using DDC for many years. They indicate that numbers further down in the hierarchy of a specific notation that has little or no literary warrant would be of limited value and would thus remain in English. The Norwegians based DDK 5, already mentioned above, on literary warrant in Norwegian libraries (Rype & Svanberg 2009:6), and this connects to Beall's 2003 article on the German and Vietnamese translation in Section 2.2 General overview and sources on multiple translations that mentions the aspect of local literary warrant in connection to local expansions. Contrary to other Scandinavian countries, Sweden did not use DDC, but used their own classification system, "Klassifikationssystem for svenska bibliotek" or SAB (Rype & Svanberg 2009:21). The Swedes used the literary warrant of the Swedish union catalogue as guideline (Rype & Svanberg 2009:27). One of the problems mentioned is that local cataloguers had only limited knowledge of English (Rype & Svanberg 2009:28). In 2009, the Swedish National Library decided to switch to DDC, and immediately decided to translate, using the mixed translation model (Rype & Svanberg 2009:31).

Berg (2012) writes about the Swedish tool, WebDeweySearch, used for searching material with both SAB and DDC. The tool was developed by Pansoft for end users of the Swedish union catalogue, Library Information System (LIBRIS) (Berg 2012:2-8). It makes browsing through DDC schedules and searching DDC and Swedish and English Relative Index terms possible (Berg 2012:11). This tool is similar to MelvilSearch described in Section 2.5 German.

Although Berg (2012) does not give any information on translations, it does challenge the South African environment to decide if such an end user tool could be helpful in a union catalogue. The researcher discusses this further in Chapter 6 Section 6.4.3 End user tools.

Renman (2015) wrote a thesis after DDC was implemented in Sweden. She describes the move of the National Library of Sweden from SAB to DDC and the

effect of this move on library collections and users. She mentions how certain knowledge fields grouped together in SAB are now spread over various fields. The change was positive in that it ensured the integration of Swedish libraries into the international context.

The information about this thesis is based on the English summary. It was written soon after Sweden adopted and translated DDC and therefore it could be important for future studies in South Africa on the effect of South African translations on libraries.

All the Norwegian and Swedish articles provide useful information on the mixed translation model that South African translators can consider, insights about the translation process, sequence of translating the content, issues with translations as well as the use of local literary warrant.

Work began on a new full Web-only Norwegian translation in 2011 (Dewey Decimal Classification News 2011b:3) and this was launched in October 2015 (Dewey Decimal Classification News 2016:2).

Work on a full Swedish translation began in 2010 and the first version was launched in January 2011 (Dewey Decimal Classification News 2011b:3).

2.12 Persian

Soltani (1996) describes Persian translations of DDC with some references to Arabic translations. He emphasises that classification systems should, however, not be disrupted to bring out local needs because this can complicate international bibliographic control (Soltani 1996:13) and this supports the view of the researcher that a translation should not change the inherent structure of DDC. Soltani (1996) refers to the option where 810 – for example, can be used for the literature of a local language instead of American literature, and 820 can then be used for American literature. DDC 23 actually uses Afrikaans as its example. This type of DDC option is also described in Section 2.7 Icelandic. Even though the examples of Icelandic refer to other DDC numbers, the principle remains the same. Soltani (1996:14) mentions that the other DDC option of adding a letter or another symbol,

resulting – for example in 8A0 (for Arabic), is better. This option could be used for South African literatures, but this remains the choice of individual institutions. South African translators can however decide to incorporate this option in the translations. The option permits shorter numbers and places the South African literatures together before 810. Soltani (1996:14) indicates that most countries expand certain sections in a translation, referring to history, literature, religion and so on. He further mentions that the Persian translation of 1994, based on Abridged Edition 12, kept the original's typography, indentation and English introduction, unlike the Arabic translation of 1984 which did not. In the Persian translation, English was not substituted for Persian (thus 820 and 8F0) and Christianity was not substituted for Islam (Soltani 1996:15).

Soltani's article (1996) gives valuable insight into how to retain the integrity of DDC in a translation, even with expansions and options.

2.13 Russian

Delougaz (1947) discusses Soviet translations of DDC which she names adaptations. She indicates that Russia is the only country where DDC is the official classification system (Delougaz 1947:148). The problems with DDC range from philosophical (issues with the way it represents human knowledge), practical (for example the classification of Russian language under "other" languages) and ideological (capitalist orientation, especially in 335) (Delougaz 1947:149).

She discusses two translations. The approach of N. V. Rusinov was not much different from DDC, with minor changes in philosophy, religion and social science. He also used UDC, for elaboration. Z. Ambartsumian, a Russian scholar, criticised this adaptation as being anti-communist (Delougaz 1947:150).

L. N. Tropovskii's adaptation contained more adaptations (Delougaz 1947:150) and he had ideological problems with all the classes, but did not want to change the structure of the main classes immediately. He used 200 for antireligious literature (Delougaz 1947:151) and used letters of the alphabet with DDC notations to create notations that differed from DDC.

The titles of both translations were Russian, so they were also translations. This article is dated and, apart from indicating the ideological issue, does not present any useful information about translations. However, it does indicate that adaptations are not the ideal solution to eliminating bias because everybody simply wants to create their own adaptations instead of keeping true to the inherent structure of DDC.

A Russian translation of DDC 21 was published in 2000, by the Russian National Public Library for Science and Technology (Dewey translations 2017).

2.14 Spanish

Clarke (1944) wrote a thesis on a partial expansion of the 980 division. These expansions were also translated into Spanish. However, she merely presented the translation and did not expand on the process or problems about the translation. The thesis is outdated and the researcher mentions it only because it is one of only two theses related to DDC translations.

The first Spanish translation of DDC, a translation of the tables, was published as early as 1897 (Rovira 1977:76). Paul Otlet and Henry La Fontaine's French translation that became UDC was adopted by some Spanish libraries soon after it was published. The first complete translation was published in 1955, based on DDC 15 (Rovira 1977:77). Adaptations were made for Latin American countries. A Spanish translation of the British edition for school libraries of 1961, mentioned in Chapter 1 Section 1.1.3.3 Early South African translations, was published in 1967. In 1973, work began on a new Spanish translation (Rovira 1977:83).

The translation mentioned by Rovira in the previous paragraph was published in 1980 (Rojas L. 1997:78) and differed from the almost literal French translation of DDC 18 to make provision for the special needs of Latin American countries. During the 1990s, work on a new Spanish translation which was a mix of editions 20 and 21, started (Rojas L. 1997:78-81) and it was published in 2000. Rojas L. mentions the following:

- Avoidance of direct translations and passive voice (common in the English edition)
- Avoidance of “Colombianisms” to make it more acceptable to all Spanish users
- For English terms with no Spanish equivalent – for example, “computer science”, a Spanish definition rather than translation was given
- English proper names not translated or partially translated – for example, Black River translated as Rio Black
- Translation of Relative Index terms was time-consuming and completed only after translation of schedules (Rojas L. 1997:81–82)

A Spanish translation of Abridged Edition 14 is also complete (Dewey translations 2017) and a Spanish translation of DDC 22 is expected to be published late 2016 (Dewey Decimal Classification News 2016:2).

2.15 Vietnamese

The earliest licensed Vietnamese translation was mentioned by Downing (1976:800) and Batty (1976:304).

Vu Van Son and Robinson (2006) describe the Vietnamese translation project. According to them, the objectives were the promotion of standardised bibliographic control, open access and resource sharing. It was a licensed translation and was based on Abridged Edition 14 (Vu Van Son & Robinson 2006:3). It was necessary to promote the adoption of DDC before the translation proceeded. Problems that were incurred included complex diacritics, inconsistent treatment of foreign names, difficulty in translating esoteric and technical terms, and unfamiliarity with American English. These problems could also occur in the South African context.

Discussions on a new full translation in Vietnamese started in 2010 and the agreement was signed in August 2010 (Dewey Decimal Classification News 2011a:2). It was completed in 2013 (Dewey Decimal Classification News 2015:2).

2.16 Chapter summary

The summary contains further critical analysis based on the questions in Section 2.1 Introduction, starting with the main themes within the literature.

2.16.1 Main themes in the literature

- The earliest literature did not contain much about translations, but focused more on expansions and adaptations as solutions for shortcomings
- (Unlicensed) expansion and adaptations create confusion and do not make interoperability easier; hence, these are not seen as feasible options by the researcher
- Most of the critics against DDC did not give much thought to the inherent structure of DDC or the idea of literary warrant
- The idea of local literary warrant which emerged in the seventies, became important in connection with expansions in licensed translations
- The idea of internationalisation, referring to adapting the content of DDC to deal with the concerns of its international users, started to emerge with DDC 16, but became even more important by the time that DDC 18 was published
- Most of the earlier research only mentioned translations of DDC, but did not discuss technical issues surrounding translations
- Most of the research on internationalisation and translations were produced by DDC editors, EPC members and people who were part of translation teams

2.16.2 Challenges relating to translations

Heiner-Freiling (2003, 2006), Knutsen (2003) and Rype and Svanberg (2009) give overviews of the translation process and Knutsen (2003) further provides a sequence of translating the content of DDC.

Heiner-Freiling (2003, 2006), Guha (1976), Danesi (1991), Kwasnik and Chun (2004), Rype and Svanberg (2009), Rojas L. (1997) and Vu Van Son and

Robinson (2006) all discuss problems in the translation process in terms of untranslatable words, rare terms, cultural differences and the like that could be valuable to South African translators.

Soltani's (1996) description of a Persian translation shows how the integrity of DDC numbers can remain intact in a translation with expansions.

The feasibility study of the Italians (Fagiolini & Paradisi 2010) gives some indication of additional costs, but it is not of value in the South African context because it does not describe a completely new translation project.

2.16.3 How translations deal with shortcomings in DDC

Beall (2003) indicates how the German, Vietnamese and Indonesian translations expand local history, geographic areas, ethnic groups and language groups based on local literary warrant. Soltani (1996) mentions expansions in terms of history, religion and so on in the Persian translation.

Mitchell and Vizine-Goetz (2009) also indicate the use of local literary warrant in translations in general and mention interoperability with the English edition using authorised expansions.

Heiner-Freiling (2003, 2006), Þórarinsdóttir (2014), Danesi (1991), Knutsen (2003) and Rype and Svanberg (2009) discuss the use of local literary warrant in their articles.

Þórarinsdóttir (2014) further indicates how the Icelandic translation uses options given at some classes – for example, language and literature for local emphasis, but 410 and 810 are alternatives for one language only and cannot be used for Afrikaans (439.36; 839.36) and the nine South African languages now at 496 and 896. However, Soltani (1996) indicates how the other option of DDC – substitution of the middle number with a letter – can be useful, that is 8F0 for Persian, leaving 810 for American English literature intact. This option could be valuable in a South African context as indicated in Section 2.12 Persian. As indicated earlier in

Chapter 1 Section 1.1.2.5.1 Options in DDC, options can sometimes cause confusion.

2.16.4 Multiple language translations

The existing research presents only the following:

- Translations of one language of a country where that language is the only official or main language – for example, Vietnamese, Icelandic, Norwegian
- Translations of one language used in more than one country – for example Arabic, French, German, and Spanish

There is no existing literature on translations of multiple languages within one country, but the Scandinavian articles give direction for South African languages with the mixed translation model.

2.16.5 Directions relating to feasibility

The German study described by Heiner-Freiling (2003) focused on the feasibility of implementing DDC as classification system in Germany, while the Norwegian and Swedish feasibility study focused on the use of mixed translations in libraries. The Italian feasibility study was the only one dealing with costs, but as already mentioned in Sections 2.9 Italian and 2.16.2 Challenges relating to translations, the circumstances were different from those in South Africa.

Other articles give information that may be useful in supporting feasibility in the South African context and Table 2.1 summarises the information.

Table 2.1: Useful information relating to feasibility

Author	Information
Beall (2012)	Indonesian translation of Abridged Edition 15 with expansions from DDC 23 in some classes and tables
Heiner-Freiling (2003)	Financial sponsorship for translation project
Pórarinsdóttir (2014), Rype and Svanberg (2009)	Mixed translation model

The information about the translation process, the sequence of translating content, problems with translations, feasibility, what to translate, sponsorship and the mixed translation model are helpful in the process of working towards South African translations, as indicated in Chapter 5 Section 5.3.3 Scenario 3.

This chapter gave an overview of research on translations of DDC. There is limited research on translations and only a few articles and papers provide useful information.

Chapter 3 Research methodology discusses the research design to deal with the issue of feasibility of translations in the South African context.

Chapter 3 Research methodology

3.1 Introduction

This chapter presents a discussion of the research methodology. It specifies the research objectives, derived from the research questions because the questions and objectives dictate the research design. The broader research type, Section 3.3 Research type, paradigm, Section 3.4 Research philosophy and approach, Section 3.5 Research approach precede the discussion of the design in Section 3.6 Research design. The qualitative and quantitative data used in the research conclude the discussion on research methodology.

3.2 Research objectives

The research objectives link with the research design and are summarised as follows:

- To investigate to what extent existing literature on translations contributes to the discussion about feasibility of DDC translations in the multilingual context of South Africa
- To investigate how Google Translate performs with the translation of chosen parts of Abridged Edition 15
- To investigate to what extent Google Translate can be used for translations of DDC
- To describe the possible simplification of the translation process
- To investigate a possible translation model

3.3 Research type

This section describes the type of research. There are two types of research: applied or practical versus basic (pure) or theoretical research (Roll-Hansen 2009:2).

Applied research includes an empirical approach in the form of questionnaires, surveys, interviews, observations and discussion groups and provides solutions to practical problems (Connaway & Powell 2010:2; Roll-Hansen 2009:4) as opposed to the non-empirical approach of basic research. Basic research leads to the discovery of new ideas or phenomena and aims to improve general understanding (Roll-Hansen 2009:5). Basic research expands knowledge about processes and establishes universal principles relating to such processes. The findings are significant to society in general (Saunders, Lewis & Thornhill 2012:11).

The research at hand is a combination of applied and basic research because it uses empirical evidence to ascertain the feasibility of South African translations of DDC which is a practical problem in the sense that the high cost and complex process of translation could hinder the accomplishment of multilingual South African translations. It also expands knowledge of and leads to universal principles about the process of DDC translations, especially multilingual translations.

3.4 Research philosophy

Ngulube (2015:127) and Saunders, Lewis and Thornhill (2012:128) indicate that philosophical assumptions about knowledge form the essence of research. Philosophical views include positivism, realism, interpretivism and pragmatism (Saunders, Lewis & Thornhill 2012:128).

This research is based on pragmatism which uses both positivist and interpretivist worldviews (Ngulube 2015:128). Saunders, Lewis and Thornhill (2012:130) mention that the research question plays a central role in pragmatism. There is no need to debate what makes up truth and reality. Saunders, Lewis and Thornhill (2012) summarise the ontological, epistemological and axiological aspects of pragmatism and indicate among other things that both observable phenomena and subjective meanings can provide acceptable knowledge and that data collection techniques of pragmatic research often tend to be mixed or multiple methods oriented (Saunders, Lewis & Thornhill 2012:140).

The current research not only uses mixed methods of analysis, as discussed in Section 3.6.3 Research methods, but also consists of objective quantitative data derived from the evaluation of Google translations, specifically statistical evidence. It further encompasses a more subjective, qualitative interpretation of the literature and other documents, with the main research question at the core: **To what extent are South African translations feasible?**

3.5 Research approach

Research in general can follow an inductive, deductive, retroductive or abductive approach (Blaikie 2003:33-34).

According to Bhattacharjee (2012:3), inductive research implies making inferences from data. The researcher develops a theory or theories after data collection to identify patterns (Saunders, Lewis & Thornhill 2012:48). Data samples tend to be small (Saunders, Lewis & Thornhill 2012:146). Data lead to or cause theory.

The current research is inductive. There were no predefined theories about the feasibility of South African translations or any other translations. The researcher examined the data of the Google translations of Abridged Edition 15 and data from existing literature as well as other documents, and this led to the theory that the Google translations can assist in the feasibility of South African translations of DDC. Hence the data led to the theory.

Saunders, Lewis and Thornhill (2012:145) suggest that a deductive approach accentuates collection of quantitative data and an inductive approach accentuates collection of qualitative data. The type of data, however, cannot dictate the reasoning of the researcher. If no theory exists before data collection, the reasoning is still inductive, even if the researcher collects quantitative data. A combination of qualitative and quantitative data also does not suggest a combination of research approaches because the presence or absence of theory defines the approach (Saunders, Lewis & Thornhill 2012:148).

3.6 Research design

This section describes research design in terms of research purpose, research strategy and research methods.

According to Mouton (2001:56), the research design focuses on the outcome, the kind of study and the results of the study, as opposed to the method which refers to the research process and the use of certain tools. Yin (2009:26) mentions that the research design indicates the logical sequence, that is, how the data connects to the research question(s); hence, the plan to get from questions to solutions. Kothari (2004:31) describes the research design as the conceptual structure for conducting research, including data collection, measurement and analysis. Bless, Higson-Smith and Sithole (2013:130) confirm that the research design equals the overall plan. It is thus the blueprint or recipe for conducting research.

3.6.1 Research purpose

The purpose of research can be exploratory, descriptive or explanatory (Bhattacharjee 2012:6; Saunders, Lewis & Thornhill 2012:170–172). It is also possible to combine one or more of the aforementioned options.

Exploratory research flows from uncertainty or little existing research and lacks formal structure (Van Wyk 2012:8). It indicates problems or opportunities (Denscombe 2014:57) or new areas of research, thus the initial ideas of a phenomenon (Bhattacharjee 2012:6). It is flexible and adjustable (Saunders, Lewis & Thornhill 2012:171).

The research at hand is exploratory because it refers to a new area of research, the translation of DDC within the multilingual South African context. There is not enough existing research, as indicated in Chapter 2 Section 2.1 Introduction. The current research explores problems with translations as well as opportunities in terms of possible uses. It provides only preliminary indications of feasibility and a proposed workflow and model for South African translations.

3.6.2 Research strategy

According to Denscombe (2014:3) the research strategy forms part of the overall design and includes surveys, case studies, experiments, ethnography, mixed method research and so on. Denscombe (2014:3) calls it the strategy or plan of action to reach a specific goal.

A mixed method approach can include mixed research designs and/or mixed strategies and/or mixed modes of analysis (Bhattacharjee 2012:104; Denscombe 2014:153). Although Saunders, Lewis and Thornhill (2012:164–169) use the terminology in a different way, distinguishing between multi methods, mixed methods and mixed models in terms of data collection techniques, it more or less corresponds to Denscombe's (2014) view of mixed method strategy. Mixed methods use measurements and descriptions in a complementary way (Bless, Higson-Smith & Sithole 2013:56).

Mixed methods partner with the pragmatic philosophy (Denscombe 2014:158), as described in Section 3.4 Research philosophy. A mixed method strategy further includes a variety of perspectives (Denscombe 2014:146) and is practical and problem driven (Denscombe 2014:160).

The researcher used the mixed method strategy, consisting of two methods of data collection described in Section 3.6.3 Research methods and two techniques of data analysis, namely qualitative described in Section 3.7 Qualitative data segment and quantitative described in Section 3.8 Quantitative data segment.

3.6.3 Research methods

Saunders, Lewis and Thornhill (2012:164) describe the way the researcher chooses to combine quantitative and qualitative techniques as the research choice. Research methods or data collection tools and data analysis techniques go hand in hand. This section describes the choice of methods which naturally leads to the description of the data analysis techniques associated with each method.

Denscombe (2014:163) indicates that a research method provides the tools for collecting empirical data. He further mentions that certain methods pair with certain research strategies, but the researcher still has the option of choosing the best method (Denscombe 2014:163).

The researcher chose the following methods of data collection:

- Critical analysis of the literature (reported on in Chapter 2 Critical analysis of reported research) supplemented with additional document analysis (reported on in Chapter 1 Introduction) which provided qualitative data
- Technology-based research, as described by Connaway and Powell (2010). This type of research method grew increasingly popular with the development of Web 2.0 technologies (Connaway & Powell 2010:85). The researcher used Google Translate, a web-based machine translation tool to translate parts of Abridged Edition 15. Section 3.8.2.2 Design of the translation evaluation instrument describes the design, development, and subsequent quantitative data analysis

These methods led to two techniques of data analysis. The researcher presents the data analysis according to the research objectives as described in Section 3.2 Research objectives, in two sections, namely Section 3.7 Qualitative data segment for objectives one, three, four and five and Section 3.8 Quantitative data segment for objective two.

3.7 Qualitative data segment

Qualitative research offers greater latitude in choosing topics of interest (Yin 2016:6). Qualitative data presents a holistic view (Denscombe 2014:246) and it uses words and/or visual images (Denscombe 2014:276). The researcher's opinion plays a large role in the description; hence, qualitative data has an element of subjectivity. Creswell (2014:206) confirms the descriptive nature of qualitative data.

3.7.1 Data collection and analysis

Sandelowski, Voils and Knafl (2001:52) describe the conversion of experience to data as the first step when describing data. After that the researcher decides on the second conversion, whether the data will be best described in a quantitative and/or qualitative way.

According to Denscombe (2014:246), collection and analysis of qualitative data occur simultaneously and continuously.

The researcher got the first set of qualitative data from the literature review to establish how existing literature on translations can contribute to the feasibility of DDC translations in the multilingual context of South Africa, the first objective in Section 3.2 Research objectives. The researcher analysed the data during the process of reading which confirms the simultaneous action of collection and analysis.

The second set of qualitative data was acquired from further document analysis, to supplement the literature review. This data combined the following:

- The preliminary findings on the high cost of the translation software presented in Chapter 1 Section 1.1.2.5.4 Pansoft translation software
- The scrutiny of DDC editions to establish the number of South African entries presented in Chapter 1 Section 1.1.3.1 South African-related entries in DDC
- The investigation into the existing South African translations presented in Chapter 1 Section 1.1.3.3 Early South African translations and Chapter 1 Section 1.1.3.4 Later South African translations

The data lead to the discussion in Chapter 5 on a proposed workflow and model for South African translations, thus connecting to objectives three, four and five in Section 3.2 Research objectives.

3.7.2 Trustworthiness of the data

Bless, Higson-Smith and Sithole (2013:236–237) indicate that qualitative data should be trustworthy. They mention four ways to measure trustworthiness:

- Credibility, similar to internal validity, refers to the design and methodology choices. The findings must be truthful and logical
- Dependability refers to the thoroughness of the description of the strategy, sampling and so on
- Transferability refers to how the data relate to other settings or contexts
- Confirmability refers to the possibility for other researchers to achieve similar findings

The qualitative data were acquired from the critical review of the literature and supplementary document analysis as described in Section 3.6.3 Research methods. The documents are all either official DDC documents or e-mails from authoritative sources, namely DDC editors, translators and a partner from the Pansoft translation software company. The authenticity, representativeness, clear meaning and credibility of these documents are confirmed by their official and authoritative status, as Denscombe (2014:230) indicates. The design, including research strategy and methodology, has been described thoroughly. The findings could easily be transferred to other contexts, such as translations of DDC in other multilingual countries.

3.8 Quantitative data segment

Denscombe (2014:245) and Bhattacharjee (2012:35) indicate that quantitative data uses numbers expressed in specific variables or elements subject to change. The researcher is detached from the data, resulting in objectivity. Quantitative data are also more formal and controlled, emanating from using a specific plan (Kothari 2004:53) which includes a formal instrument or instruments. The data can be acquired from a variety of methods (Denscombe 2014:250). In the case of this research, it was the result of the evaluation of the Google translations of Abridged Edition 15. Before the description of the sample and data collection, it is necessary

to indicate that the researcher initially had two different plans to get empirical data to yield an answer to the question of the feasibility of South African translations.

3.8.1 Preliminary efforts to use DDC summaries and planning of the translation evaluation tool

The initial viewpoint was to test the use of the existing South African translations of the DDC summaries. The first attempt consisted of connecting a database of the summaries to WebDewey. The database would be accessed by South African users in the number building process, based on OCLC library codes. The idea was that users would build a number and add the number with keywords in their native language to the database. The plan was presented to OCLC and accepted by them, but it did not transpire for reasons unknown by the researcher and never communicated to him.

The second attempt consisted of creating a web-based mobile application. The same principle of adding built numbers and keywords in South African languages formed the foundation. A small number of people registered on the application, but nobody attempted to add built numbers and/or keywords.

The researcher resolved to eliminate the human factor and decided to use Google translations of Abridged Edition 15, to ascertain how these translations can contribute to the feasibility of South African translations.

The sample used to achieve the second objective in Section 3.2 Research objectives is discussed in Section 3.8.2.1 Sample size and procedure.

3.8.2 Data collection and analysis

The source of the quantitative data was the technology based method and, specifically, the use of Google Translate. Human translators always translate DDC and this will also be the case for South African translators. However, in Chapter 1 Section 1.2 Problem statement the researcher mentioned that this is an expensive endeavour, partly because it involves many translators. Hence, this research

focused on a technological intervention to find out if such an intervention can assist human translators. The researcher designed an evaluation tool for these translations, as described in Section 3.8.2.2 Design of the translation evaluation instrument.

3.8.2.1 Sample size and procedure

The source for translation and evaluation was Abridged Edition 15. The researcher chose this edition for two reasons:

- Abridged Edition 15 is smaller and can be translated much faster than the full edition. For this reason, many translators start with an abridged edition – for example, the Vietnamese translation of 2006 as described in Chapter 2 Section 2.15 Vietnamese
- The text making up Abridged Edition 15 could easily be copied into Google Translate, or the PDFs of each main class could be translated as whole documents. The process of translating the text is described in more detail in Section 3.8.2.2.3 Development of the translation evaluation instrument. It is more difficult or, more accurately, more time-consuming, to translate text from WebDewey. At any specific entry, the text must be copied and then pasted into Google Translate. However, the copy and paste action must be repeated for each level in the hierarchy. For example, at 968, the first screen at 968 has to be copied and translated. After that, 968.0001–968.0008 has to be copied and translated, and the process has to be continued for each of its sub-levels, where applicable. The next entry in the same level of hierarchy as 968.0001–968.0008 which is 968.0009 then has to be copied and translated, and thereafter any of its sub-levels, where applicable. This must be done for all levels and sub-levels of 968 separately

This section describes the choice of each division and/or section in every main class. Main classes, divisions and sections were described in Chapter 1 Section 1.1.2 General overview of DDC. A section that is a separate subject was used as a separate unit, meaning that it was rated on a separate sheet in Excel with its own statistical information – for example, 001, 002 and 003 respectively. Some

subjects were spread over more than one section – for example, 004–006 and 020, 025, 027 and 028. These sections were used together as one unit on one Excel sheet, as indicated in Chapter 4 Section 4.2.4 Computer science; computer programming, programs, data; special computer methods (004-006) and Chapter 4 Section 4.2.6 Library and information sciences (020, 025, 027 and 028) respectively. From 100 to 200 and 400 to 900, each division that was used formed a unit and, in 300, the sections used within each division respectively formed a unit. DDC headings with subject names not capitalised were used “as is”.

The evaluation consists of 31.1% of the sections or third summaries, spread throughout all ten main classes, together with two of the four tables. The original idea was to use at least 333 sections (33.3% or one-third), but because many sections are unassigned, the researcher reached 31.1% with the sections of the 900 main class. At that point, there was already a clear indication of what the results of possible remaining sections would be and any attempt to add another 32 sections to reach the one-third target would have resulted in bias against sections that would yield unfavourable results. The sample also reached data saturation (Bless, Higson-Smith & Sithole 2013:164) at the 700 main class, that is the sample did not yield significantly different results anymore, but sections from 800 and 900 were added to cover all main classes.

Although the researcher attempted random sampling, this was not always possible for reasons indicated in each separate section from Section 3.8.2.1.1 000 main class to Section 3.8.2.1.11 Tables. This means that the sample is a combination of probability and non-probability sampling. The researcher chose random samples, but the sample size and process was at the same time convenient sampling (Bhattacharjee 2012:69) because sections with repetitive content and some sections with many proper names (for example 220–229) were not used.

3.8.2.1.1 000 main class

The 000 main class is the most general class. Therefore, the researcher attempted to use as many divisions or sections as possible, but there were many unassigned sections – for example, 007–009, 013, 017, 018 and 040–049. There

were also many divisions with repetitive content – for example, 030–039, 050–059, 070–079 and 080–089. At these divisions, only the first few sections were used, except for 070–079, where only 070 was evaluated. The 0X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 020.

Table 3.1 summarises the units used.

Table 3.1: Units of the 000 main class

Unit used	Described in Chapter 4
001	Section 4.2.1
002	Section 4.2.2
003	Section 4.2.3
004–006	Section 4.2.4
010, 011	Section 4.2.5
020, 025, 027, 028	Section 4.2.6
030–033	Section 4.2.7
050, 051	Section 4.2.8
060, 069	Section 4.2.9
070	Section 4.2.10
080, 081	Section 4.2.11
090–099	Section 4.2.12

3.8.2.1.2 100 main class

The 100 main class includes divisions and sections of philosophy, parapsychology, occultism, and psychology. The researcher chose the 100–109 division because it contains a summary for the whole main class, one randomly chosen division, 140–149 (Specific philosophical schools and viewpoints) and 150–159 (Psychology). There were some unassigned sections: 104 in 100–109

and 151, 157 and 159, so four additional sections were randomly chosen, namely 170–173. The 1X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 150.

Table 3.2 summarises the units used.

Table 3.2: Units of the 100 main class

Unit used	Described in Chapter 4
100–109	Section 4.3.1
140–149	Section 4.3.2
150–159	Section 4.3.3
170–173	Section 4.3.4

3.8.2.1.3 200 main class

The 200 main class consists of divisions of religion. The researcher chose the 200–209 division because it contains a summary for the whole main class and two randomly chosen divisions; 230–239 (Christianity) and 290–299 (Other religions). There were some unassigned sections: 237 in 230–239 and 291 and 298 in 290–299, so three additional sections were randomly chosen, namely 260–262. The 2X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 290.

Table 3.3 (page 77) summarises the units used.

Table 3.3: Units of the 200 main class

Unit used	Described in Chapter 4
200–209	Section 4.4.1
230–239	Section 4.4.2
260–262	Section 4.4.3
290–299	Section 4.4.4

3.8.2.1.4 300 main class

The 300 main class consists of divisions of social sciences with multiple subject matter. The researcher decided to choose a few sections from each division in this main class, both because of its miscellaneous nature and to establish if the results of a few sections from one division would be different from those of whole divisions as chosen in the 100 and 200 main classes. The 310–319 division was not used because there were three unassigned sections and it had the same repetitive nature of 030, 050 and 080 of the 000 main class. The researcher chose the 300–309 division (with two unassigned sections, 308 and 309) because it contains a summary for the whole main class. The rest of the sections from each division were chosen randomly, but taking unassigned sections within divisions into account. The 3X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 320.

Table 3.4 (page 78) summarises the units used.

Table 3.4: Units of the 300 main class

Unit used	Described in Chapter 4
300–309	Section 4.5.1
320, 323	Section 4.5.2
330, 336	Section 4.5.3
340–342	Section 4.5.4
350–353	Section 4.5.5
360, 361, 364	Section 4.5.6
370, 371, 378	Section 4.5.7
380, 381, 384	Section 4.5.8
390–392	Section 4.5.9

3.8.2.1.5 400 main class

The 400 main class consists of linguistics and a variety of languages. The researcher chose the 400–409 division because it contains a summary for the whole main class, and 410–419 (Linguistics). Divisions 420 and 440 to 480 were disregarded because they are repetitive in nature and would have yielded similar results. This complicated random choice of sections. Division 490–499 (Other languages) was chosen because it contains lists of languages, similar to groups of people in 305.8. There were some unassigned sections: 404 in 400–410 and 416 in 410–419, so two additional sections were randomly chosen, namely 430 and 439. The 4X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 410.

Table 3.5 (page 79) summarises the units used.

Table 3.5: Units of the 400 main class

Unit used	Described in Chapter 4
400–409	Section 4.6.1
410–419	Section 4.6.2
430, 439	Section 4.6.3
490–499	Section 4.6.4

3.8.2.1.6 500 main class

The 500 main class consists of divisions of the sciences. The researcher chose the 500–509 division because it contains a summary for the whole main class and two randomly chosen divisions; 510–519 (Mathematics), and 530–539 (Physics). There were some unassigned sections: 504 in 500–510 and 517 in 510–519, so two additional sections were randomly chosen, namely 570–571. The 5X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 570.

Table 3.6 summarises the units used.

Table 3.6: Units of the 500 main class

Unit used	Described in Chapter 4
500–509	Section 4.7.1
510–519	Section 4.7.2
530–539	Section 4.7.3
570–571	Section 4.7.4

3.8.2.1.7 600 main class

The 600 main class consists of divisions of technology or applied sciences. The researcher chose the 600–609 division because it contains a summary for the

whole main class, and two randomly chosen divisions; 630–639 (Agriculture and related technologies) and 640–649 (Home and family management). The chosen divisions do not have unassigned sections. The 6X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 630.

Table 3.7 summarises the units used.

Table 3.7: Units of the 600 main class

Unit used	Described in Chapter 4
600–609	Section 4.8.1
630–639	Section 4.8.2
640–649	Section 4.8.3

3.8.2.1.8 700 main class

The 700 main class consists of divisions of the arts. The researcher chose the 700–709 division because it contains a summary for the whole main class, and three randomly chosen divisions; 720–729 (Architecture), 760–769 (Printmaking and prints) and 770–779 (Photography, computer art, cinematography, videography). There were some unassigned sections: 762 and 768 in 760–769 and 775 in 770–779. The 7X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 770.

Table 3.8 (page 81) summarises the units used.

Table 3.8: Units of the 700 main class

Unit used	Described in Chapter 4
700–709	Section 4.9.1
720–729	Section 4.9.2
760–769	Section 4.9.3
770–779	Section 4.9.4

3.8.2.1.9 800 main class

The 800 main class consists of various literatures arranged according to language. The researcher chose the 800–809 division because it contains a summary for the whole main class, and one other division, 890–899 (Literatures of other specific languages and language families) with lists of languages similar to 490. There was one unassigned section: 804 in 800–809. The 8X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 890.

Divisions 810 to 880 were disregarded because they are repetitive in nature and would have yielded similar results. This complicated random choice of sections.

Table 3.9 summarises the units used.

Table 3.9: Units of the 800 main class

Unit used	Described in Chapter 4
800–809	Section 4.10.1
890–899	Section 4.10.2

3.8.2.1.10 900 main class

The 900 main class consists of history, geography, and auxiliary disciplines. The researcher chose the 900–909 division because it contains a summary for the

whole main class, and three randomly chosen divisions; 910–919 (Geography and travel), 920–929 (Biography, genealogy, insignia) and 960–969 (History of Africa). These divisions did not have unassigned sections. The 9X0 section of divisions was always used because it usually includes a summary of the whole division – for example, 960.

Divisions 930 to 950 and 970 to 990 were disregarded because they are repetitive in nature and would have yielded similar results. This complicated random choice of sections. The history divisions also contain many numerical dates. In 960–968, sub-units with numerical dates and country names where the Afrikaans equals the English were not evaluated.

Table 3.10 summarises the units used.

Table 3.10: Units of the 900 main class

Unit used	Described in Chapter 4
900–909	Section 4.11.1
910–919	Section 4.11.2
920–929	Section 4.11.3
960–969	Section 4.11.4

3.8.2.1.11 Tables

Abridged Edition 15 consists of four tables and does not include Tables 5 and 6 of WebDewey. The researcher chose Table 1 because it is the most important table, and the notations can be added to almost any schedule number. Table 4 was chosen randomly from the remaining three.

Table 3.11 (page 83) summarises the units used.

Table 3.11: Units of the Tables

Unit used	Described in Chapter 4
Table 1	Section 4.12.1
Table 4	Section 4.12.2

3.8.2.2 Design of the translation evaluation instrument

This section describes the evaluation of the Afrikaans Google translations of Abridged Edition 15 in terms of the process that was followed to produce these translations with the sample described in Section 3.8.2.1 Sample size and procedure. It is followed by an introductory description of machine translation and details about the development of the rating scale used in conjunction with the evaluation instrument.

3.8.2.2.1 Preparation of the sample for evaluation

Abridged Edition 15 manifests itself on WebDewey in the form of PDFs for each main class. It is possible to import a file into Google Translate for translation, but then it is not possible to add the original English as a column in Microsoft Excel. Hence, the researcher chose to proceed as follows:

Step 1: A specific part representing a unit of evaluation, as discussed in Section 3.8.2.1 Sample size and procedure, were copied from the PDF of that class and pasted into Google Translate for a translation, as seen in Figure 3.1 (page 84).

030 General encyclopedic works	x	030 Algemene ensiklopediese werke
Class here almanacs with general information; books of miscellaneous, curious, unusual facts; encyclopedia yearbooks		Klas hier almanakke met algemene inligting; boeke van diverse, nuuskierig, ongewone feite; ensiklopedie Jaarboeke
.9 History, geographic treatment, biography		0,9 Geskiedenis, geografiese behandeling, biografie
Class history, geographic treatment, biography of encyclopedic works in specific languages and language families in 031–039		Klas geskiedenis, geografiese behandeling, biografie van ensiklopediese werke in spesifieke tale en taalfamilies in 031-039
> 031–039 General encyclopedic works in specific languages and language families		> 031-039 Algemene ensiklopediese werke in spesifieke tale en taalfamilies
By language in which originally written		Deur taal waarin oorspronklik geskryf
Class here specific encyclopedias and books of miscellaneous facts, works about them		Klas hier spesifieke ensiklopedieë en boeke van diverse feite, werk oor hulle
Class comprehensive works, encyclopedic works originally written in two or more languages or language families in which no language or language family is predominant in 030. Class		Klas omvattende werke, ensiklopediese werke oorspronklik geskryf in twee of meer tale of taalfamilies waarin geen taal of taalfamilie is oorheersend in 030. Klas ensiklopediese werke wat oorspronklik in

Figure 3.1: Example of Google Translate page

Step 2: The English and translated texts were then separately copied from Google Translate into a Microsoft Word file, and added into Microsoft Excel in two separate columns. The texts could not be copied directly from Google Translate into Excel because it did not display per column in a usable way. By placing the text into Microsoft Word as an intermediate step, the two parts of the texts could be pasted into two separate columns in Microsoft Excel, as seen in Figure 3.2 (page 85). The evaluation was done per sub-unit which matches paragraphs in the original text of Abridged Edition 15. Annexure A Examples of evaluation contains two examples of the evaluation. The editors of DDC do not allow the use of more or longer examples in a document such as this thesis because, according to them, such examples might then be used for classification purposes (Green e-mail, 13 September 2016). The rating scale and the labels are discussed in Section 3.8.2.2.3 Development of the translation evaluation instrument.

Books printed before 1501	Boeke gedruk voordat 1501
	FTEE
See also 011 for bibliographies of incunabula	Sien ook 011 vir bibliografieë van incunabelen
	PTME
094 Printed books	094 gedrukte boeke
	FTME
Including early printed books; special editions	Insluitend vroeë gedrukte boeke; spesiale uitgawes
	FTME
For block books, see 092; for incunabula, see 093	Vir blok boeke, sien 092; vir incunabelen sien 093
	PTME
095 Books notable for bindings	095 Books opvallend vir bindings
	PTEE

Figure 3.2: Example of Excel sheet of evaluated unit

Step 3: Each unit of evaluation occupied a sheet in Excel, resulting in 52 Excel sheets. At the end of each unit, the statistics, in terms of the scores for each label and percentages out of the total were presented, as seen in Figure 3.3 (page 86).

Including books of unusual shapes, miniature editions	Insluitend boeke van ongewone vorms, miniatuur uitgawes
	FTME
Number of NTME	1
% of total	4.545454545
Number of PTEE	4
% of total	18.18181818
Number of PTME	5
% of total	22.72727273
Number of FTEE	2
% of total	9.090909091
Number of FTME	10
% of total	45.45454545
Total measures	22
Test of total measures	22
Blank spaces	22

Figure 3.3: Example of statistics of an evaluated unit

3.8.2.2.2 Evaluation of machine translation systems

Before describing the development of the instrument, it is necessary to give a brief overview on machine translation (MT) and, specifically, Google Translate because Google Translate is an MT tool. The researcher chose Google Translate because it is an easily accessible, free, web-based tool. Google Translate has a reputation for producing precarious translations, but this provided another reason to use it, to establish if this negative reputation is exaggerated.

Van Rensburg, Snyman and Lotz (2012:514-515) discuss the differences between MT and Computer assisted translation (CAT) which developed at a later stage than the former. In short, an MT system automatically translates from one natural language to another, without human intervention, whereas a CAT system uses human translators to control the process, with the machine only assisting. Google Translate, as an MT system, does however provide for editing, thus human intervention in translations after a translation is possible. Van Rensburg, Snyman and Lotz (2012) then further describe the translation of six text types in the higher education milieu with Google Translate, comparing these with two human translations. The translations were then evaluated by humans using Sonia

Colina's tool of attaching weights to each text type as well as criteria such as correct idiomatic usage of the target language, correct spelling and adherence to grammar (Van Rensburg, Snyman & Lotz 2012:517-518).

Ghasemi and Hashemian (2016:13) used Google Translate for Persian translations. They used Keshavarz's error analysis framework to evaluate the translations, according to linguistic categories such as lexicosemantic, tense, preposition, word order and the like (Ghasemi & Hashemian 2016:15). They indicate that Google Translate scored better with translations of European languages (Ghasemi & Hashemian 2016:14).

Aiken and Balan (2011) indicate that Google Translate is probably one of the most used MT systems because it is free and has more language pair combinations than most other systems. Language pair refers to the combination of source and target language. They translated 50 passages using all 51 language-pairs and evaluated the translations with the automatic Bilingual evaluation understudy (BLEU) technique. BLEU compares machine translations with a reference human translation, with scores from 0 to 100, taking into account both the number of words which are the same and word order (Aiken & Balan 2011).

Koehn and Monz used non-web-based MT systems to translate from English into French, German and Spanish and vice versa. They used a combination of BLEU and a manual evaluation system (Koehn & Monz 2006:102). The manual evaluation measured adequacy with scores ranging from five (all meaning) to one (none) and frequency with scores also ranging from five (flawless English) to one (incomprehensible) (Koehn & Monz 2006:106).

Evaluations of MT systems, such as Google Translate usually involves either automatic evaluation using BLEU or human evaluation based on very specific or broad linguistic categories or a combination of both automatic and human evaluations. Studies about the evaluation of MT systems also tend to compare translations into more than one language or compare more than one MT system to each other. The researcher decided to create a new scale for the following reasons:

- The goal of the evaluation is very specific, to answer the question: How does Google Translate perform in translating parts of Abridged Edition 15? This will be done by first answering the following sub questions:
 - How comprehensive are Google translations?
 - What is the degree of editorial effort?
- The translations are not measured based on linguistic principles because the researcher is a librarian, not a language expert
- The translations are from English to Afrikaans, hence there is only one target language
- The Google translations are not compared to a human translation
- The researcher used only one MT system
- The text is technical library science terminology and repetitive in nature

3.8.2.2.3 Development of the translation evaluation instrument

Biddix (2009) defines an instrument as the device that a researcher uses for measurement and further mentions the category of researcher-completed instruments. The translation evaluation instrument discussed in this section is a researcher-completed instrument and it expresses ratings verbally not numerically.

It would have been possible to answer the two sub questions in Section 3.8.2.2.2 Evaluation of machine translation systems using two separate scales, but for the sake of simplicity, the researcher decided to develop one scale to answer both questions according to the criteria of comprehensiveness and degree of effort necessary to edit the Google translations.

Three labels indicate the comprehensiveness of the translations (how much was translated, thus absence or presence of English words). Even though the first label seems to differ from the second (no translation versus partial translation), in effect it still represents the opposite of a full translation, just as the second label does. To keep the statistics and the resulting tables and charts simple and not “to drown the reader” (Denscombe 2014:263), these two form one part of the facet of comprehensiveness as the opposite of full translations:

- No translation indicated by NT/ Partial translation indicated by PT
- Full translation indicated by FT

Two labels indicate the degree of editorial effort needed to correct translations:

- Extensive editorial effort indicated by EE
- Minimum editorial effort indicated by ME

The researcher combined the labels which led to five categories. Blaikie (2003:22) refers to this as categorical measurement:

- No translation necessitating minimum editing (NTME):

The sub-units in this category consisted of single word or single concept DDC headings – for example, “Miscellany”, “Commercial miscellany” and “World Wide Web” not translated by Google Translate. Even though the headings in this category were not translated, they would need only a quick dictionary check. The majority were repetitive which means that one check would enable editors to correct many errors at once. Google Translate translated four single word headings into Dutch. These four words fit NTME’s criteria of single words necessitating minimum editing, but not the criteria of “not translated”. However, they were “not translated” into Afrikaans.

- Partial translation necessitating extensive editing (PTEE):

The sub-units in this category consisted of DDC headings – that is, numbers with captions and notes – for example, “Class here” notes with the following problems:

- one word not translated by Google Translate, with major word order errors and/or wrong translation in context
- more than one word not translated by Google Translate, without major word order errors or wrong translation in context

- more than one word not translated by Google Translate, with major word order errors and/or wrong translation in context

- Partial translation necessitating minimum editing (PTME):

The sub-units in this category consisted of DDC headings – that is, numbers with captions and notes – for example, “Class here” notes with the following problems:

- one word not translated by Google Translate, with or without minor word order errors
- the same word repeatedly not translated by Google Translate with or without minor word order errors

- Full translation necessitating extensive editing (FTEE):

The sub-units in this category consisted of fully translated DDC headings and notes (no English words) with major word order errors or incorrect translation in context of one or several words. In Chapter 4, the phrase “incomplete translation” is used to indicate where one word was missing from a phrase or sentence. In most cases, this category consisted of a mixture of the possibilities

- Full translation necessitating minimum editing (FTME):

The sub-units in this category consisted of fully translated DDC headings and notes (no English words) with minor word order errors (switching of two words), the absence of the second negative (“nie”) of Afrikaans, unnecessary use of articles, absence of an article, absence of genitive (“van”), singular instead of plural or vice versa. In some cases, it consisted of only one of the possibilities, while in other cases it consisted of a mixture of the possibilities

In the examples in Chapter 4 Data analysis, presentation and interpretation, it often happens that the same word occurs as an example in more than one category. “Miscellany” can be a single word heading, not translated and thus

labelled NTME, or it can appear in a note which also contains other untranslated words and/or word order errors and thus be labelled PTEE. It can also appear in a note as the only word not translated, and thus be labelled PTME. This can happen in one evaluation unit or in different evaluation units. Similar examples are “Table”, “Serial” and “Standard”.

Categorical measurements can be divided into two further levels, namely nominal and ordinal (Blaikie 2003:22; Denscombe 2014:250–251). The categories of this research are ordinal or ranked (Saunders, Lewis & Thornhill 2012:475) which means that there is a clear ordered relationship between them (Denscombe 2014:251). Level of comprehensiveness increases from not translated to fully translated and editorial effort decreases from extensive editing needed to minimum editing needed. Blaikie (2003:52) indicates that, if the frequency with which each sub-unit is represented in each category is counted, it is possible to get numbers which can be manipulated further.

To indicate how the data was further manipulated, it is necessary to summarise the categories for each question that the evaluation aimed to answer. Table 3.12 indicates level of comprehensiveness.

Table 3.12: Labels for level of comprehensiveness

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	3	6	8	28
%	2.2	6.5	13	17.4	60.9

The table connects the three categories of no or partial translation (first three columns from the left) in contrast to the two full translation categories (last two columns). The first two letters, in bold type, indicate the level of comprehensiveness. All sub-units with the first two letters NT and PT were counted together and, similarly, all sub-units with first two letters FT were counted together. The totals were transferred to a master statistics sheet in Excel which

generated percentages from the totals for each category. A high percentage of labels with FT indicated a comprehensive translation.

Table 3.13 indicates the degree of editorial effort.

Table 3.13: Values measuring the degree of editorial effort

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	3	8	1	6	28
%	6.5	17.4	2.2	13	60.9

The table contrasts the two categories of extensive editorial effort (first two columns from the left) to the three minimum editorial effort categories (last three columns). The last two letters, in bold type, indicate the level of editorial effort. All sub-units with the first two letters EE were counted together and, similarly, all sub-units with the last two letters ME were counted together. A high percentage of labels with ME indicated a minimum or low degree of editorial effort.

The totals were transferred to a master statistics sheet in Excel which generated percentages from the totals for each category. Manually generated tables containing the totals and percentages for each category (as in Table 3.13) and Excel charts, generated by the insert chart function, represent the findings in Chapter 4 Data analysis, presentation and interpretation. Chapter 4 indicates the level of comprehensiveness and minimum degree of editorial effort of each unit, expressed as a percentage, followed by a summary for each main class and resulting in a final average for both measurements.

The researcher based the indication of how well Google Translate performed on the two-thirds rule (rounded to one digit after the decimal point thus 66.7%), a political principle (Merriam-Webster 2016, sv “two-thirds rule”). However, this principle gives a good indication of a clear majority and thus can be transferred to

this study to indicate the extent to which Google Translate translated and how little effort would be needed by human translators to edit these translations.

3.8.2.3 Validity and reliability of the data

According to Denscombe (2014:271), the credibility of quantitative data depends on the ability of the research methods to yield accurate and consistent data. Biddix (2009) and Kothari (2004:73) state that validity means that the data measured what it was supposed to measure.

The sub-sections focus on the following types of validity: external, internal, content, criterion, construct, and face validity.

3.8.2.3.1 External validity

According to Denscombe (2014:272), external validity has to do with the extent to which the findings can be generalised to other examples. This means that the data should not be unique. The rating instrument can be used to get the same data (level of comprehensiveness and degree of editorial effort) from Google translations of DDC for other South African languages because the categories have been described sufficiently, yet at the same time broadly enough (for example, “word order errors”).

3.8.2.3.2 Internal validity

Internal validity refers to the principle of cause and effect between independent and dependent variables within the research (Bhattacharjee 2012:35). This is not relevant here because there is no indication of cause and effect in this evaluation.

3.8.2.3.3 Content validity

Content validity implies that the measures should accurately assess what the researcher wanted to know, in other words, does it answer the research question/s according to Biddix (2009) or measure all parts (Bless, Higson-Smith & Sithole

2013:230–231). Kothari (2004:74) also mentions that it implies that the sample is representative and covers the topic sufficiently.

Two questions had to be answered by the evaluation as indicated in Section 3.8.2.2.2 Evaluation of machine translation systems. The instrument managed to answer both questions, by indicating the level of comprehensiveness and degree of editorial effort needed for the translations.

3.8.2.3.4 Criterion validity

Criterion validity refers to comparison to another measure or benchmark that is known to be valid (Bless, Higson-Smith & Sithole 2013:231). There is however no other similar measure; hence, this type of validity is not appropriate to the current research.

3.8.2.3.5 Construct validity

Construct validity refers to how well the scores of an instrument reflect the desired construct – for example, a social skills measure cannot be used to measure depression (Bless, Higson-Smith & Sithole 2013:233). The evaluation instrument reflects both elements in the construct of how well Google Translate translated, that is comprehensiveness and degree of editorial effort.

3.8.2.3.6 Face validity

Face validity refers to how the measure appears to participants (Bless, Higson-Smith & Sithole 2013:234). This is not relevant here because there were no participants in the evaluation.

3.8.2.3.7 Reliability

Reliability means that the instrument should be neutral and consistent so that it can be used in other instances (Denscombe 2014:271) and Biddix (2009) indicates the consistency of the instrument as well. The neutrality of the instrument used in this research emanates from its broad description of possible errors and

its consistent nature is confirmed by the clear description of each category. If the information in Tables 3.12 (page 91) to 3.13 (page 92) is used exactly as given with other language translations, findings should be consistent with this study, but this can be confirmed only when such evaluations are done.

Denscombe (2014:271) also mentions the split-half approach to test reliability, where the dataset is split in half and compared. The full dataset of the 52 evaluated units is given in Annexure B Master statistics of evaluation. The totals of each half are reflected in Table 3.14.

Table 3.14: Split-half approach result

	NTME's	%	PTEE's	%	PTME's	%	FTEE's	%	FTME's	%
1st half	51	2.4	222	7.5	287	9.6	615	18.9	1759	61.6
2nd half	64	2	225	8.1	425	14.6	470	15.3	1737	60

Categories NTME (2.4% and 2%), PTEE (7.5% and 8.1%) and FTME (61.6% and 60%) show very good consistency. However, despite the fact that Denscombe (2014:271) does not indicate exactly what a good level of consistency should be, it seems reasonable to conclude that the consistency of the categories PTME and FTEE is also good.

3.9 Ethical considerations

This research uses machine-generated data, namely Google translations of parts of Abridged Edition 15. The researcher received permission from OCLC to reproduce parts of the Pansoft translation software and WebDewey. This study adheres to the research ethics policy of UNISA (University of South Africa 2013).

3.10 Chapter summary

This chapter presented the research methodology by linking the research objectives to the research design. Information on type of research and research philosophy preceded the discussion of the design which indicated a mixed approach. Both the qualitative data, emanating from the document analysis and quantitative data, emanating from the translation evaluation were discussed.

Chapter 4 Data analysis, presentation and interpretation presents the data analysis of the evaluation of Google translations to indicate how it answers the questions of comprehensiveness and editorial effort associated with the translations.

Chapter 4 Data analysis, presentation and interpretation

4.1 Introduction

This chapter presents the findings of the evaluation of the Afrikaans Google translations. The researcher based the findings on the evaluation instrument as set out in Chapter 3 Research methodology.

The analysis discusses each unit within a main class of DDC separately. The rationale for the selection of units and the definition of sub-units is explained in Chapter 3 Section 3.8.2.1 Sample size and procedure. After the analysis of all units within a main class, a summary on comprehensiveness and editorial effort for the specific main class follows, with a summary on comprehensiveness and editorial effort of the whole evaluation which is of all the main classes, at the end of the chapter.

The researcher presents the analysis by giving an overview of the statistics of each separate evaluation category (NTME, PTEE, PTME, FTEE and FTME), accompanied by a short discussion of the types of translation issues – for example, parts or words not translated by Google Translate, word order errors and so on. DDC's American spelling convention remains intact in these examples.

Chapter 4 attempts to answer the following research questions:

- How does Google Translate perform in translating parts of Abridged Edition 15?
- How comprehensive are Google translations?
- What is the degree of editorial effort?
- For the measurement of comprehensiveness, categories labeled NTME, PTEE and PTME are grouped together because they consisted of partial or un-translated parts, as opposed to categories FTEE and FTME which are fully translated

- For the measurement of editorial effort, PTEE and FTEE are grouped together because these two categories need extensive editing, as opposed to NTME, PTME and FTME that need minimum or no editorial effort

The details about the evaluation instrument and categories with their labels were discussed in Chapter 3 Section 3.8.2.2.3 Development of the translation evaluation instrument. The researcher used DDC headings for unit, table and figure names (and specifically XX0 section headings for units with more than one section, because the XX0 section introduces a division). He retained the capitalisation or not “as is”. All percentages are rounded to one digit after the decimal point. Zero valued percentages are not displayed in figures.

4.2 The 000 main class

This main class has a miscellaneous nature and, therefore, as many divisions and sections in divisions as possible were used. The researcher did not use sections that consisted of caption only, and sections with repetitive content, with the exception of 030–033, 050, 051, 080 and 081. These sections were used to indicate how their repetitive nature yields similar results. Division 040–049 is unassigned.

4.2.1 Knowledge (001)

This section starts with the heading and summary for the main class: Computer science, information, general works (000).

Figure 4.1 (page 99) gives an overview of each evaluation category, measured as a percentage.

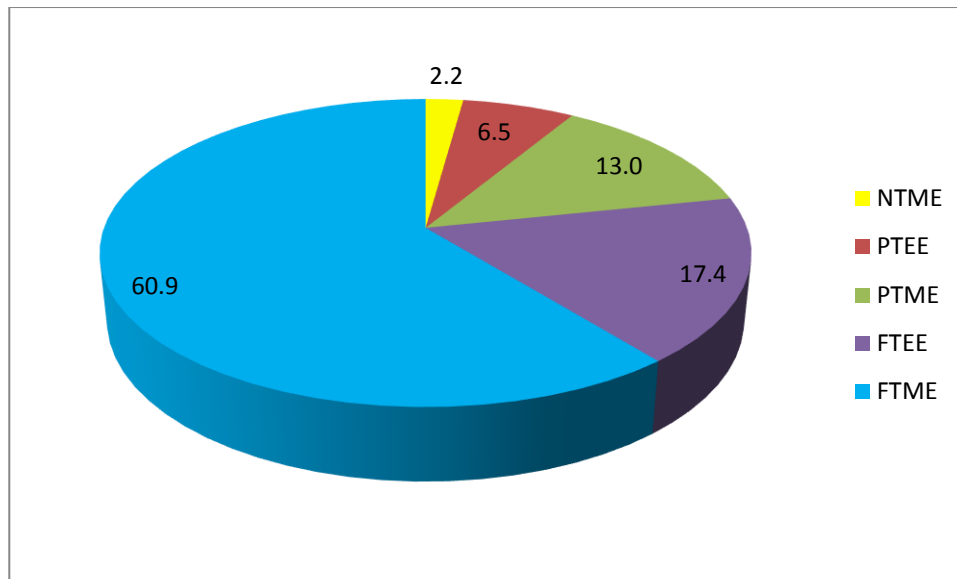


Figure 4.1: Knowledge (001)

Sub-units labelled NTME made up 2.2% of the total. An example of a word not translated by Google Translate is:

- *Mysteries*

Sub-units labelled PTEE made up 6.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|---|
| <ul style="list-style-type: none"> • <i>Including well-established phenomena for which explanations are controversial; the end of the world; deceptions and hoaxes; errors, delusions, superstitions</i> | <ul style="list-style-type: none"> • <i>Insluitend goed gevestigde verskynsel waarvoor verduidelikings is omstrede, die einde van die wêreld; misleidings en hoaxes; foute, delusies, bygelowe</i> |
|---|---|

Sub-units labelled PTME made up 13% of the total. Examples of words not translated by Google Translate are:

- *Scholarship en leer*
- *Nonastronomical*

Sub-units labelled FTEE made up 17.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *See Manual at 500 vs. 001*
- *Sien Handleiding **by 500 001 teen***
- *Reported phenomena not explained, not fully verified*
- ***Berig verskynsels nie verduidelik nie, nie ten volle geverifieer***
- *Class here human-alien encounters*
- *Klas hier **menslike-uitheemse ontmoetings***

Sub-units labelled FTME made up 60.9% of the total. Sometimes there were minor errors such as the absence of the double negative (*nie ... nie*) in Afrikaans, or word order that needed little editing.

Table 4.1 and Figure 4.2 (page 101) indicate Level of comprehensiveness.

Table 4.1: Level of comprehensiveness in 001

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	3	6	8	28
%	2.2	6.5	13	17.4	60.9

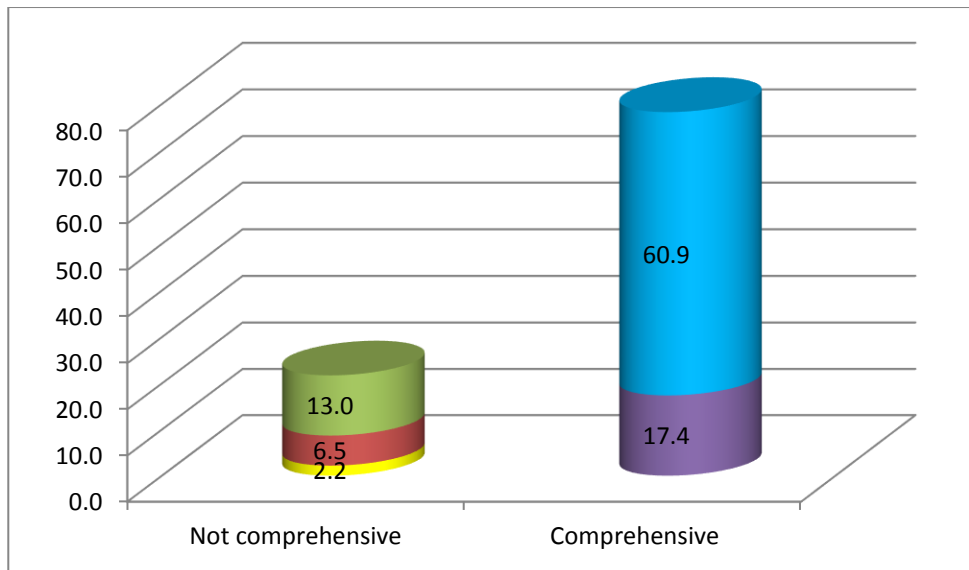


Figure 4.2: Level of comprehensiveness in 001

Google Translate translated 78.3% or 36 out of 46 sub-units.

Table 4.2 and Figure 4.3 (page 102) indicate Degree of editorial effort.

Table 4.2: Degree of editorial effort in 001

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	3	8	1	6	28
%	6.5	17.4	2.2	13	60.9

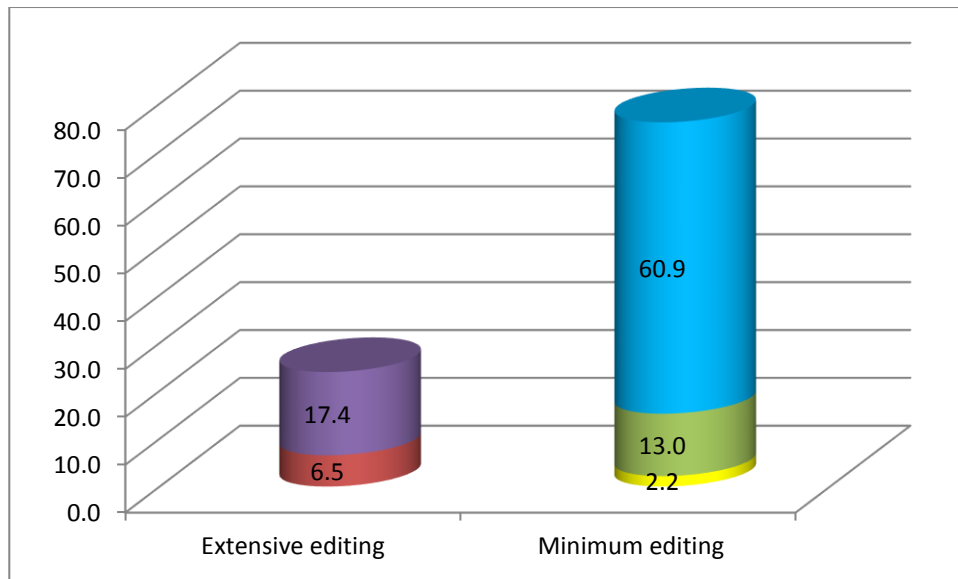


Figure 4.3: Degree of editorial effort in 001

76.1% (35 out of 46 sub-units) of the translation needed little or no editing.

4.2.2 The book (002)

This section starts with the heading “The book”.

Figure 4.4 (page 103) gives an overview of each evaluation category, measured as a percentage.

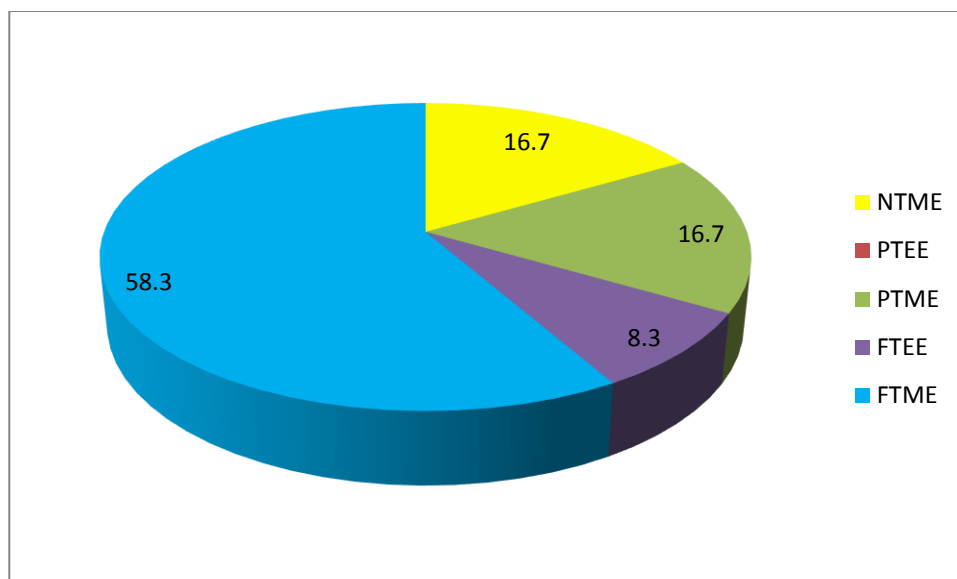


Figure 4.4: The book (002)

Sub-units labelled NTME made up 16.7% of the total. Examples of words not translated by Google Translate are:

- *Miscellany*
- *Commercial miscellany*

Sub-units labelled PTEE made up 0% of the total.

Sub-units labelled PTME made up 16.7% of the total. An example of a word not translated by Google Translate is:

- *Chapbooks*

Sub-units labelled FTEE made up 8.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>Do not use for trade catalogs and directories; class in 010</i> | <ul style="list-style-type: none"> • <i>Moet nie gebruik vir die handel katalogusse en dopgehou; klas 010</i> |
|--|---|

Sub-units labelled FTME made up 58.3% of the total. There were minor errors, such as the absence of the double negative (“nie ... nie”) in Afrikaans, or word order that needed little editing, such as “werke op”, instead of “werke oor”.

Table 4.3 and Figure 4.5 indicate Level of comprehensiveness.

Table 4.3: Level of comprehensiveness in 002

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	0	2	1	7
%	16.7	0	16.7	8.3	58.3

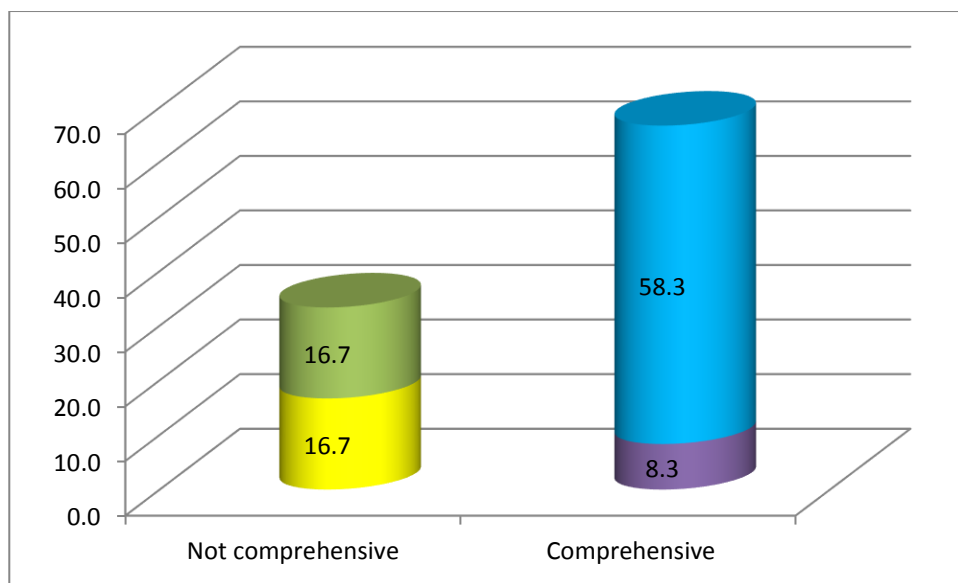


Figure 4.5: Level of comprehensiveness in 002

Google Translate translated 66.6% or 8 out of 12 sub-units.

Table 4.4 (page 105) and Figure 4.6 (page 105) indicate Degree of editorial effort.

Table 4.4: Degree of editorial effort in 002

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	0	1	2	2	7
%	0	8.3	16.7	16.7	58.3

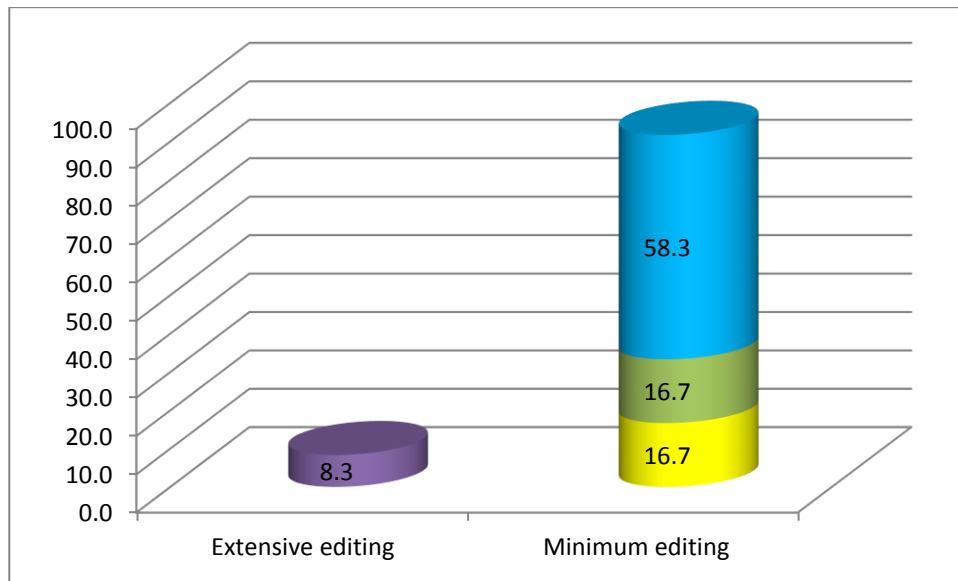


Figure 4.6: Degree of editorial effort in 002

91.7% (11 out of 12 sub-units) of the translation needed little or no editing.

4.2.3 Systems (003)

This section has the heading “Systems”.

Figure 4.7 (page 106) gives an overview of each evaluation category, measured as a percentage.

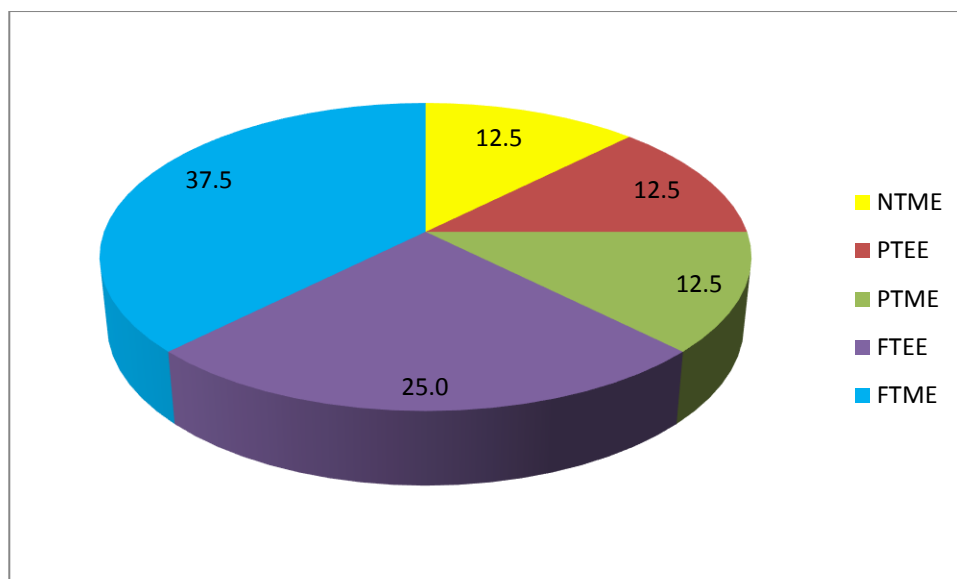


Figure 4.7: Systems (003)

Sub-units labelled NTME made up 12.5% of the total. An example of a word not translated by Google Translate is:

- *Systems*

Sub-units labelled PTEE made up 12.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *For artificial intelligence, see 006.3; for forecasting by parapsychological and occult means, see 133.3*
- *Vir kunsmatige intelligensie, sien 006.3; vir die voorspelling deur para **psychologies** en okkulte **beteken**, sien 133.3*

Sub-units labelled PTME made up 12.5% of the total. An example of a word not translated by Google Translate is:

- *Kind*

Sub-units labelled FTEE made up 25% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *stability of systems; kinds of*
- *stabiliteit van stelsels; soorte*

systems; systems distinguished in relation to time

stelsels; stelsels onderskei in verhouding tot tyd

- *for mathematical programming not applied to real-world systems*
- *vir wiskundige programmering nie toegepas op **werklikheidsgetroue** stelsels*

Sub-units labelled FTME made up 37.5% of the total.

Table 4.5 and Figure 4.8 indicate Level of comprehensiveness.

Table 4.5: Level of comprehensiveness in 003

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	1	1	2	3
%	12.5	12.5	12.5	25	37.5

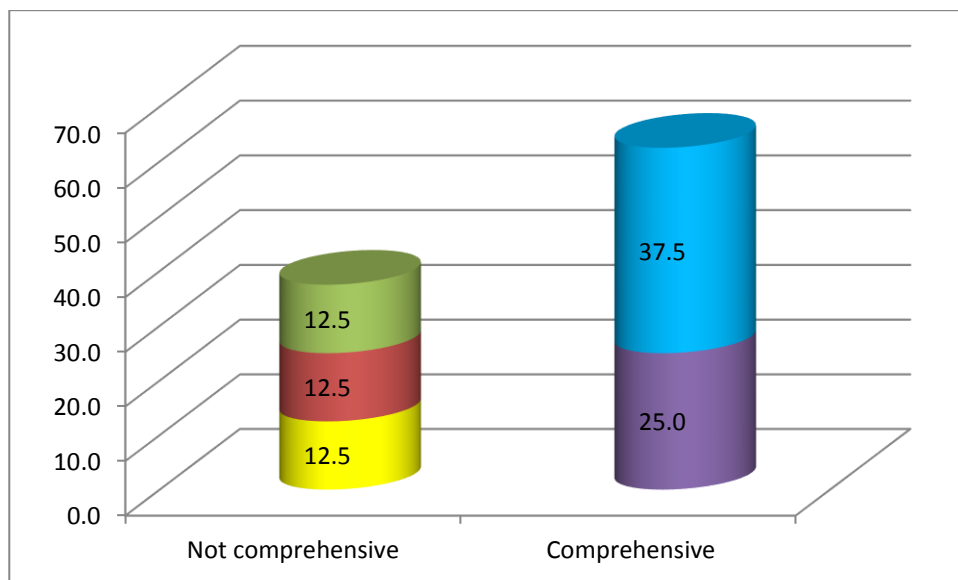


Figure 4.8: Level of comprehensiveness in 003

Google Translate translated 62.5% or 5 out of 8 sub-units.

Table 4.6 (page 108) and Figure 4.9 (page 108) indicate Degree of editorial effort.

Table 4.6: Degree of editorial effort in 003

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	1	2	1	1	3
%	12.5	25	12.5	12.5	37.5

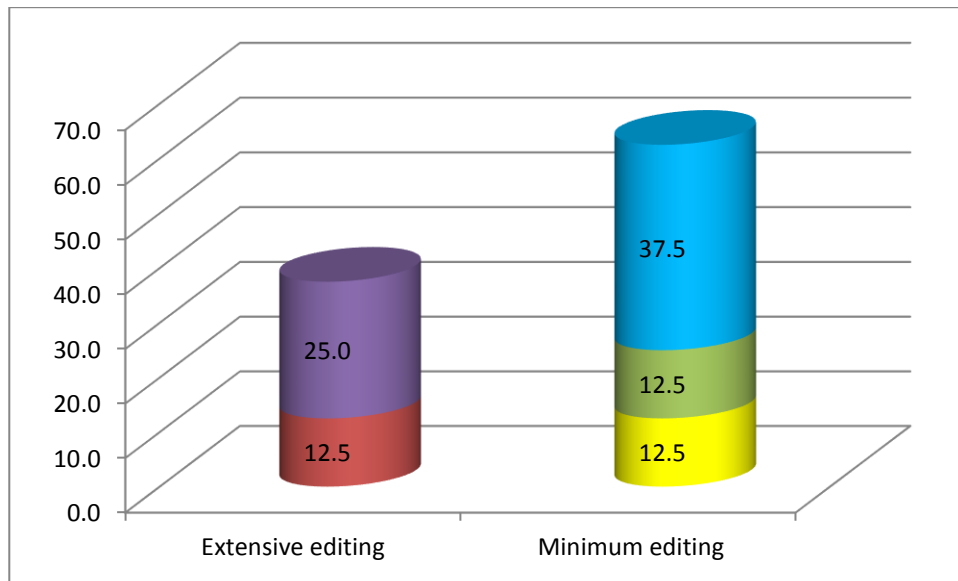


Figure 4.9: Degree of editorial effort in 003

62.5% (5 out of 8 sub-units) of the translation needed little or no editing.

4.2.4 Computer science; computer programming, programs, data; special computer methods (004–006)

These three sections have the heading Computer science; computer programming, programs, data; special computer methods and together form the most extensive part of 000–009.

Figure 4.10 (page 109) gives an overview of each evaluation category, measured as a percentage.

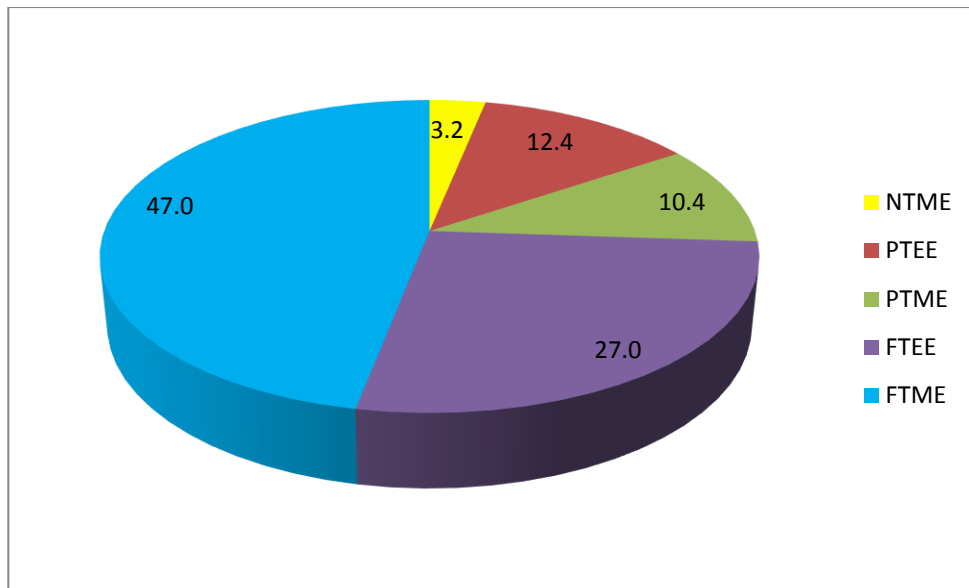


Figure 4.10: Computer science; computer programming, programs, data; special computer methods (004–006)

Sub-units labelled NTME made up 3.2% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 12.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>For Internet, World Wide Web as information systems, see 025.042. For a specific aspect of cloud computing, see the aspect, e.g., grid computing</i> | <ul style="list-style-type: none"> • <i>Vir Internet, World Wide Web as inligting stelsels, sien 025.042. Vir 'n spesifieke aspek van die wolk rekenaar, sien die aspek, bv grid</i> |
| <ul style="list-style-type: none"> • <i>Including processing modes; computers, processors, computer systems distinguished by their processing modes; centralized</i> | <ul style="list-style-type: none"> • <i>Insluitend verwerking vorme; rekenaars, verwerkers, rekenaar stelsels onderskei deur hul verwerking vorme; gesentraliseerde verwerking;</i> |

processing; nonelectronic data processing

- *Class comprehensive works on programming for midrange and personal computers in 005.26*

nonelectronic data verwerking

- *Klas omvattende werke op **ontwikkeling** vir midrange en persoonlike rekenaars in 005.26*

Sub-units labelled PTME made up 10.4% of the total. Examples of words not translated by Google Translate are:

- *Midrange*
- *Handheld*
- *Storage*
- *Interface*
- *Standard*

Sub-units labelled FTEE made up 27% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|--|
| • <i>Including analysis of a user's problem preparatory to developing a computer system to solve it</i> | • <i>Insluitend die analise van die probleem voorbereidende tot die ontwikkeling van 'n rekenaarstelsel om dit op te los 'n gebruiker se</i> |
| • <i>Unless other instructions are given, class a subject with aspects in two or more subdivisions of 004–006 in the number coming last</i> | • <i>Tensy ander instruksies gegee word, klas 'n onderwerp met aspekte in twee of meer onderafdelings van 004–006 in die aantal laaste kom</i> |
| • <i>Embedded computer systems relocated to 006.2</i> | • <i>Ingebed rekenaarstelsels verskuif na 006.2</i> |
| • <i>Arrange alphabetically by</i> | • <i>Reël alfabeties volgens naam van</i> |

*name of computer or
processor, e.g., BlackBerry®*

*die rekenaar of verwerker, bv
BlackBerry®*

Sub-units labelled FTME made up 47% of the total. Sometimes there were minor errors such as the absence of the double negative (“nie ... nie”) in Afrikaans.

Table 4.7 and Figure 4.11 indicate Level of comprehensiveness.

Table 4.7: Level of comprehensiveness in 004–006

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	8	31	26	67	117
%	3.2	12.4	10.4	27	47

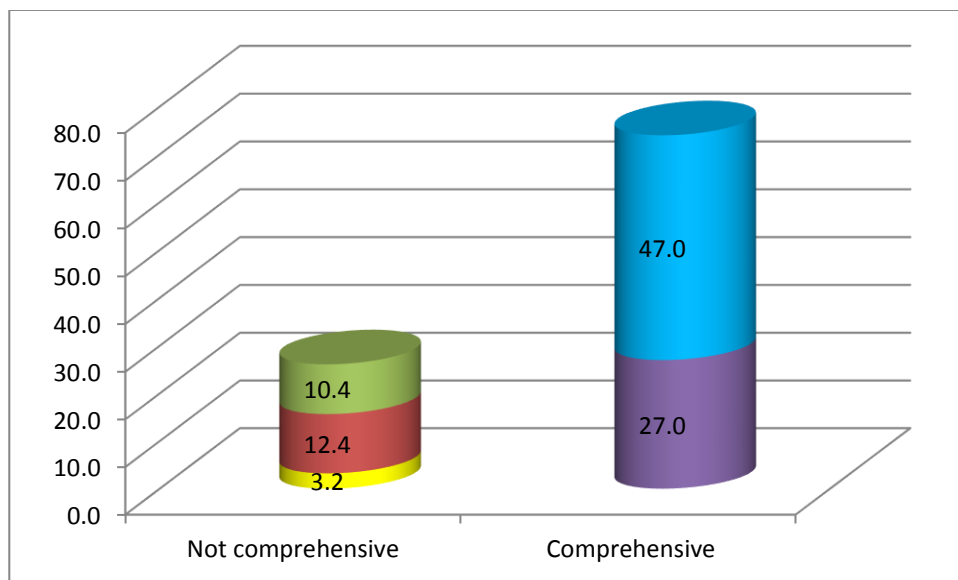


Figure 4.11: Level of comprehensiveness in 004–006

Google Translate translated 74% or 184 out of 249 sub-units.

Table 4.8 (page 112) and Figure 4.12 (page 112) indicate Degree of editorial effort.

Table 4.8: Degree of editorial effort in 004–006

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	31	67	8	26	117
%	12.4	27	3.2	10.4	47

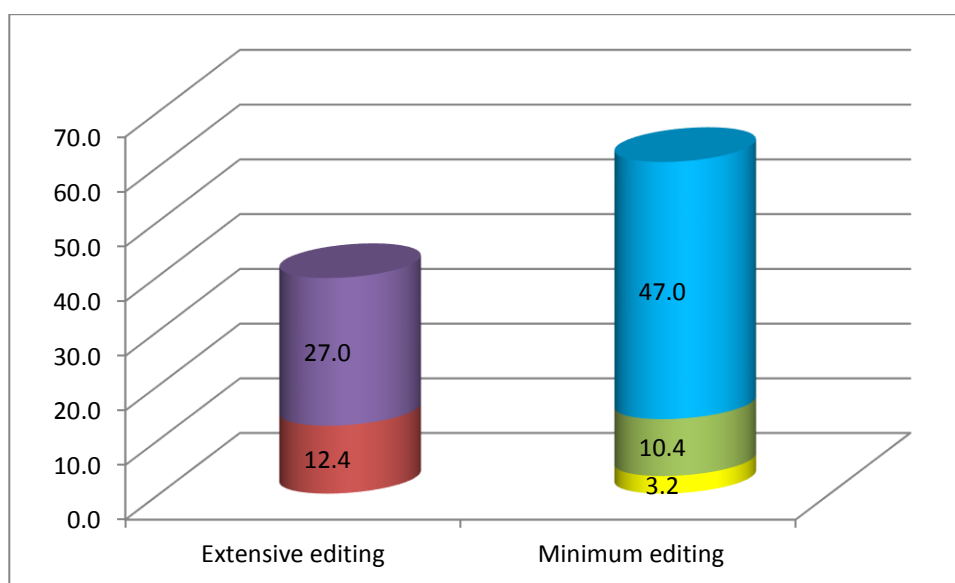


Figure 4.12: Degree of editorial effort in 004–006

60.6% (151 out of 249 sub-units) of the translation needed little or no editing.

The results indicate that computer terminology could be more difficult to translate into Afrikaans than other terminology, hence the editorial effort for 004–006 would be higher than that of 001, 002 and 003.

4.2.5 Bibliographies and catalogs (010 and 011)

The division starts with the heading “010 Bibliography” as the main caption, followed by the summary for 011 to 019. However, 011 Bibliographies and catalogs, was the only section with hierarchical subdivisions for translation. The

other sections consisted of either just the caption, or the caption with a short scope note, or are unassigned. The researcher used 010 and 011 as one unit.

Figure 4.13 gives an overview of each evaluation category, measured as a percentage.

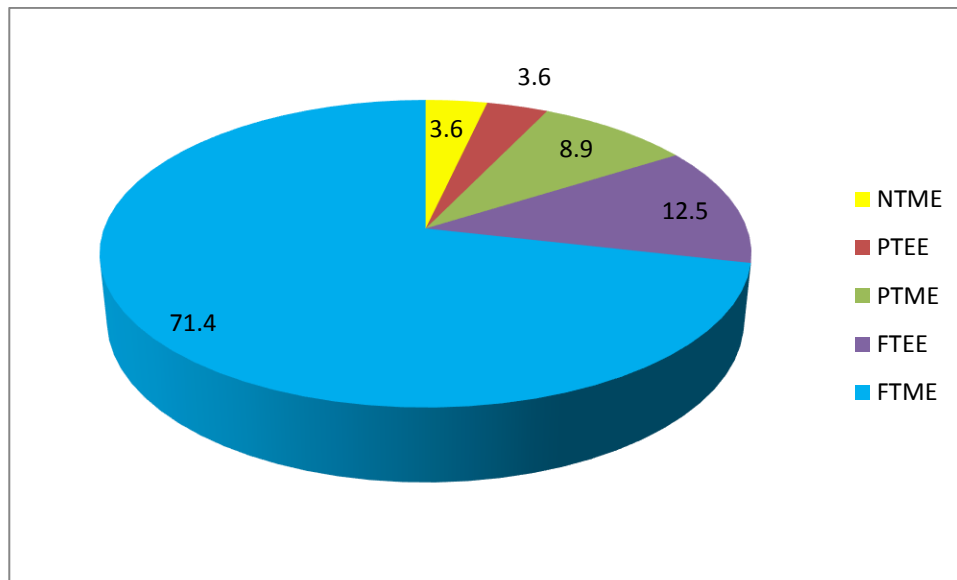


Figure 4.13: Bibliographies and catalogs (010 and 011)

Sub-units labelled NTME made up 3.6% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Commercial miscellany* (again)

Sub-units labelled PTEE made up 3.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| • <i>Standard subdivisions are added for either or both topics in heading</i> | • Standard onderafdelings is bygevoeg vir een of albei onderwerpe in opskrif |
| • <i>Add to base number 011.8 the numbers following —08 in</i> | • Voeg by basis getal 011.8 die getalle volgende -08 in notasie |

notation 081–089 from Table 1, e.g., bibliographies of works by women 011.82, bibliography of works by clergy 011.88

*081–089 van **Table 1**, bv bibliografieë van werke deur vroue 011.82, bibliografie van werke deur geestelikes 011.88*

Sub-units labelled PTME made up 8.9% of the total. Examples of words not translated by Google Translate are:

- *Standard (again)*
- *Geographic*
- *General*

Sub-units labelled FTEE made up 12.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| <ul style="list-style-type: none">• <i>017 General bibliographies and catalogs of works held in specific collections or offered for sale</i> | <ul style="list-style-type: none">• <i>017 Algemene bibliografieë en katalogusse van werke wat in spesifieke versamelings of te koop aangebied</i> |
| <ul style="list-style-type: none">• <i>specific forms, general bibliographies and catalogs of works exhibiting specific bibliographic characteristics other than form</i> | <ul style="list-style-type: none">• <i>spesifieke vorme, algemene bibliografieë en katalogusse van werke uitstal spesifieke behalwe vorm bibliografiese eienskappe</i> |
| <ul style="list-style-type: none">• <i>Including braille, large-print publications</i> | <ul style="list-style-type: none">• <i>Insluitend braille, in groot letters publikasies</i> |

Sub-units labelled FTME made up 71.4% of the total. Minor errors, such as the absence of the double negative (“nie ... nie”) in Afrikaans or the inclusion of an article which should not have been there (“Sien ook 028.1 vir **die** resensies”), occurred.

Table 4.9 and Figure 4.14 indicate Level of comprehensiveness.

Table 4.9: Level of comprehensiveness in 010 and 011

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	2	5	7	40
%	3.6	3.6	8.9	12.5	71.4

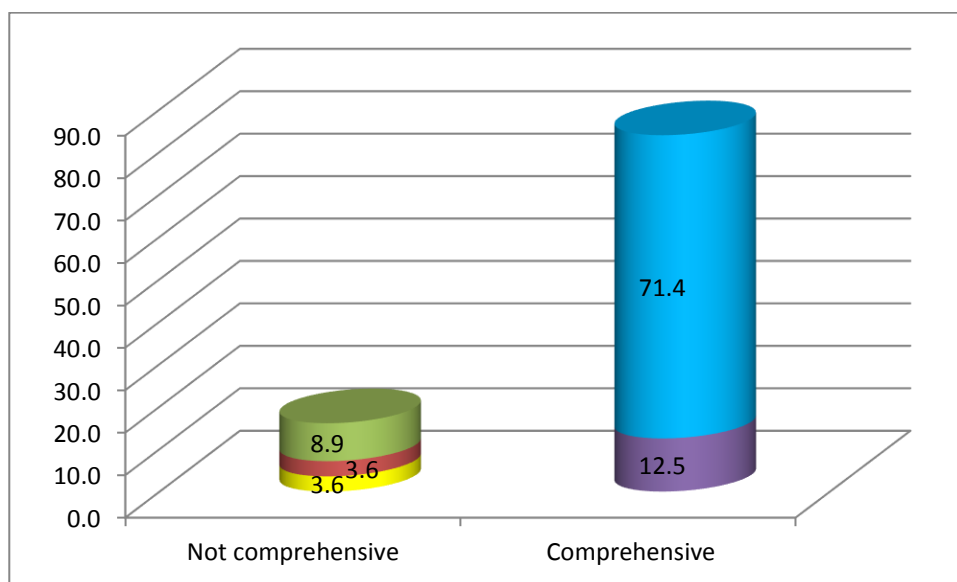


Figure 4.14: Level of comprehensiveness in 010 and 011

Google Translate translated 83.9% or 47 out of 56 sub-units.

Table 4.10 (page 116) and Figure 4.15 (page 116) indicate Degree of editorial effort.

Table 4.10: Degree of editorial effort in 010 and 011

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	2	7	2	5	40
%	3.6	12.5	3.6	8.9	71.4

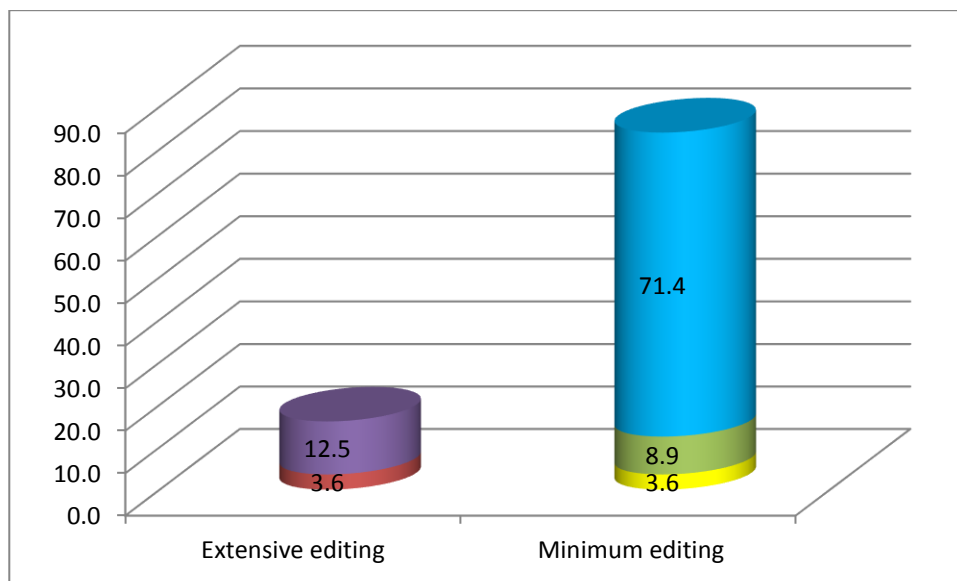


Figure 4.15: Degree of editorial effort in 010 and 011

83.9% (47 out of 56 sub-units) of the translation needed little or no editing.

4.2.6 Library and information sciences (020, 025, 027 and 028)

The 020–029 division starts with the heading, Library and information sciences and a summary. Two sections, 024 and 029, are unassigned. The researcher used four sections of the 020-029 division.

Figure 4.16 (page 117) gives an overview of each evaluation category, measured as a percentage.

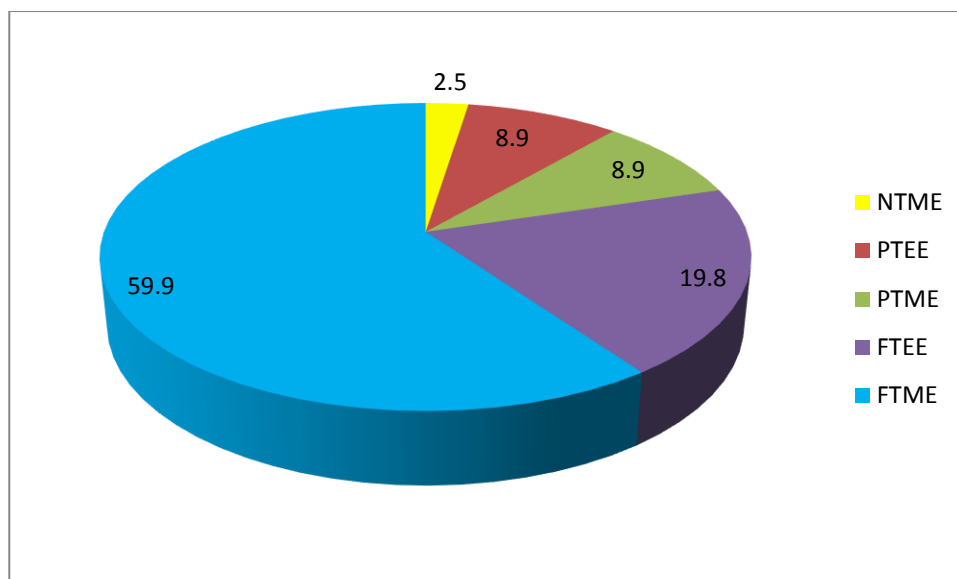


Figure 4.16: Library and information sciences (020, 025, 027 and 028)

Sub-units labelled NTME made up 2.5% of the total. Examples of words not translated by Google Translate are:

- *Management*
- *World Wide Web*
- *Miscellany* (again)

Sub-units labelled PTEE made up 8.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| • <i>Class here directories of web sites, portals</i> | • <i>Klas hier dopgehou van webwerwe, portals</i> |
| • <i>Class use of classification for search and navigation in information storage and retrieval systems in 025.04; class classification of special materials, cooperative classification, reclassification,</i> | • <i>Klas gebruik van klassifikasie vir die soektog en navigasie in inligting stoor en herwinning stelsels in 025.04; klas klassifikasie van spesiale materiaal, koöperatiewe klassifikasie, herklassifikasie,</i> |

subject cataloging and indexing of special materials, cooperative subject cataloging and indexing, recataloging and reindexing in 025.3; class composition of abstracts in 808

onderhewig katalogisering en indeksering van spesiale materiaal, koöperatiewe onderwerp katalogisering en **kruip, recataloging** en **indekseer** in 025.3; klas samestelling van abstrakte in 808

Sub-units labelled PTME made up 8.9% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Nonbook*

Sub-units labelled FTEE made up 19.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Unless other instructions are given, observe the following table of preference, e.g., administration of cataloging in academic libraries 025.3068 (not 025.1 or 027.7):*
- *See also 658.4 for management use of information storage and retrieval systems*
- *022 Administration of physical plant*
- *Including reserve collections; interlibrary loans*
- *Tensy ander instruksies gegee word, **in ag te neem** die volgende tabel van voorkeur, bv administrasie van katalogisering in akademiese biblioteke 025.3068 (nie 025.1 of 027.7):*
- *Sien ook 658.4 vir **die bestuur gebruik** van inligting stoor en herwinning stelsels*
- *022 Administrasie van **fisiese plant***
- *Insluitend **reservaat** versamelings; interbiblioteeklenings*

Sub-units labelled FTME made up 59.9% of the total.

Table 4.11 and Figure 4.17 indicate Level of comprehensiveness.

Table 4.11: Level of comprehensiveness in 020, 025, 027 and 028

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	5	18	18	40	121
%	2.5	8.9	8.9	19.8	59.9

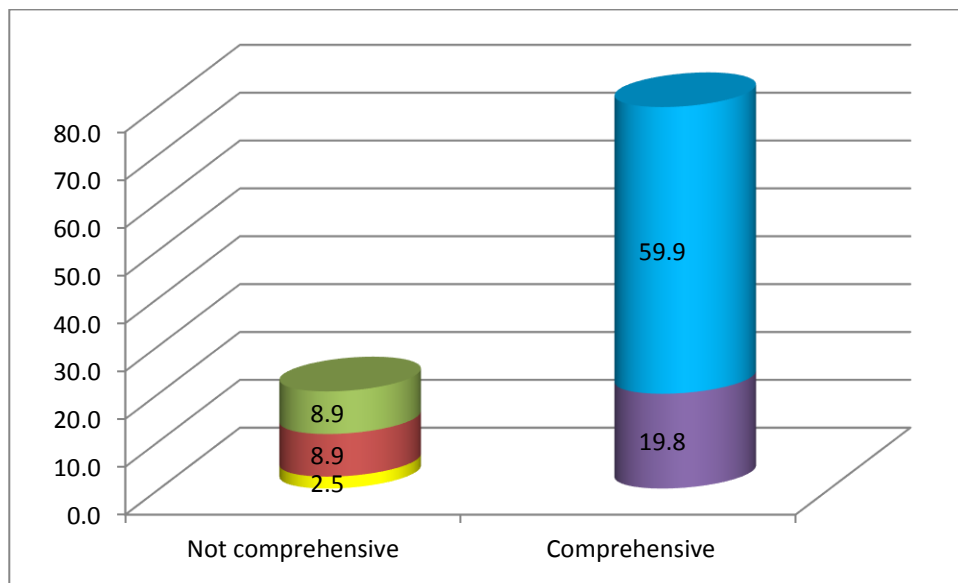


Figure 4.17: Level of comprehensiveness in 020, 025, 027 and 028

Google Translate translated 79.7% or 161 out of 202 sub-units.

Table 4.12 (page 120) and Figure 4.18 (page 120) indicate Degree of editorial effort.

Table 4.12: Degree of editorial effort in 020, 025, 027 and 028

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	18	40	5	18	121
%	8.9	19.8	2.5	8.9	59.9

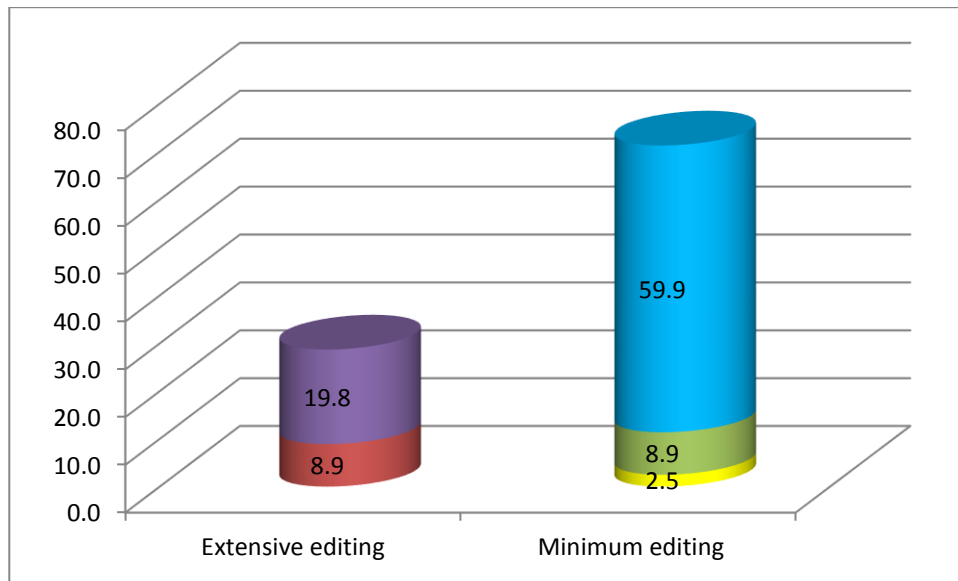


Figure 4.18: Degree of editorial effort in 020, 025, 027 and 028

71.3% (144 out of 202 sub-units) of the translation needed little or no editing.

4.2.7 General encyclopedic works (030–033)

In division 030–039, the researcher used only 030 which serves as an “introduction”, and three other sections because the sections are repetitive. Each section represents general encyclopaedic works of a different language group, so there should not be much difference in the translation results.

Figure 4.19 (page 121) gives an overview of each evaluation category, measured as a percentage.

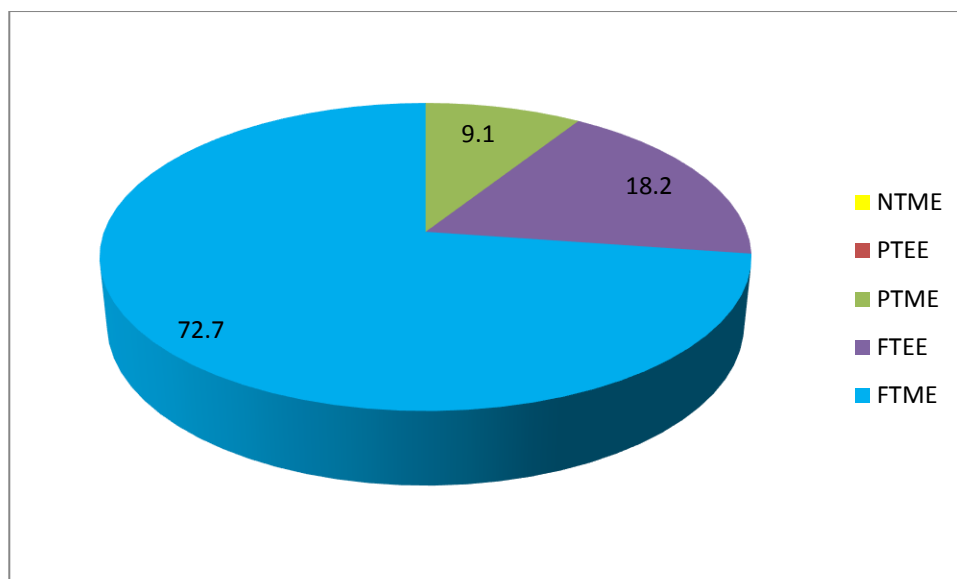


Figure 4.19: General encyclopedic works (030–033)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 0% of the total.

Sub-units labelled PTME made up 9.1% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled FTEE made up 18.2% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class comprehensive works, encyclopedic works originally written in two or more languages or language families in which no language or language family is predominant in 030. Class encyclopedic works originally written in two ...*
- *books of curious ... facts*
- *Klas omvattende werke, ensiklopediese werke oorspronklik geskryf in twee of meer tale of taal families waarin geen taal of taal familie is oorheersend in die klas 030. ensiklopediese werke oorspronklik geskryf in twee ...*
- *boeke van nuuskierig ... feite*

Sub-units labelled FTME made up 72.7% of the total.

Table 4.13 and Figure 4.20 (page 123) indicate Level of comprehensiveness.

Table 4.13: Level of comprehensiveness in 030–033

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	0	2	4	16
%	0	0	9.1	18.2	72.7

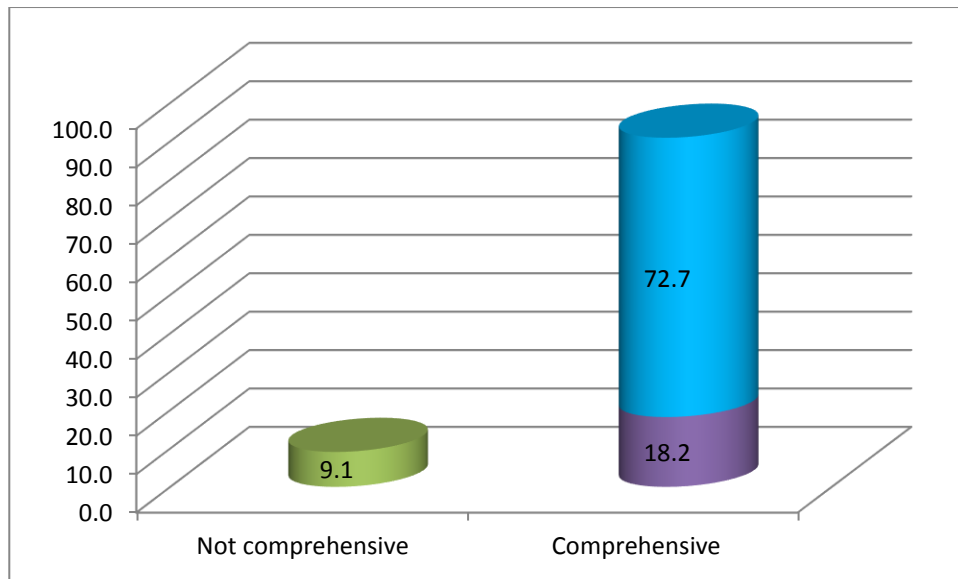


Figure 4.20: Level of comprehensiveness in 030-033

Google Translate translated 90.9% or 20 out of 22 sub-units.

Table 4.14 and Figure 4.21 (page 124) indicate Degree of editorial effort.

Table 4.14: Degree of editorial effort in 030-033

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	0	4	0	2	16
%	0	18.2	0	9.1	72.7

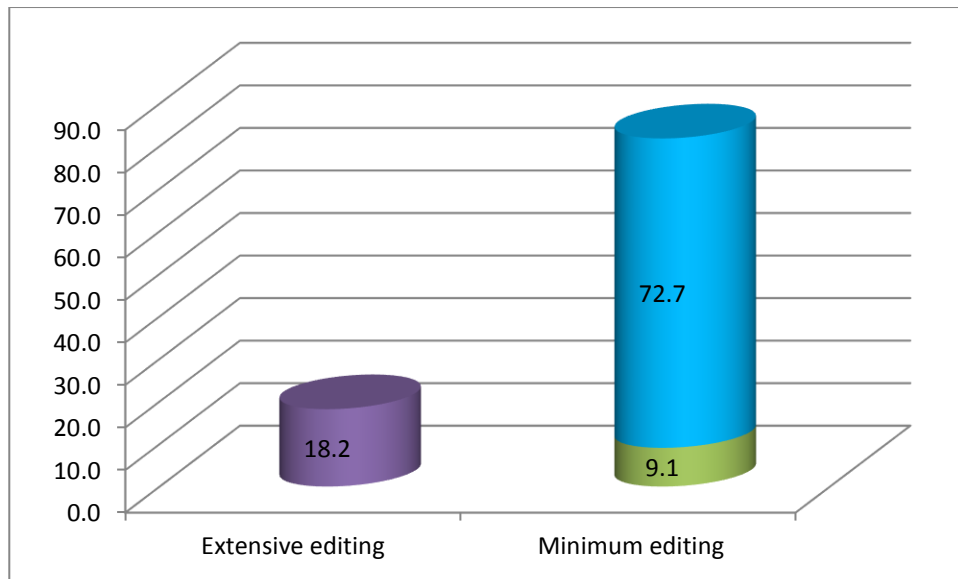


Figure 4.21: Degree of editorial effort in 030–033

81.8% (18 out of 22 sub-units) of the translation needed little or no editing.

4.2.8 General serial publications (050 and 051)

In division 050–059, the researcher used only 050 which serves as an “introduction”, and one section because the sections are repetitive. Each section represents general serial publications of a different language group, so there should not be much difference in the translation, and it is repetitive of the 030 division.

Figure 4.22 (page 125) gives an overview of each evaluation category, measured as a percentage.

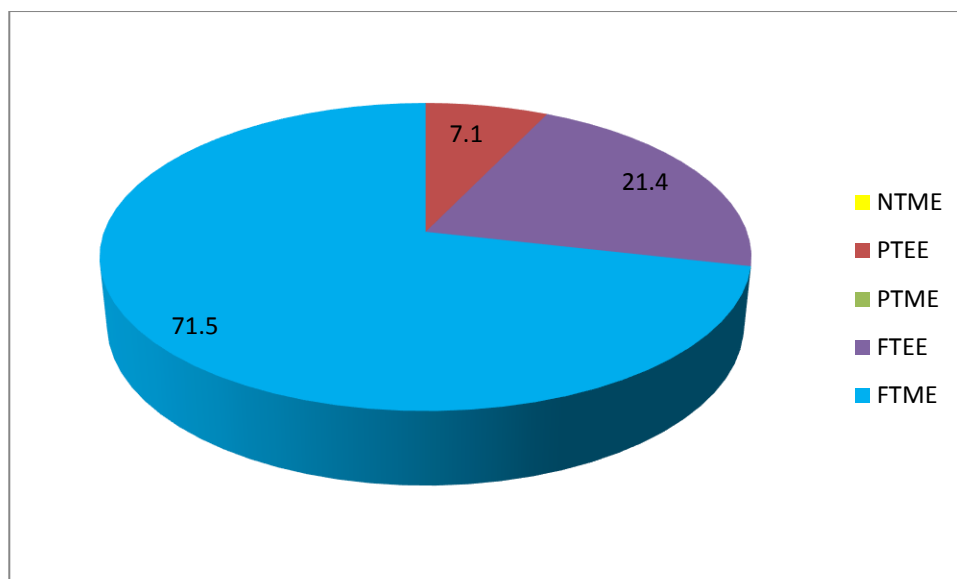


Figure 4.22: General serial publications (050 and 051)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 7.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Class serials originally written in two or more languages or language families in which one language or language family is predominant with the predominant language or language family, e.g., serial written in Spanish with some articles in French 056*
- *Klas tydskrifte oorspronklik geskryf in twee of meer tale of taal families waarin een taal of taal familie **is oorheersend** met die oorheersende taal of taal familie, bv **serial** in Spaans met 'n paar artikels in Frans 056*

Sub-units labelled PTME made up 0% of the total.

Sub-units labelled FTEE made up 21.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class books of miscellaneous facts (even if published annually, e.g., almanacs)*
- *(Option: Arrange serial publications alphabetically under 050)*
- *Klas boeke van diverse feite (selfs al is jaarliks gepubliseer, bv almanakke)*
- *(Opsie: **Reël** reekspublikasies alfabeties onder 050)*

Sub-units labelled FTME made up 71.5% of the total.

Table 4.15 and Figure 4.23 indicate Level of comprehensiveness.

Table 4.15: Level of comprehensiveness in 050 and 051

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	1	0	3	10
%	0	7.1	0	21.4	71.5

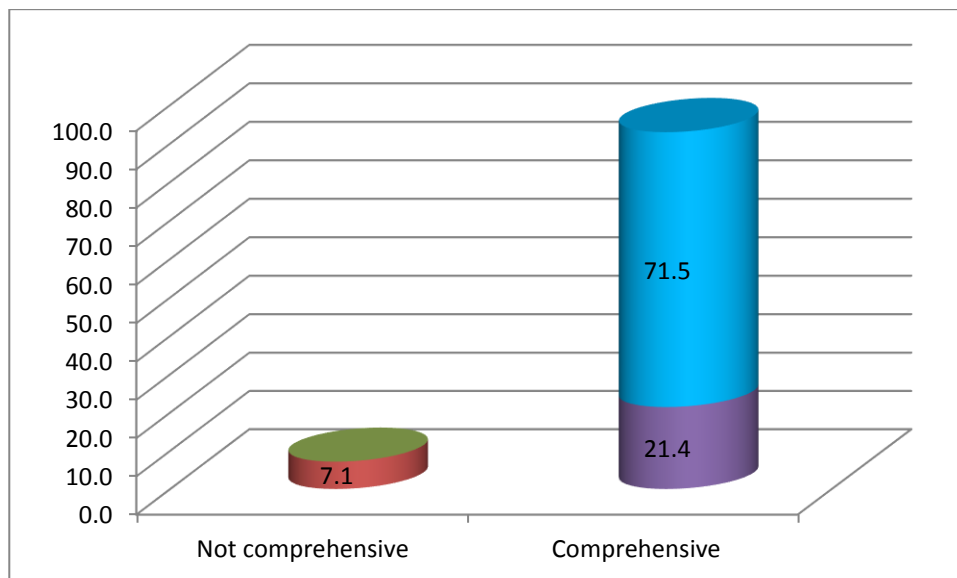


Figure 4.23: Level of comprehensiveness in 050 and 051

Google Translate translated 92.9% or 13 out of 14 sub-units.

Table 4.16 and Figure 4.24 indicate Degree of editorial effort.

Table 4.16: Degree of editorial effort in 050 and 051

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	1	3	0	0	10
%	7.1	21.4	0	0	71.5

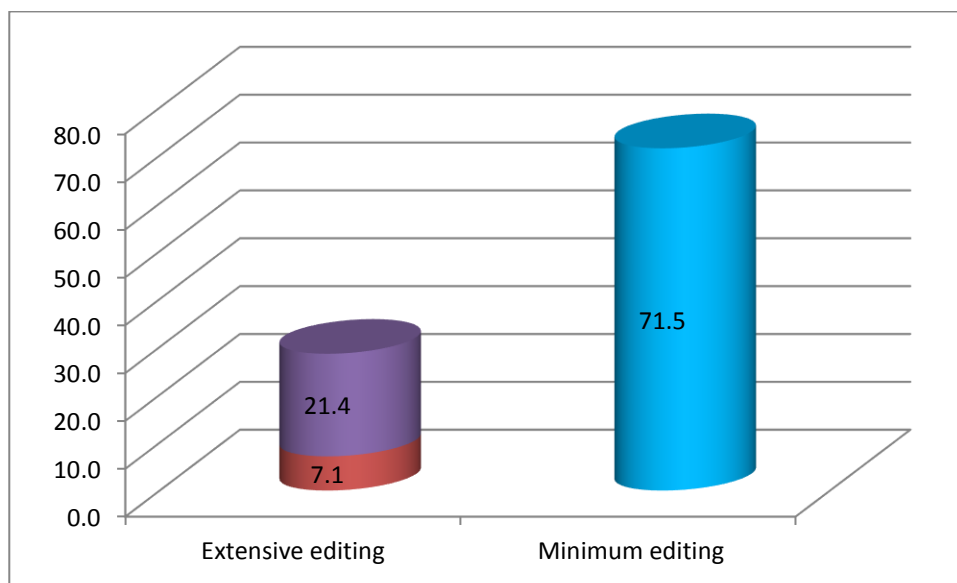


Figure 4.24: Degree of editorial effort in 050, 051

71.5% (10 out of 14 sub-units) of the translation needed little or no editing.

4.2.9 General organizations and museology (060 and 069)

In division 060–069, the researcher used only the introductory 060 and 069 (Museology) because the rest (061–068) resembles 030s and 050s. The 060-069 division covers general organisations in different geographic areas.

Figure 4.25 (page 128) gives an overview of each evaluation category, measured as a percentage.

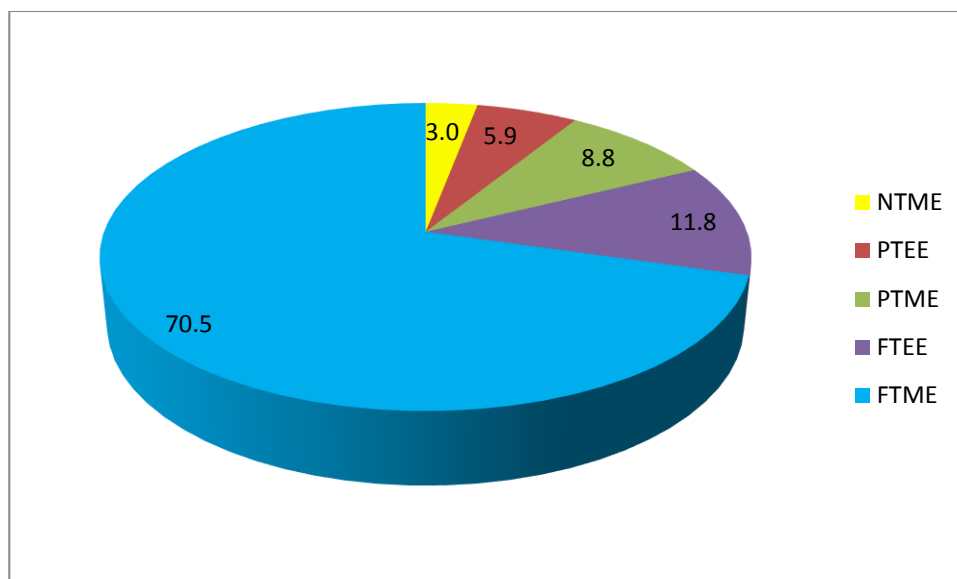


Figure 4.25: General organizations and museology (060 and 069)

Sub-units labelled NTME made up 3% of the total. An example of a word not translated by Google Translate is:

- *Management* (again)

Sub-units labelled PTEE made up 5.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>Class historic preservation in 363.6; class public relations for museums in 659.2. Class collecting a specific kind of object or objects that pertain to a specific subject with the subject, plus notation 075 from Table 1, e.g., collecting fossils 560.75</i> | <ul style="list-style-type: none"> • <i>Klas historiese bewaring in 363.6; klas openbare betrekkinge vir museums in 659.2. Klas invordering van 'n spesifieke soort voorwerp of voorwerpe wat verband hou met 'n spesifieke onderwerp met die onderwerp, plus notasie 075 van Table 1, bv, versamel fossiele 560.75</i> |
|--|---|

Sub-units labelled PTME made up 8.8% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Management* (again)
- *General*
- *Table* (again)

Sub-units labelled FTEE made up 11.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>General organizations: academies, associations, conferences, congresses, foundations, societies whose activity is not limited to a specific field</i> • <i>Including museum services to patrons; organization of production; management and use of physical plant; equipment, furniture, furnishings</i> | <ul style="list-style-type: none"> • <i>Algemene organisasies: akademies, verenigings, konferensies, kongresse, stigtings, verenigings wie se aktiwiteite is nie beperk tot 'n spesifieke gebied</i> • <i>Insluitend museum dienste aan klante; organisasie van die produksie; bestuur en gebruik van fisiese plant; toerusting, meubels, meubels</i> |
|--|--|

Sub-units labelled FTME made up 70.5% of the total.

Table 4.17 and Figure 4.26 (page 130) indicate Level of comprehensiveness.

Table 4.17: Level of comprehensiveness in 060 and 069

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	2	3	4	24
%	3	5.9	8.8	11.8	70.5

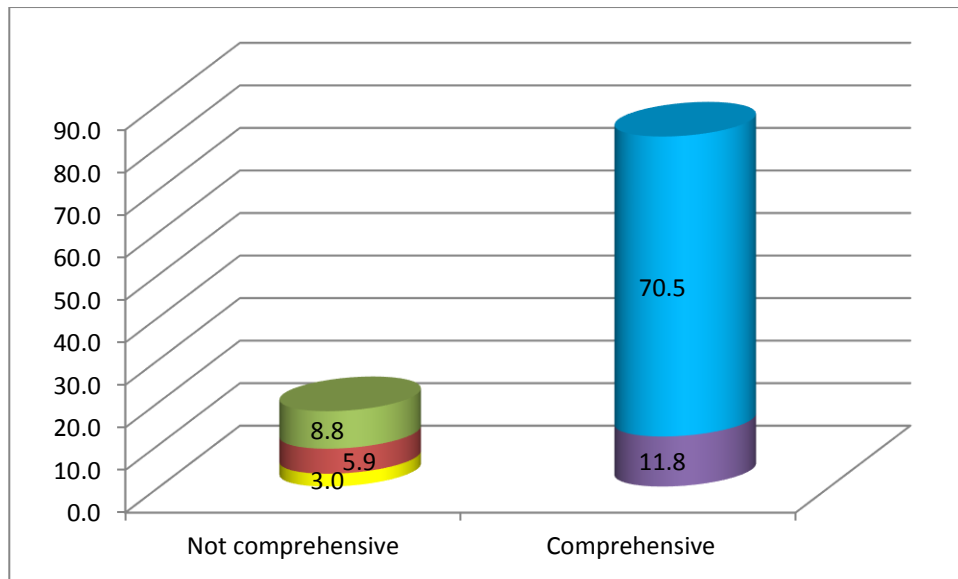


Figure 4.26: Level of comprehensiveness in 060 and 069

Google Translate translated 82.3% or 28 out of 34 sub-units.

Table 4.18 and Figure 4.27 (page 131) indicate Degree of editorial effort.

Table 4.18: Degree of editorial effort in 060 and 069

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	2	4	1	3	24
%	5.9	11.8	3	8.8	70.5

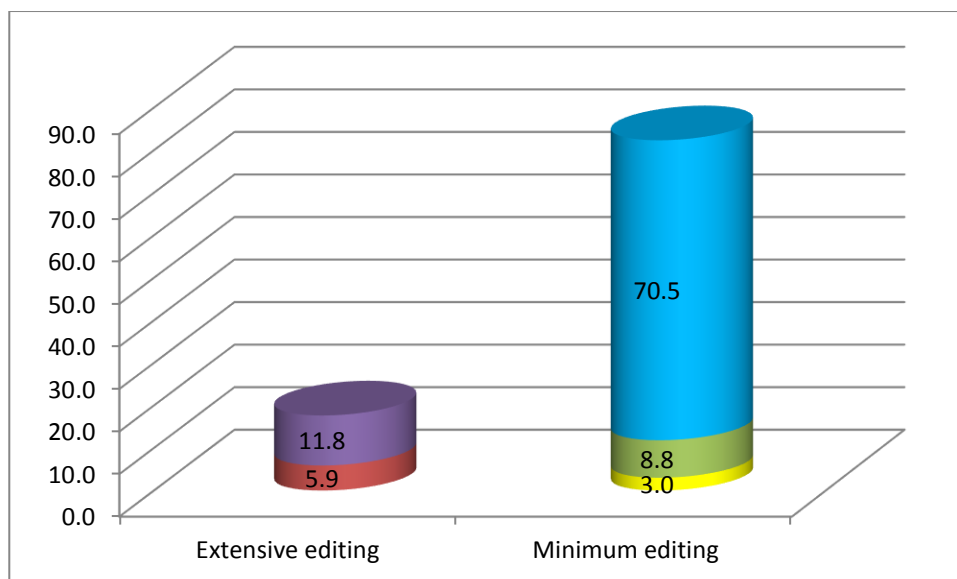


Figure 4.27: Degree of editorial effort in 060 and 069

82.3% (28 out of 34 sub-units) of the translation needed little or no editing.

4.2.10 Documentary media, educational media, news media; journalism; publishing (070)

The researcher used only one section of the 070-079 division. The other sections (071–079) simply refer to different geographic areas and are similar to 030, 050, 060 and 080 in their repetitive nature.

Figure 4.28 (page 132) gives an overview of each evaluation category, measured as a percentage.

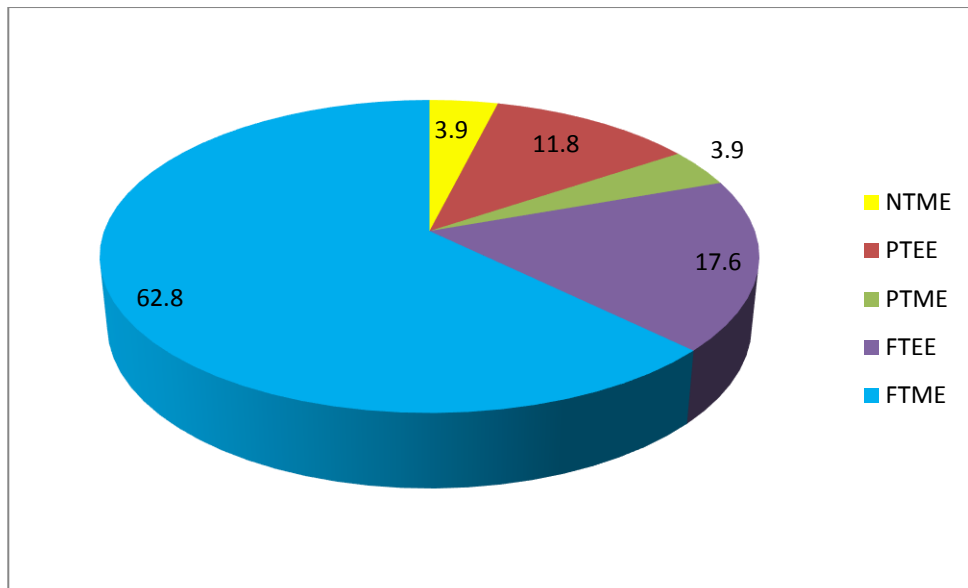


Figure 4.28: Documentary media, educational media, news media; journalism; publishing (070)

Sub-units labelled NTME made up 3.9 % of the total. Examples of words not translated by Google Translate are:

- *Commercial miscellany* (again)
- *Publishing*

Sub-units labelled PTEE made up 11.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>reporting and news gathering; newsreels, radio news programs</i> | <ul style="list-style-type: none"> • <i>verslagdoening en nuus byeenkoms; weekbladen, radio nuus programme</i> |
| <ul style="list-style-type: none"> • <i>070.5093–070.5099; class works on desktop publishing that emphasize ... preparation of manuscript, publishing in 808.02</i> | <ul style="list-style-type: none"> • <i>070.5093–070.5099; klas werk op desktop publishing wat beklemtoon ... voorbereiding van die manuskrip, publishing in 808.02</i> |

Sub-units labelled PTME made up 3.9% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Table* (again)

Sub-units labelled FTEE made up 17.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|---|
| • <i>Class publishers' catalogs in 015</i> | • <i>Katalogusse klas uitgewers 'in 015</i> |
| • <i>Do not use for journalism for occupational and religious groups; class in 070.4</i> | • <i>Moet nie gebruik vir die joernalistiek vir beroepsbeserings en godsdienstige groepe; klas 070.4</i> |
| • <i>class a serial publication on a specific subject with the subject</i> | • <i>klas 'n seriële publikasie op 'n spesifieke onderwerp met die onderwerp</i> |
| • <i>.408 1 Journalism by people by gender or sex</i> | • <i>.408 1 Joernalistiek deur mense deur geslag of geslag</i> |

Sub-units labelled FTME made up 62.8% of the total with the double negative of Afrikaans (“nie ... nie”) lacking.

Table 4.19 and Figure 4.29 (page 134) indicate Level of comprehensiveness.

Table 4.19: Level of comprehensiveness in 070

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	6	2	9	32
%	3.9	11.8	3.9	17.6	62.8

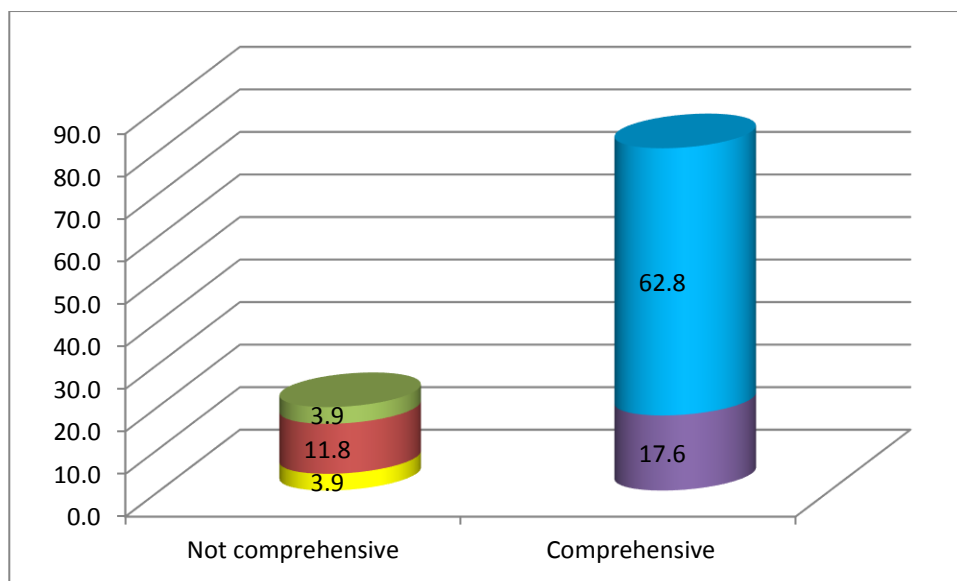


Figure 4.29: Level of comprehensiveness in 070

Google Translate translated 80.4% or 41 out of 51 sub-units.

Table 4.20 and Figure 4.30 (page 135) indicate Degree of editorial effort.

Table 4.20: Degree of editorial effort in 070

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	6	9	2	2	32
%	11.8	17.6	3.9	3.9	62.8

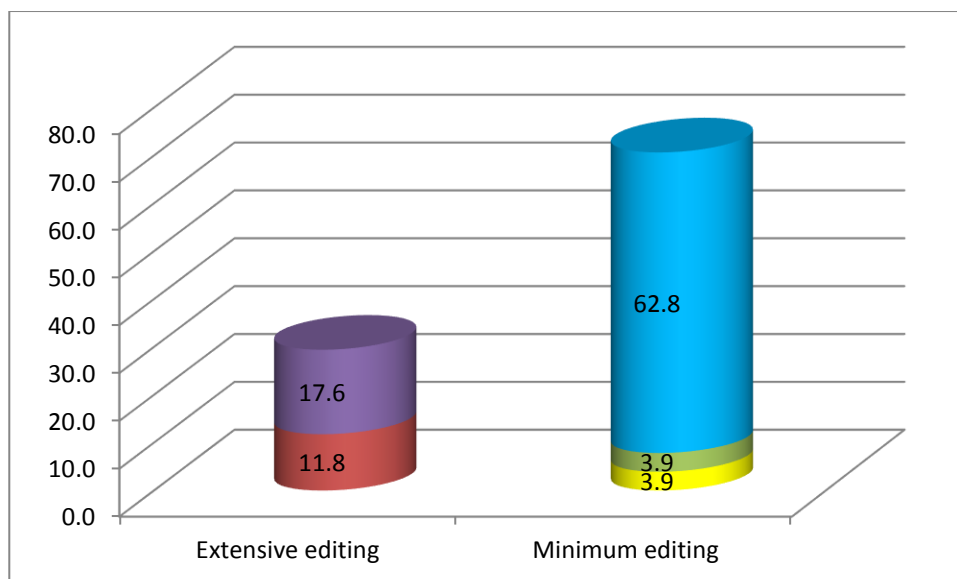


Figure 4.30: Degree of editorial effort in 070

70.6% (36 out of 51 sub-units) of the translation needs little or no editing.

4.2.11 General collections (080 and 081)

In the 080-089 division, the researcher used only 080 which serves as an “introduction”, and one other section because the sections are repetitive. Each section represents general serial publications of a different language group, so there should not be much difference in the translation, and it is repetitive of the 030 and 050 divisions.

Figure 4.31 (page 136) gives an overview of each evaluation category, measured as a percentage.

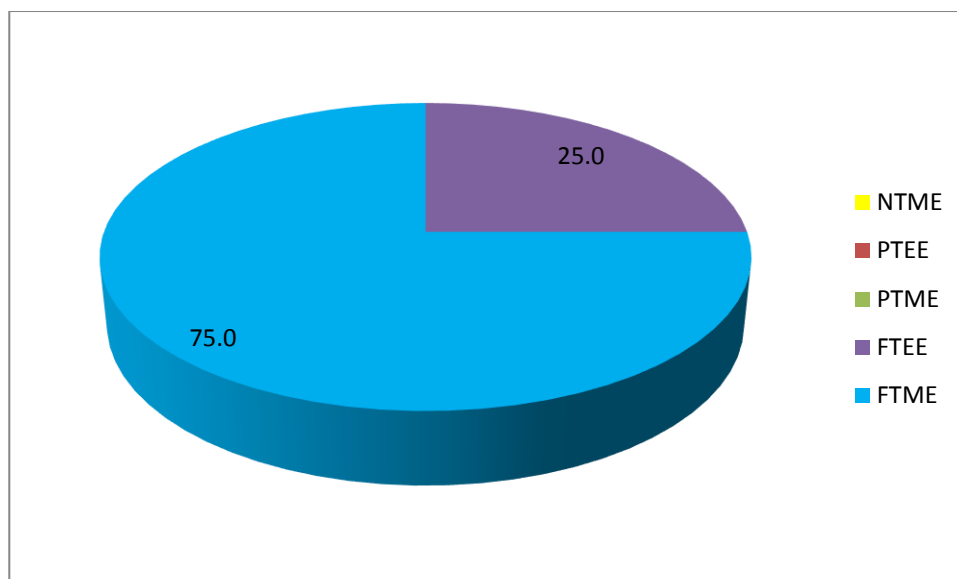


Figure 4.31: General collections (080 and 081)

Sub-units labelled NTME, PTEE and PTME made up 0% of the total.

Sub-units labelled FTEE made up 25% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class here abstracts, addresses, lectures, essays, interviews, graffiti, quotations*
- *Klas hier abstrakte, **adresse**, lesings, essays, onderhoude, graffiti, kwotasies*
- *Arrange collections alphabetically under 080*
- ***Reël** versamelings alfabeties onder 080*

Sub-units labelled FTME made up 75% of the total with only two minor errors: “versamelings [**van**] kort bibliografiese ...”, “Engelse versamelings [**van die**] Westelike Halfrond”, where the words in bold and brackets were left out.

Table 4.21 (page 137) and Figure 4.32 (page 137) indicate Level of comprehensiveness.

Table 4.21: Level of comprehensiveness in 080 and 081

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	0	0	3	9
%	0	0	0	25	75

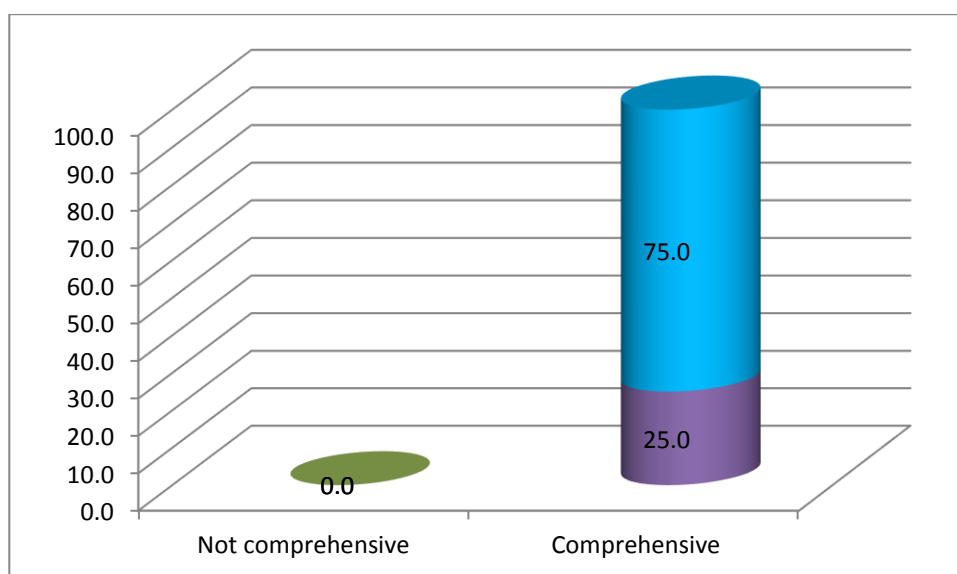


Figure 4.32: Level of comprehensiveness in 080 and 081

Google Translate translated 100% or 12 out of 12 sub-units.

Table 4.22 and Figure 4.33 (page 138) indicate Degree of editorial effort.

Table 4.22: Degree of editorial effort in 080 and 081

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	0	3	0	0	9
%	0	25	0	0	75

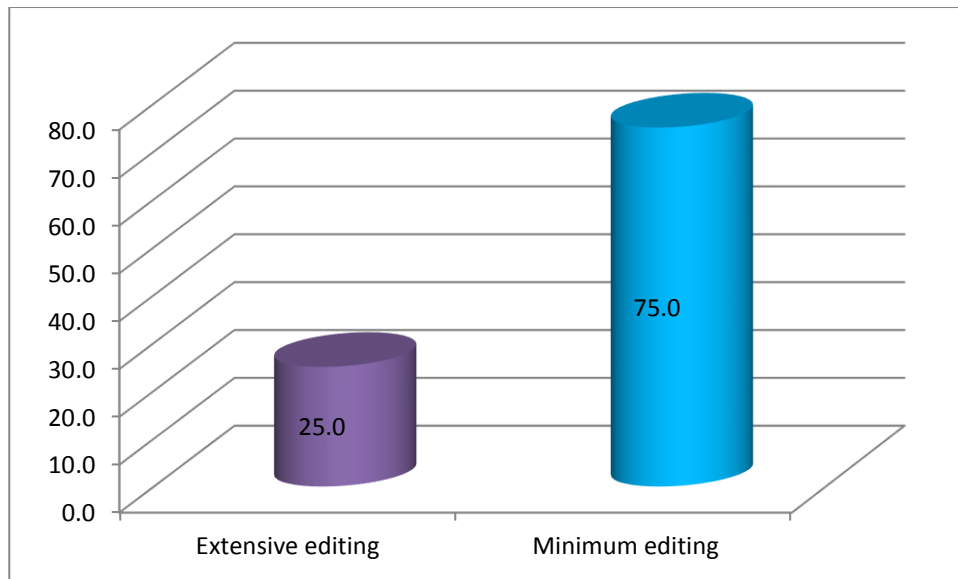


Figure 4.33: Degree of editorial effort in 080 and 081

75% (9 out of 12 sub-units) of the translation needed little or no editing.

4.2.12 Manuscripts, rare books, other rare printed materials (090–099)

The researcher used the whole 090-099 division and it does not have unassigned sections.

Figure 4.34 (page 139) gives an overview of each evaluation category, measured as a percentage.

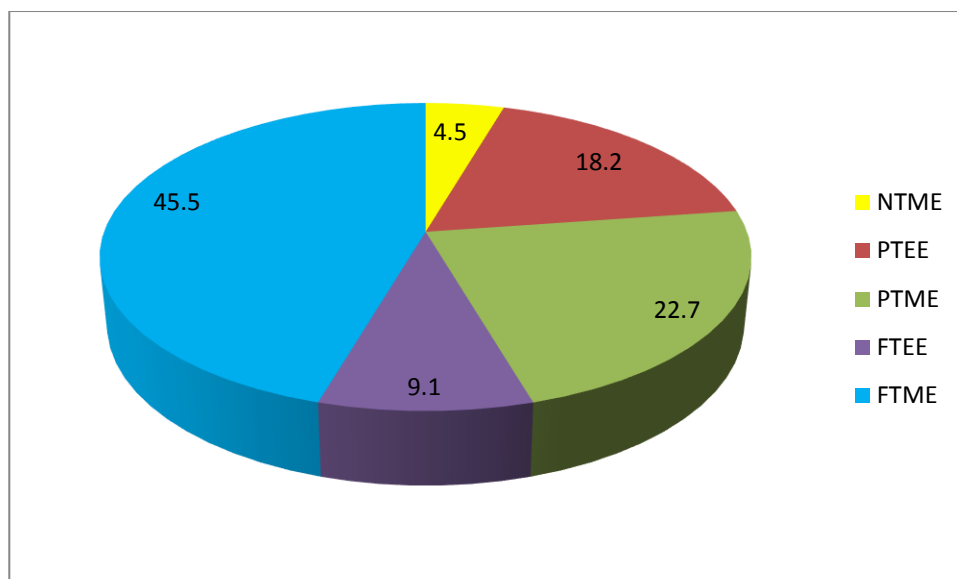


Figure 4.34: Manuscripts, rare books, other rare printed materials (090–099)

Sub-units labelled NTME made up 4.5% of the total. An example of a word not translated, or incorrectly translated into Dutch by Google Translate, is:

- *Incunabelen*

Sub-units labelled PTEE made up 18.2% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *095 Books notable for bindings*
- *095 **Books opvallend vir bindings***
- *097 Books notable for ownership or origin*
- *097 **Books opvallend vir eienaarskap of oorsprong***

Sub-units labelled PTME made up 22.7% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Broadsides*
- *Hoaxes* (again)

Sub-units labelled FTEE made up 9.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Books printed before 1501*
- *Boeke gedruk **voordat** 1501*

Sub-units labelled FTME made up 45.5% of the total.

Table 4.23 and Figure 4.35 (page 141) indicate Level of comprehensiveness.

Table 4.23: Level of comprehensiveness in 090–099

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	4	5	2	10
%	4.5	18.2	22.7	9.1	45.5

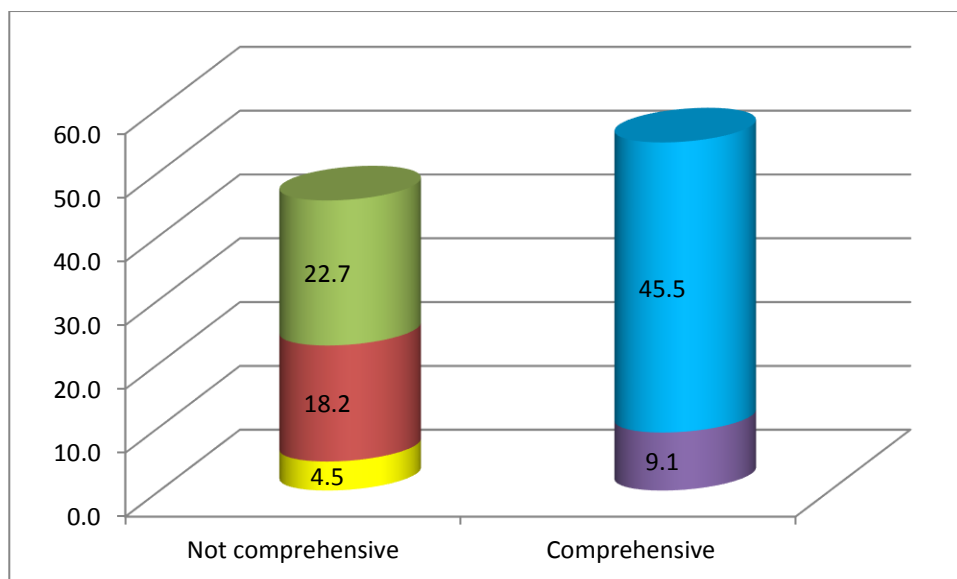


Figure 4.35: Level of comprehensiveness in 090-099

Google Translate translated 54.6% or 12 out of 22 sub-units.

Table 4.24 and Figure 4.36 (page 142) indicate Degree of editorial effort.

Table 4.24: Degree of editorial effort in 090-099

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	4	2	1	5	10
%	18.2	9.1	4.5	22.7	45.5

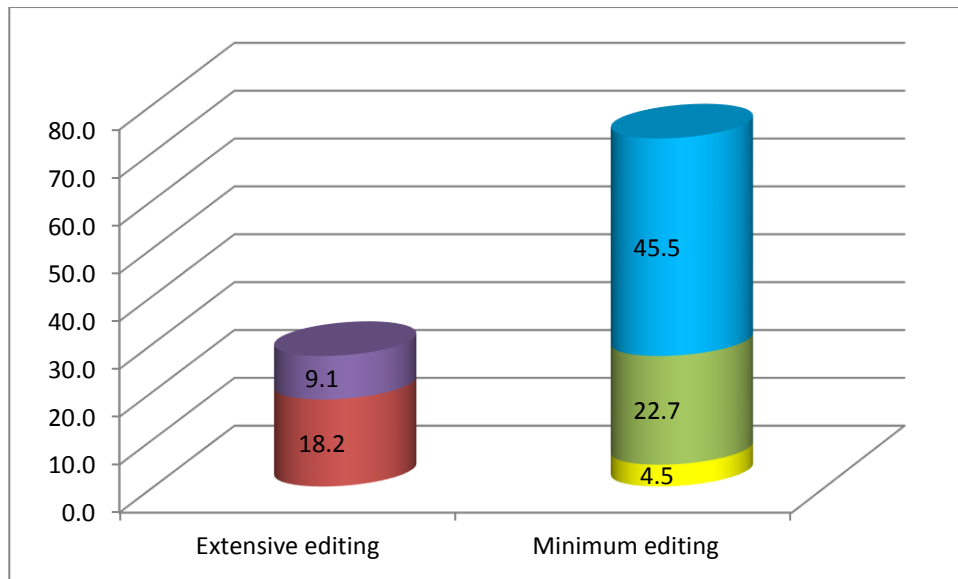


Figure 4.36: Degree of editorial effort in 090–099

72.7% (16 out of 22 sub-units) of the translation needed little or no editing.

4.2.13 Summary of the 000 main class

Table 4.25 (page 143) presents a summary of this class.

Table 4.25: Summary of the 000 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
090–099	22	54.6	004–006	249	60.6
003	8	62.5	003	8	62.5
002	12	66.6	070	51	70.6
004–006	249	74	020, 025, 027, 028	202	71.3
001	46	78.3	050, 051	14	71.5
020, 025, 027, 028	202	79.7	090–099	22	72.7
070	51	80.4	080, 081	12	75
060, 069	34	82.3	001	46	76.1
010, 011	56	83.9	030–033	22	81.8
030–033	22	90.9	060,069	34	82.3
050, 051	14	92.9	010, 011	56	83.9
080, 081	12	100	002	12	91.7
Average %		78.8	Average %		75

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

Eight of the twelve units have a comprehensiveness of 75% or more with one more above 66.7% which indicates that the translations were comprehensive, averaging 78.8%.

In six of the twelve units 75% or more of the translation needs little or no editing; in four more 66.7% or more of the translation needs little or no editing, averaging 75% which indicates minimum editorial effort.

The repetitive nature of some divisions (with examples in 030s, 050s, 060s, 070s, 080s) should expedite a faster translation process.

4.3 The 100 main class

This main class does not have any unassigned divisions. The researcher used a few full divisions, specifically 100-109, 140-149 and 150-159, rather than a few sections from all divisions. The researcher also used four sections of division 170–179 (Ethics) because some sections of 100 and 150 are unassigned.

4.3.1 Philosophy, parapsychology and occultism, psychology (100–109)

The researcher used the whole 100-109 division. It contains the summary for the whole main class, and resembles Table 1 (Standard subdivisions). Section 104 is unassigned.

Figure 4.37 (page 145) gives an overview of each evaluation category, measured as a percentage.

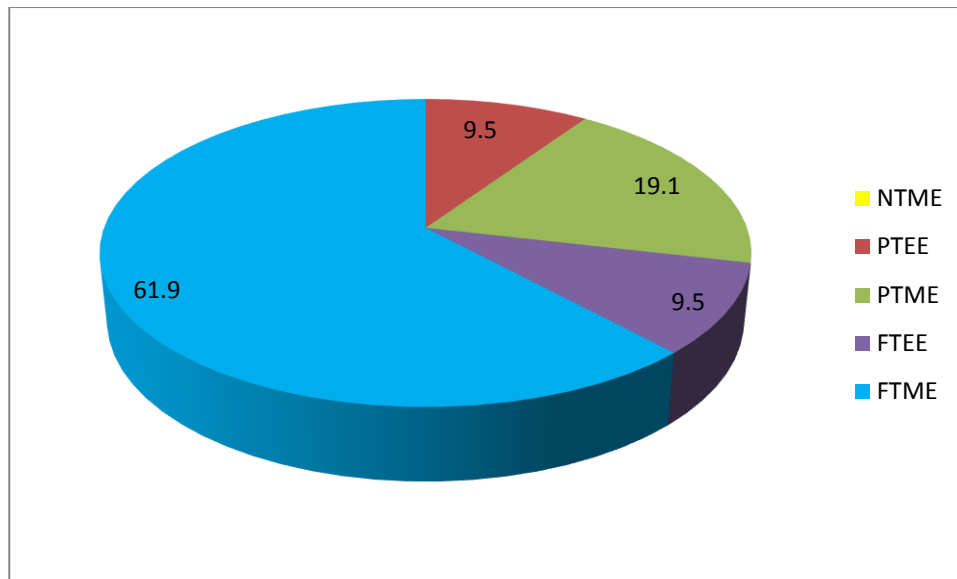


Figure 4.37: Philosophy, parapsychology and occultism, psychology (100–109)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 9.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Works that discuss the discipline of philosophy itself; works that discuss several of philosophy's major questions and branches; comprehensive works on philosophy broad enough to include nonwestern or medieval as well as modern western philosophy are classed in 100 itself or 101–109*
- *Werke wat die dissipline van die filosofie **self te bespreek**; werke wat 'n hele paar van die filosofie se groot vrae en **takke** bespreek; omvattende werke op filosofie breed genoeg **nonwestern** of Middeleeuse asook moderne Westerse filosofie **te sluit geklassifiseer in 100 of 101–109 self***

Sub-units labelled PTME made up 19.1% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Edition*
- *Serial*
- *Collected*

Sub-units labelled FTEE made up 9.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class schools of philosophical thought in 140; class ancient, medieval, eastern schools in 180*
- *Klas skole van filosofiese denke in 140; klas antieke, middeleeuse, oostelike skole in 180*

Sub-units labelled FTME made up 61.9% of the total with unnecessary use of or absence of articles.

Table 4.26 and Figure 4.38 (page 147) indicate Level of comprehensiveness.

Table 4.26: Level of comprehensiveness in 100–109

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	2	4	2	13
%	0	9.5	19.1	9.5	61.9

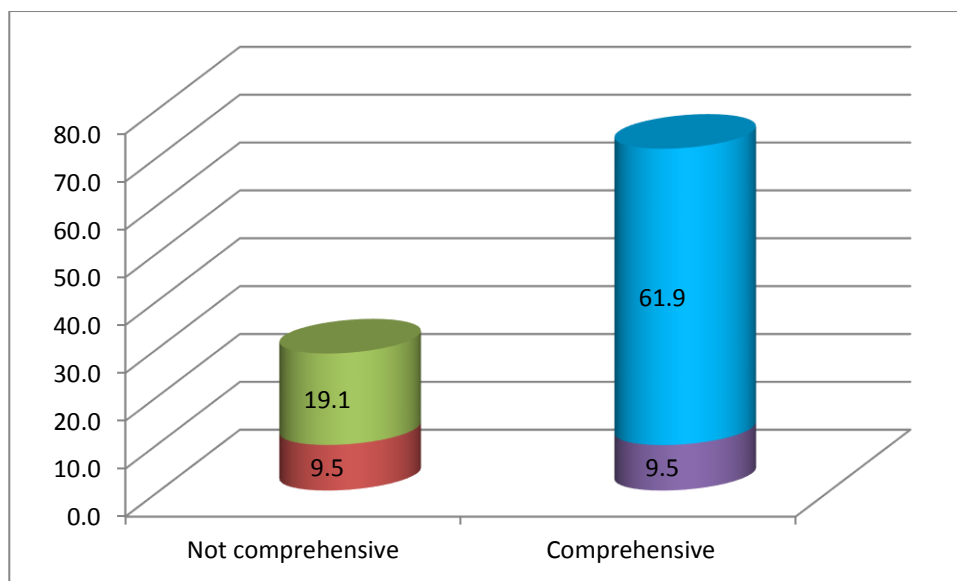


Figure 4.38: Level of comprehensiveness in 100-109

Google Translate translated 71.4% or 15 out of 21 sub-units.

Table 4.27 and Figure 4.39 (page 148) indicate Degree of editorial effort.

Table 4.27: Degree of editorial effort in 100-109

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	2	2	0	4	13
%	9.5	9.5	0	19.1	61.9

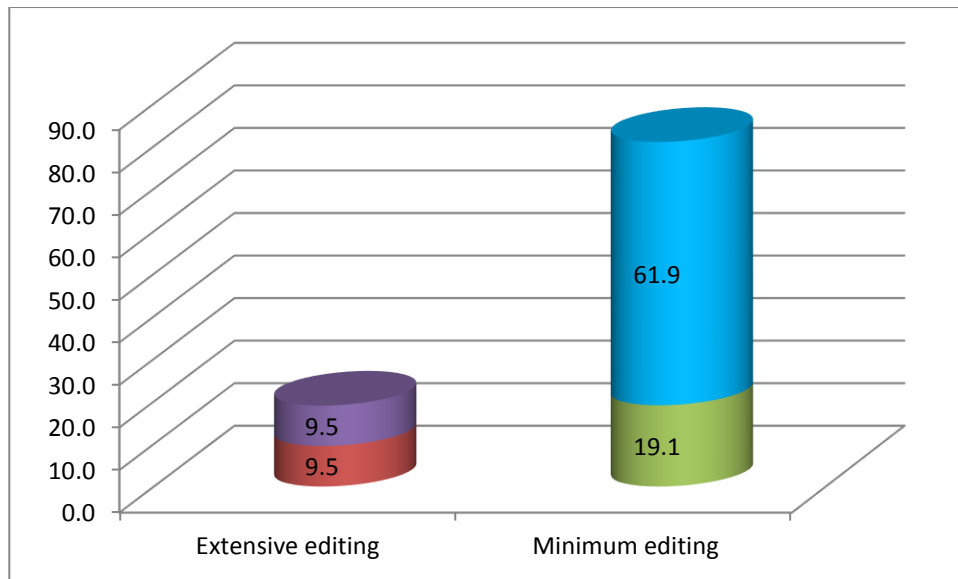


Figure 4.39: Degree of editorial effort in 100–109

81% (17 out of 21 sub-units) of the translation needed little or no editing.

4.3.2 Specific philosophical schools and viewpoints (140–149)

The researcher used the whole 140-149 division and it does not have unassigned sections.

Figure 4.40 (page 149) gives an overview of each evaluation category, measured as a percentage.

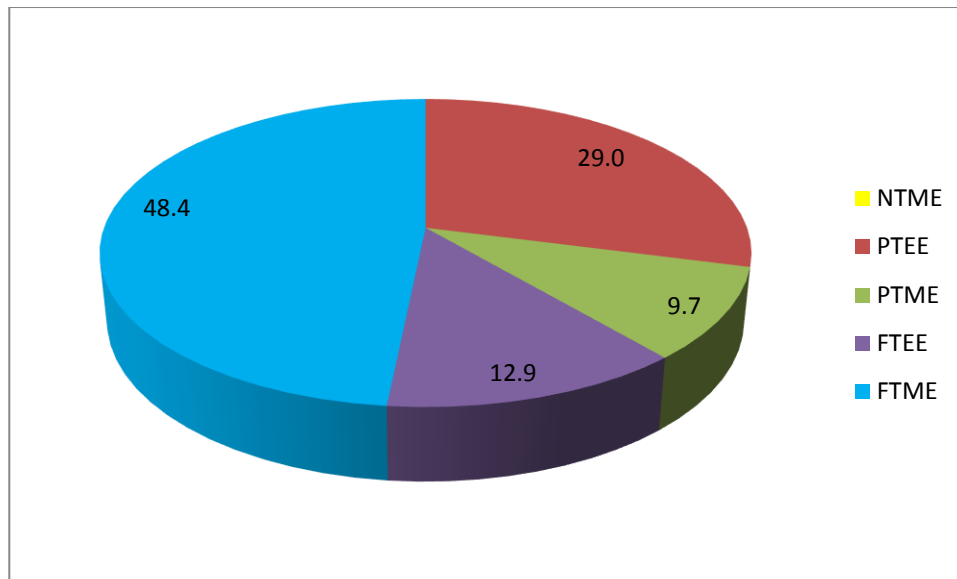


Figure 4.40: Specific Philosophical schools and viewpoints (140–149)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 29% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Standard subdivisions are added for humanism and related systems and doctrines together, for humanism alone*
- *Including panpsychism, spiritualism, subjectivism, voluntarism; modern Platonism and Neoplatonism; transcendentalism; individualism; personalism; romanticism*
- ***Standard onderafdelings word bymekaar getel vir humanisme en verwante stelsels en leerstellings, vir humanisme alleen***
- ***Insluitend panpsychism, spiritualisme, subjektivisme, voluntarisme; moderne Platonisme en Neoplatonisme; transcendentalism; individualisme; personal; romantiek***

Sub-units labelled PTME made up 9.7% of the total. Examples of words not translated by Google Translate are:

- *Bergionism*
- *Instrumentalism*
- *Collected*

Sub-units labelled FTEE made up 12.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class development, description, critical appraisal, collected writings*
- *Klas ontwikkeling, beskrywing, kritiese beoordeling, **ingesamel** geskrifte*
- *Class a specific topic or branch of philosophy treated from a specific philosophical viewpoint with the topic or branch*
- *Klas 'n spesifieke onderwerp of **tak** van die filosofie behandel vanuit 'n spesifieke filosofiese standpunt oor die onderwerp of **tak***
- *Class works that discuss ideology, not as a specific philosophical school, but as systems of beliefs in general in 140*
- *Klas werke wat ideologie bespreek, nie as 'n spesifieke filosofiese skool nie, maar as **stelsels oortuigings** in die algemeen in 140*
- *145 Sensationalism*
- *145 **sensasie***

Sub-units labelled FTME made up 48.4% of the total.

Table 4.28 and Figure 4.41 (page 151) indicate Level of comprehensiveness.

Table 4.28: Level of comprehensiveness in 140–149

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	9	3	4	15
%	0	29	9.7	12.9	48.4

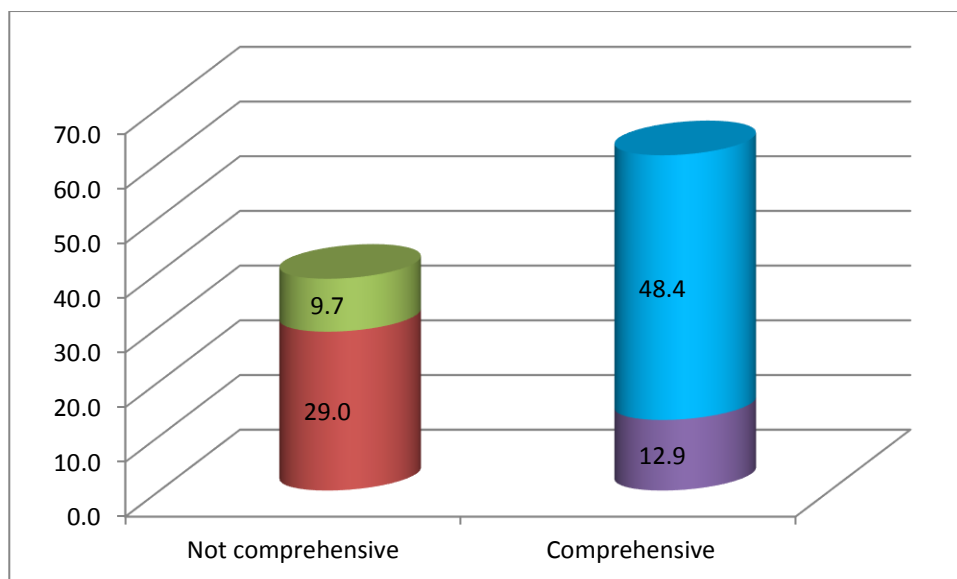


Figure 4.41: Level of comprehensiveness in 140-149

Google Translate translated 61.3% or 19 out of 31 sub-units.

Table 4.29 and Figure 4.42 (page 152) indicate Degree of editorial effort.

Table 4.29: Degree of editorial effort in 140-149

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	9	4	0	3	15
%	29	12.9	0	9.7	48.4

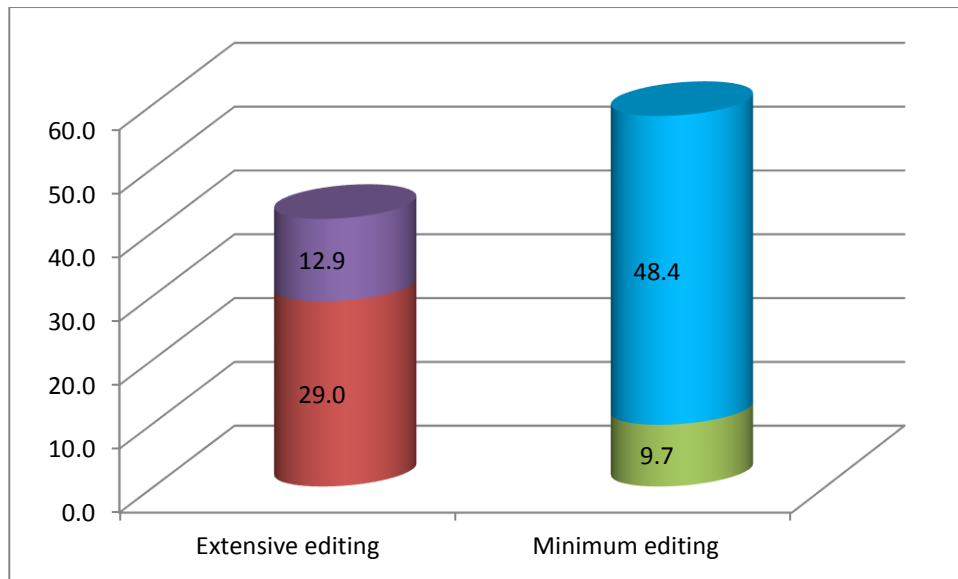


Figure 4.42: Degree of editorial effort in 140–149

58.1% (18 out of 31 sub-units) of the translation needed little or no editing.

4.3.3 Psychology (150–159)

The researcher used the whole 150-159 division. Sections 151, 157 and 159 are unassigned.

Figure 4.43 (page 153) gives an overview of each evaluation category, measured as a percentage.

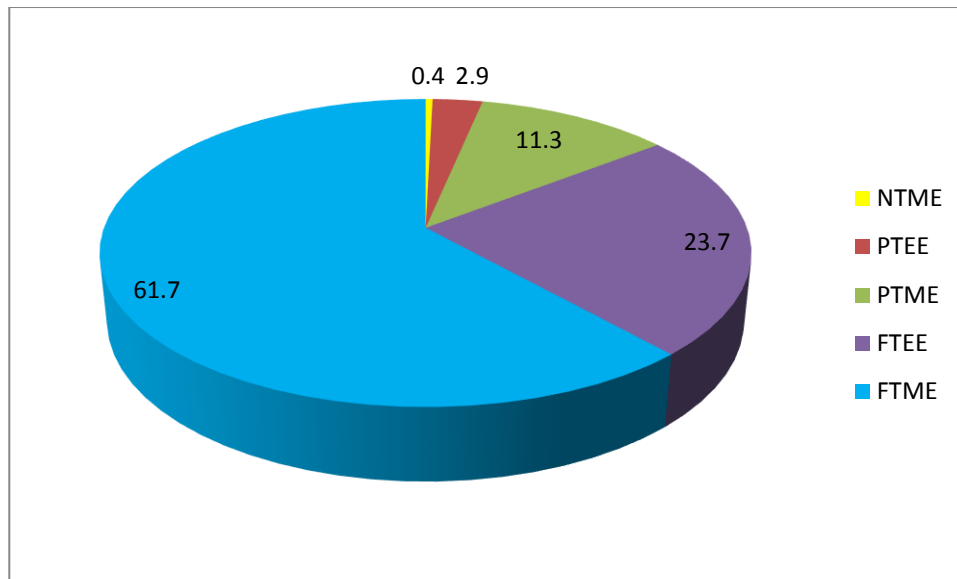


Figure 4.43: Psychology (150–159)

Sub-units labelled NTME made up 0.4% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Hypnotism*

Sub-units labelled PTEE made up 2.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|---|
| <ul style="list-style-type: none"> • <i>Standard subdivisions are added for all the topics in the heading, for sex psychology alone</i> | <ul style="list-style-type: none"> • <i>Standard onderafdelings is bygevoeg vir al die onderwerpe in die opskrif, vir seks alleen sielkunde</i> |
| <ul style="list-style-type: none"> • <i>Standard subdivisions are added for all topics in heading together, for exceptional children alone</i> | <ul style="list-style-type: none"> • <i>Standard onderafdelings bygevoeg vir alle onderwerpe saam op pad is, vir uitsonderlike kinders alleen</i> |

Sub-units labelled PTME made up 11.3% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Systems* (again)
- *Edition* (again)
- *Art*
- *Wit*
- *Time*
- *Memory*
- *Daydreams*

Sub-units labelled FTEE made up 23.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Unless other instructions are given, observe the following table of preference, e.g., emotions of children 155.4 (not 152.4):</i> | <ul style="list-style-type: none"> • <i>Tensy ander instruksies gegee word, in ag te neem die volgende tabel van voorkeur, bv emosies van kinders 155.4 (152.4 nie):</i> |
| <ul style="list-style-type: none"> • <i>Including involuntary movements; automatic movements; habit formation; comprehensive works on habits; voluntary movements; special motor functions (e.g., locomotion, expressive movements, coordination)</i> | <ul style="list-style-type: none"> • <i>Insluitend onwillekeurige bewegings; outomatiese bewegings; vorming gewoonte; omvattende werke op gewoontes; vrywillige bewegings; spesiale motoriese funksies (bv beweging, ekspressiewe bewegings, koördinasie)</i> |
| <ul style="list-style-type: none"> • <i>Including existential, faculty, phenomenological, rational schools; functionalism, reductionism; psychoanalytic systems; other systems (e.g., gestalt psychology, field</i> | <ul style="list-style-type: none"> • <i>Insluitend eksistensiële, fakulteit, fenomenologiese, rasionele skole; funksionalisme, reduksionisme; psigoanalitiese stelsels; ander stelsels (bv gestalt sielkunde, die veld teorie, persoonlike konstruk</i> |

*theory, personal construct
 psychology, humanistic
 psychology, transpersonal
 psychology, positive
 psychology)*

*sielkunde, humanistiese sielkunde,
 sielkunde transpersoonlike,
 positiewe sielkunde)*

Sub-units labelled FTME made up 61.7% of the total with unnecessary use of or absence of articles.

Table 4.30 and Figure 4.44 indicate Level of comprehensiveness.

Table 4.30: Level of comprehensiveness in 150–159

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	8	31	65	169
%	0.4	2.9	11.3	23.7	61.7

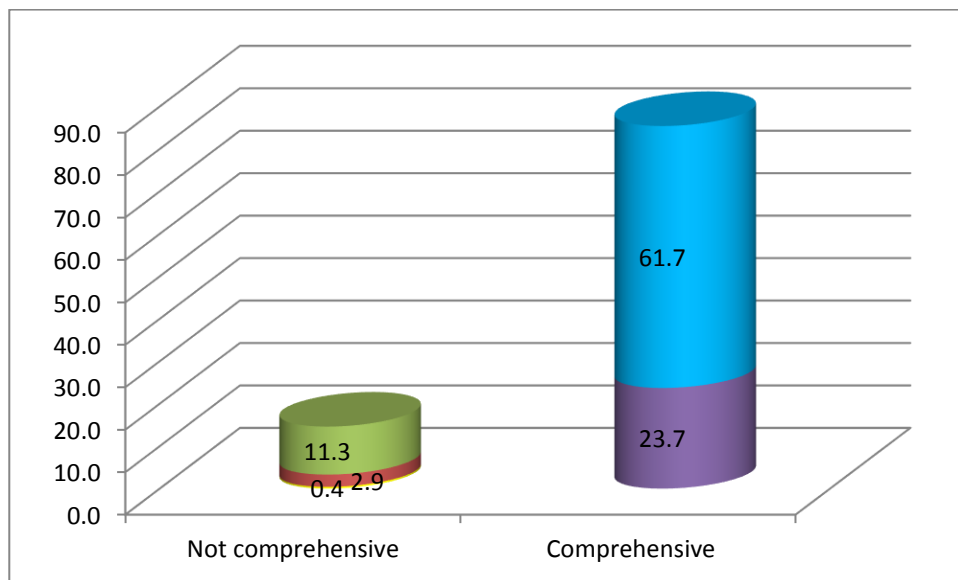


Figure 4.44: Level of comprehensiveness in 150–159

Google Translate translated 85.4% or 234 out of 274 sub-units.

Table 4.31 and Figure 4.45 indicate Degree of editorial effort.

Table 4.31: Degree of editorial effort in 150–159

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	8	65	1	31	169
%	2.9	23.7	0.4	11.3	61.7

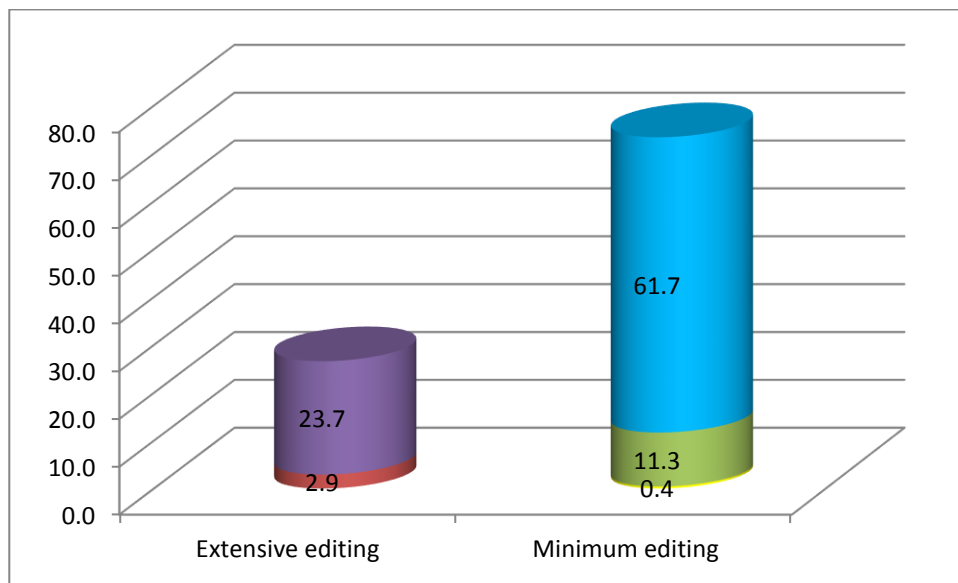


Figure 4.45: Degree of editorial effort in 150–159

73.4% (201 out of 274 sub-units) of the translation needed little or no editing.

4.3.4 Ethics (Moral philosophy) (170–173)

The researcher used four sections in division 170-179 and it is included to make up for some of the unassigned sections in 100–109 and 150–159.

Figure 4.46 (page 157) gives an overview of each evaluation category, measured as a percentage.

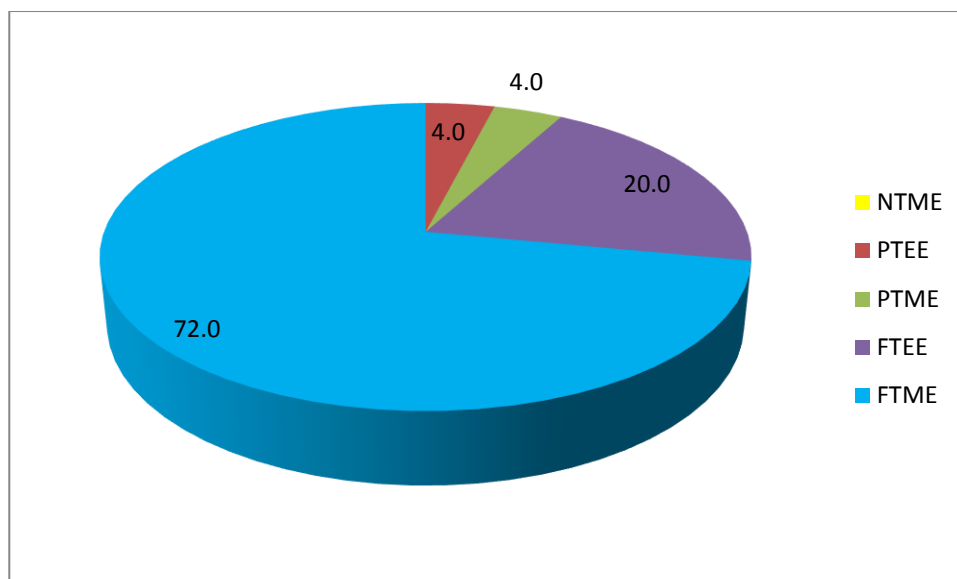


Figure 4.46: Ethics (Moral philosophy) (170–173)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 4% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>170.1–.9 Standard subdivisions</i> | <ul style="list-style-type: none"> • <i>170.1–.9 Standard onderafdelings</i> |
| <i>174 Occupational ethics</i> | <i>174 Beroepsgesondheid etiek</i> |
| <i>175 Ethics of recreation, leisure, public performances, communication</i> | <i>175 Etiek van ontspanning, ontspanning, openbare optredes, kommunikasie</i> |

Sub-units labelled PTME made up 4% of the total. An example of a word not translated by Google Translate is:

- *Metaethics*

Sub-units labelled FTEE made up 20% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>[.88] Occupational and religious</i> | <ul style="list-style-type: none"> • <i>[.88] Beroepsgesondheid en</i> |
|---|--|

groups

- *Class bases for specific systems, deontology, virtue ethics, consequentialism, utilitarianism in 171*

godsdienstige groepe

- *Klas **basisse** vir spesifieke stelsels, deontologie, deugsaamheidsetiek, **konsekwensialisme**, **utilitarisme** in 171*

Sub-units labelled FTME made up 72% of the total with unnecessary use of or absence of articles.

Table 4.32 and Figure 4.47 (page 159) indicate Level of comprehensiveness.

Table 4.32: Level of comprehensiveness in 170–173

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	1	1	5	18
%	0	4	4	20	72

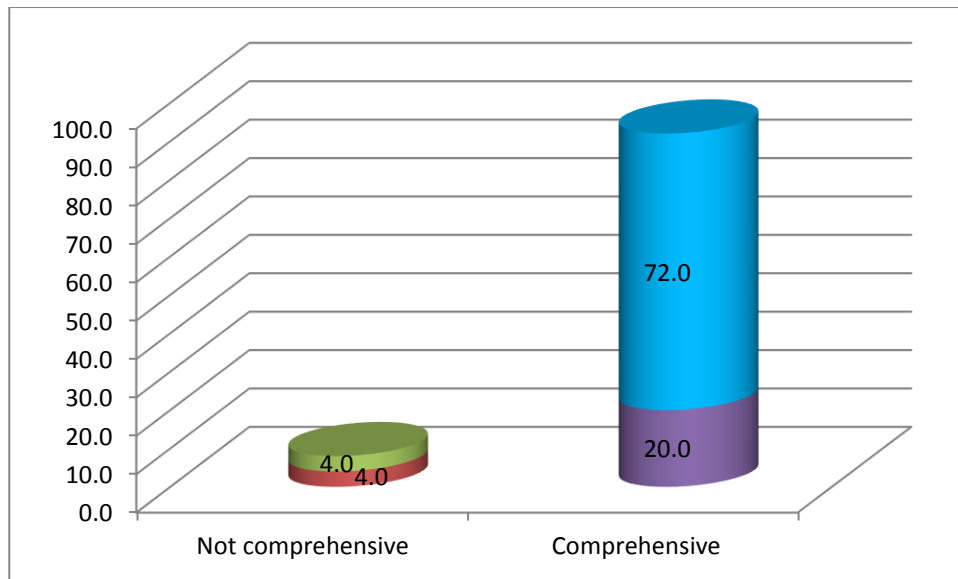


Figure 4.47: Level of comprehensiveness in 170-173

Google Translate translated 92% or 23 out of 25 sub-units.

Table 4.33 and Figure 4.48 (page 160) indicate Degree of editorial effort.

Table 4.33: Degree of editorial effort in 170-173

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	1	5	0	1	18
%	4	20	0	4	72

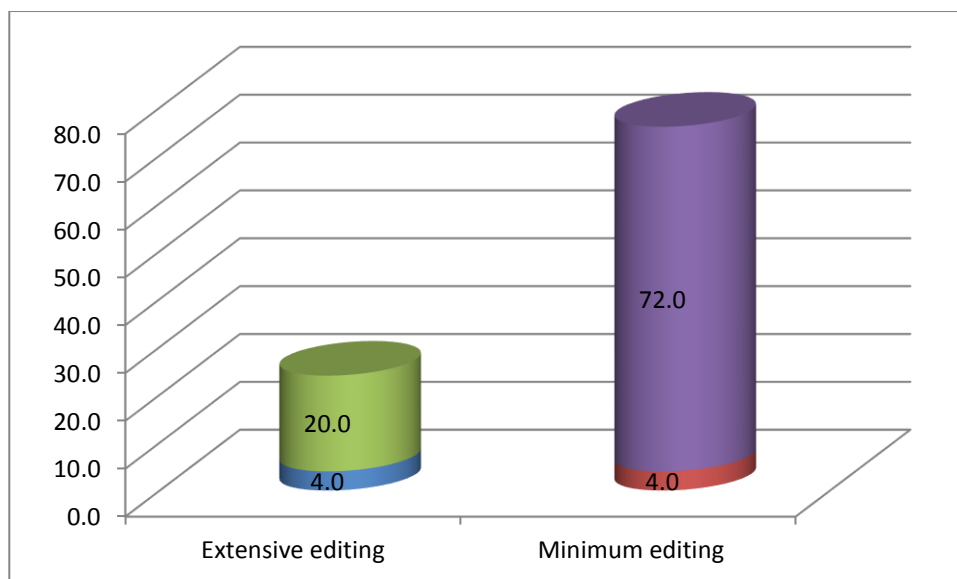


Figure 4.48: Degree of editorial effort in 170-173

76% (19 out of 25 sub-units) of the translation needed little or no editing.

4.3.5 Summary of the 100 main class

Table 4.34 presents a summary of this class.

Table 4.34: Summary of the 100 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
140-149	31	61.3	140-149	31	58.1
100-109	21	71.4	150-159	274	73.4
150-159	274	85.4	170-173	25	76
170-173	25	92	100-109	21	81
Average %		77.5	Average %		72.1

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

Two of the four units have a comprehensiveness of 75% or more with one more above 66.7% which indicates that the translations were comprehensive, averaging 77.5%.

In two of the four units 75% or more of the translation needs little or no editing; in one other 73.4% of the translation needs little or no editing, averaging 72.1% which indicates minimum editorial effort.

4.4 The 200 main class

This main class does not have any unassigned divisions. The researcher used a few full divisions, rather than smaller sections of all divisions, and covers the full 200 (introductory), 230 and 290 disciplines, with three sections of 260 because some sections in 230 and 290 are unassigned.

4.4.1 Religion (200–209)

The researcher used the whole 200-209 division. The 200–209 division does not have unassigned sections. It contains the summary for the whole main class, but does not resemble Table 1 (Standard subdivisions) as in the 100 main class.

Figure 4.49 (page 162) gives an overview of each evaluation category, measured as a percentage.

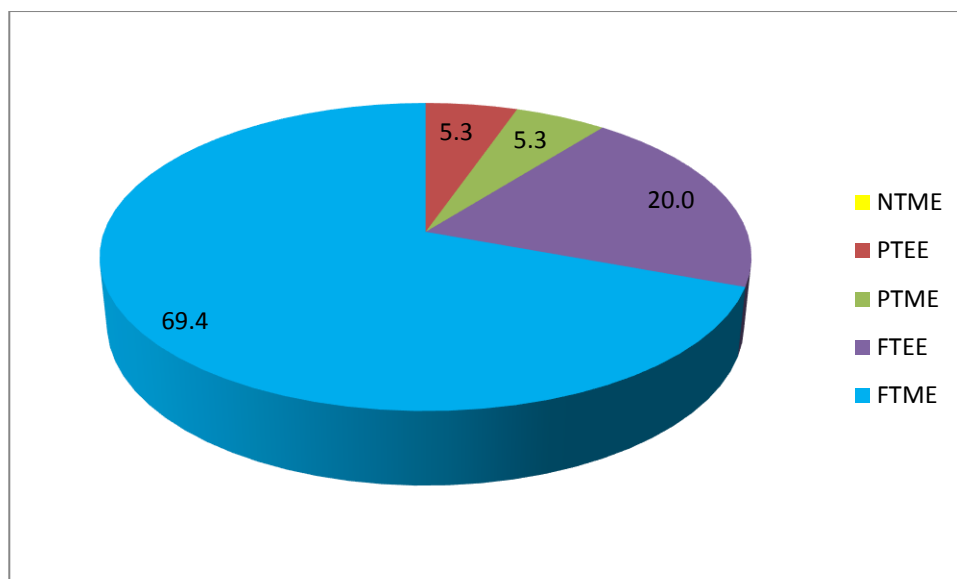


Figure 4.49: Religion (200–209)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 5.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>200.1–.9 Standard subdivisions</i> <i>230 Christianity</i> <i>250 Local Christian church and Christian religious orders</i> | <ul style="list-style-type: none"> • <i>200.1–.9 Standard onderafdelings</i> <i>230 Christenskap</i> <i>250 Plaaslike Christelike kerk en Christelike godsdienstige bestellings</i> |
|--|---|

Sub-units labelled PTME made up 5.3% of the total. Examples of words not translated by Google Translate are:

- *Existences*
- *Standard (again)*
- *Systems (again)*

Sub-units labelled FTEE made up 20% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class here comparative religion; religions other than Christianity; works dealing with various religions, with religious topics not applied to specific religions; syncretistic religious writings of individuals expressing personal views and not claiming to establish a new religion or to represent an old one*
- *Klas hier vergelykende godsdiens; **anders as die Christendom godsdiens**; werk wat handel oor verskeie gelowe, met godsdienslike onderwerpe **nie op spesifieke godsdiens**; sinkretistiese godsdienslike **geskrifte van individue uitdrukking van persoonlike menings en nie voorgee om 'n nuwe godsdiens te vestig of om 'n ou een verteenwoordig***

Sub-units labelled FTME made up 69.4% of the total with unnecessary use of or absence of articles.

Table 4.35 and Figure 4.50 (page 164) indicate Level of comprehensiveness.

Table 4.35: Level of comprehensiveness in 200–209

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	4	4	15	52
%	0	5.3	5.3	20	69.4

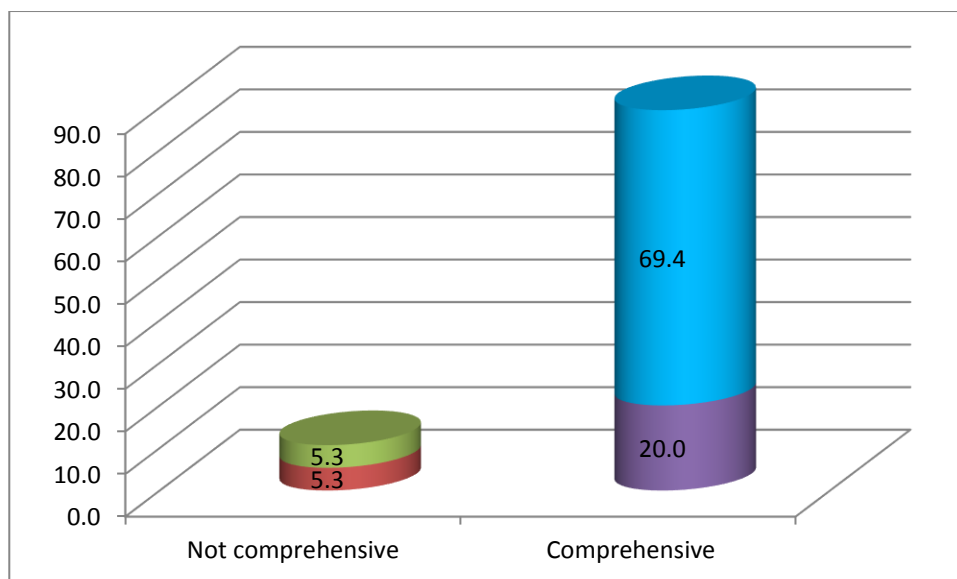


Figure 4.50: Level of comprehensiveness in 200–209

Google Translate translated 89.4% or 67 out of 75 sub-units.

Table 4.36 and Figure 4.51 (page 165) indicate Degree of editorial effort.

Table 4.36: Degree of editorial effort in 200–209

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	4	15	0	4	52
%	5.3	20	0	5.3	69.4

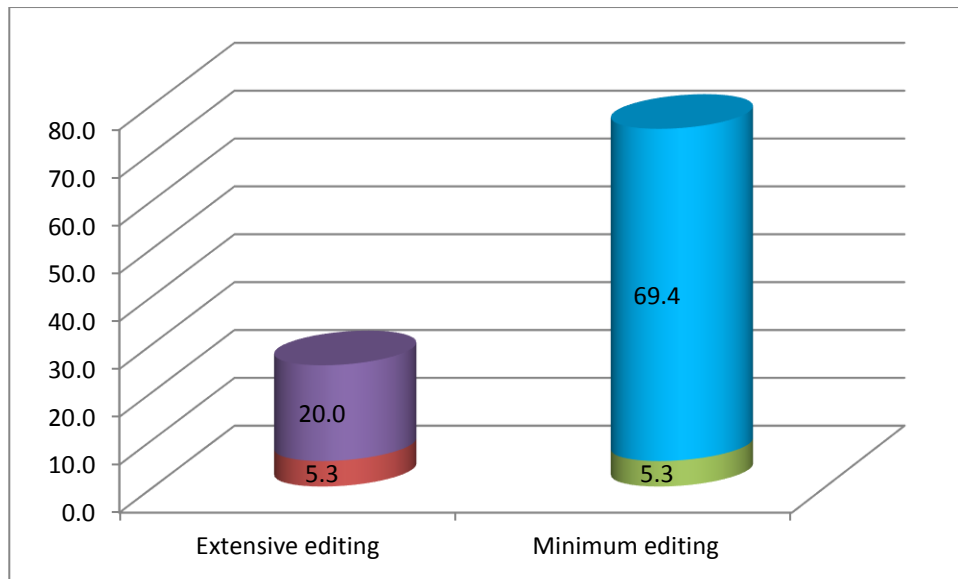


Figure 4.51: Degree of editorial effort in 200–209

74.7% (56 out of 75 sub-units) of the translation needed little or no editing.

4.4.2 Christianity (230–239)

Division 230-239 forms part of the larger Christianity grouping (230–289).

The researcher used the whole 230-239 division. Section 237 is unassigned.

Figure 4.52 (page 166) gives an overview of each evaluation category, measured as a percentage.

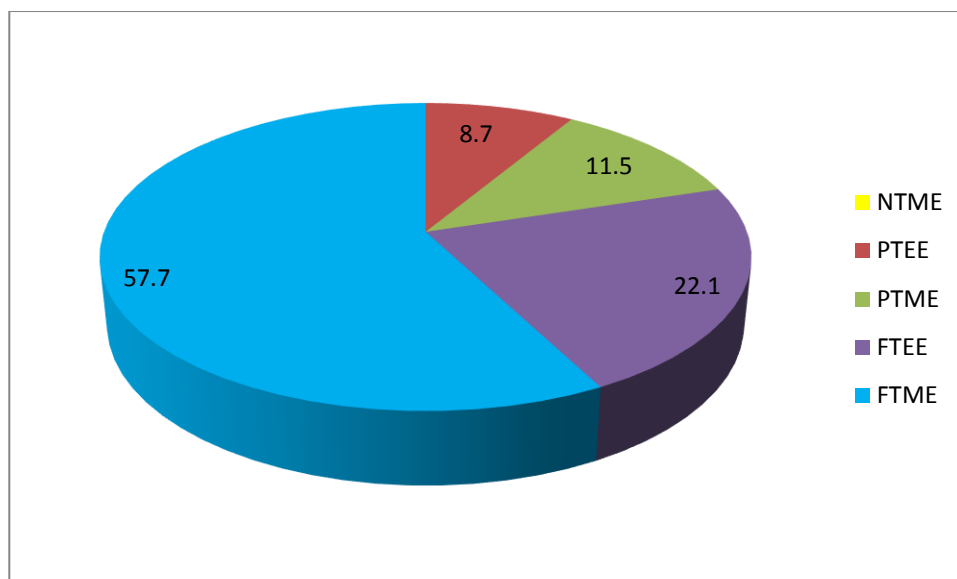


Figure 4.52: Christianity (230–239)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 8.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Class Providence in 231; class redemption in 234; class Kingdom of God to come in 236; class divine law in 241; class believers' experience of God in ...*
- *Klas **Providence** in 231; klas verlossing in 234; klas Koninkryk van God **te kom** in 236; klas **goddelike wet** in 241; klas gelowiges se ervaring van God in ...*

Sub-units labelled PTME made up 11.5% of the total. Examples of words not translated by Google Translate are:

- *Christian*
- *Standard* (again)
- *Serial* (again)
- *Edition* (again)
- *Mariology*
- *Theosis*

Sub-units labelled FTEE made up 22.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|---|
| • <i>230–280 Christianity</i> | • <i>230–280 Christenskap</i> |
| • <i>Christian religious orders</i> | • <i>Christelike godsdienstige bestellings</i> |
| • <i>For death, immortality, see 236</i> | • <i>Want die dood, onsterflikheid, sien 236</i> |
| • <i>to inculcate Christian faith and practice</i> | • <i>aan Christelike geloof kweek en oefen</i> |

Sub-units labelled FTME made up 57.7% of the total with unnecessary use of or absence of articles.

Table 4.37 and Figure 4.53 (page 168) indicate Level of comprehensiveness.

Table 4.37: Level of comprehensiveness in 230–239

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	9	12	23	60
%	0	8.7	11.5	22.1	57.7

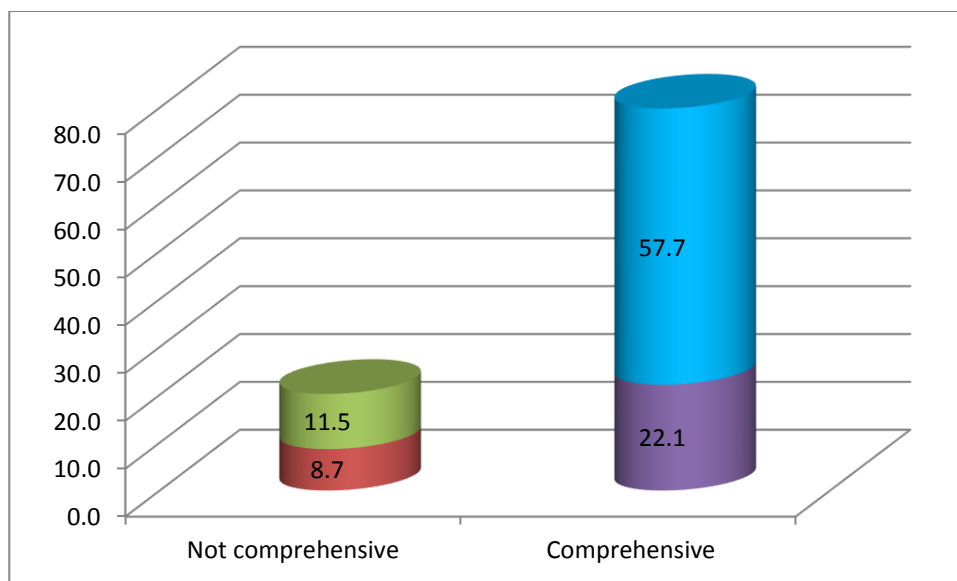


Figure 4.53: Level of comprehensiveness in 230–239

Google Translate translated 79.8% or 83 out of 104 sub-units.

Table 4.38 and Figure 4.54 (page 169) indicate Degree of editorial effort.

Table 4.38: Degree of editorial effort in 230–239

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	9	23	0	12	60
%	8.7	22.1	0	11.5	57.7

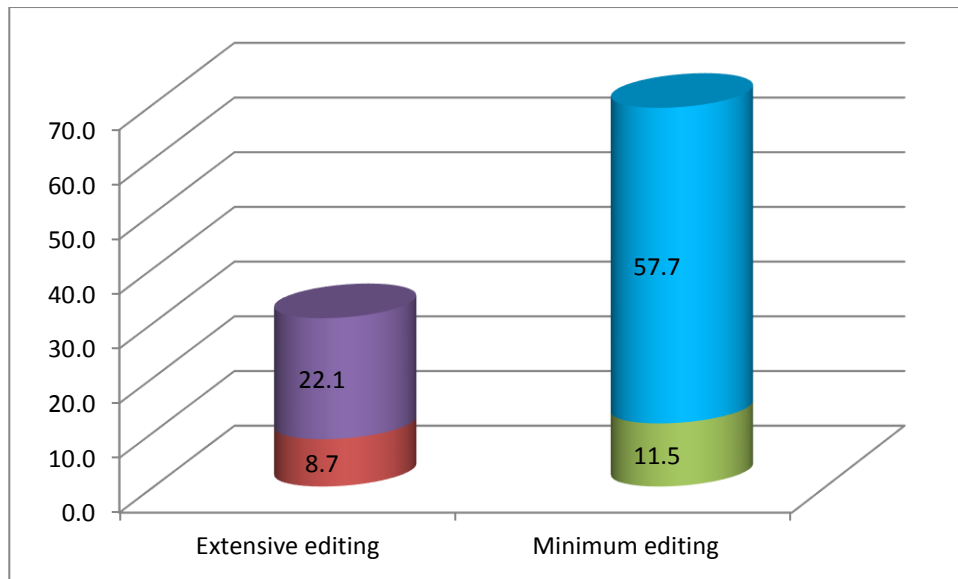


Figure 4.54: Degree of editorial effort in 230–239

69.2% (72 out of 104 sub-units) of the translation needed little or no editing.

4.4.3 Christian social and ecclesiastical theology (260–262)

The researcher used three sections in the 260-269 division to make up for unassigned sections in 230–239 and 290–299.

Figure 4.55 (page 170) gives an overview of each evaluation category, measured as a percentage.

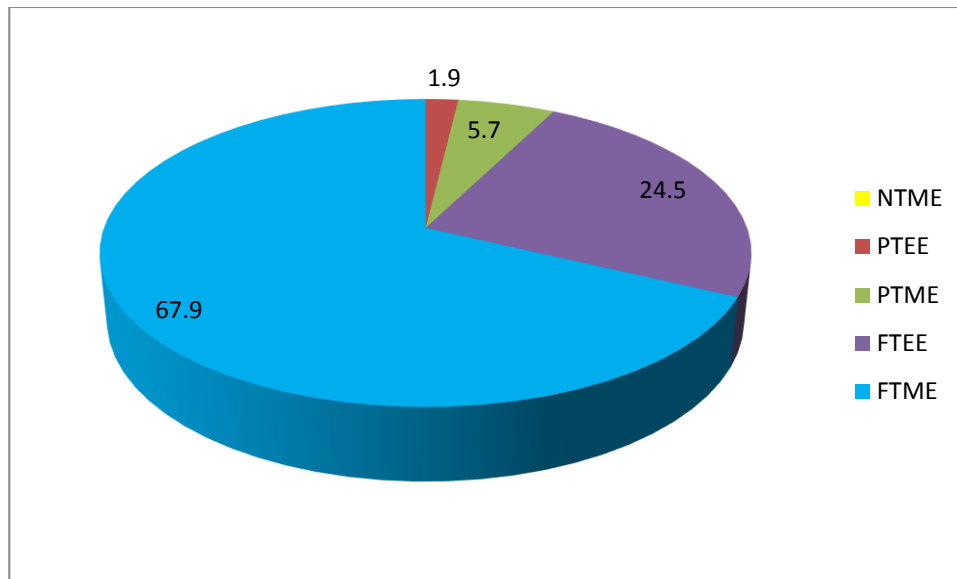


Figure 4.55: Christian social and ecclesiastical theology (260–262)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 1.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Class works that treat the ordination of women only in relation to its effect on the local church in 253; class legal acts of general councils in 262.9. Class nonlegal decrees on a specific subject with the subject, e.g., statements on original sin 233*
- *Klas werke **wat die koördinerings** van die vrou net in verhouding tot die uitwerking daarvan op die plaaslike kerk in 253 behandel; klas **wetlike dade** van algemene rade in 262.9. Klas **nonlegal** bevele op 'n spesifieke onderwerp met die onderwerp, bv **stellings** oor erfsonde 233*

Sub-units labelled PTME made up 5.7% of the total. Examples of words not translated by Google Translate are:

- *Irreligion*
- *Standard* (again)

Sub-units labelled FTEE made up 24.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Attitude of Christianity and Christian church toward and influence on secular matters, attitude toward other religions, interreligious relations</i> • <i>Church government, organization, nature</i> • <i>e.g., Acts of the Holy See</i> | <ul style="list-style-type: none"> • <i>Houding van die Christendom en Christelike kerk in die rigting en invloed op sekulêre aangeleenthede, houding teenoor ander godsdienste, interreligieuse verhoudinge</i> • <i>Kerk regering, organisasie, die natuur</i> • <i>bv Handeling van die Heilige Stoel</i> |
|--|--|

Sub-units labelled FTME made up 67.9% of the total with unnecessary use of or absence of articles.

Table 4.39 and Figure 4.56 (page 172) indicate Level of comprehensiveness.

Table 4.39: Level of comprehensiveness in 260–262

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	1	3	13	36
%	0	1.9	5.7	24.5	67.9

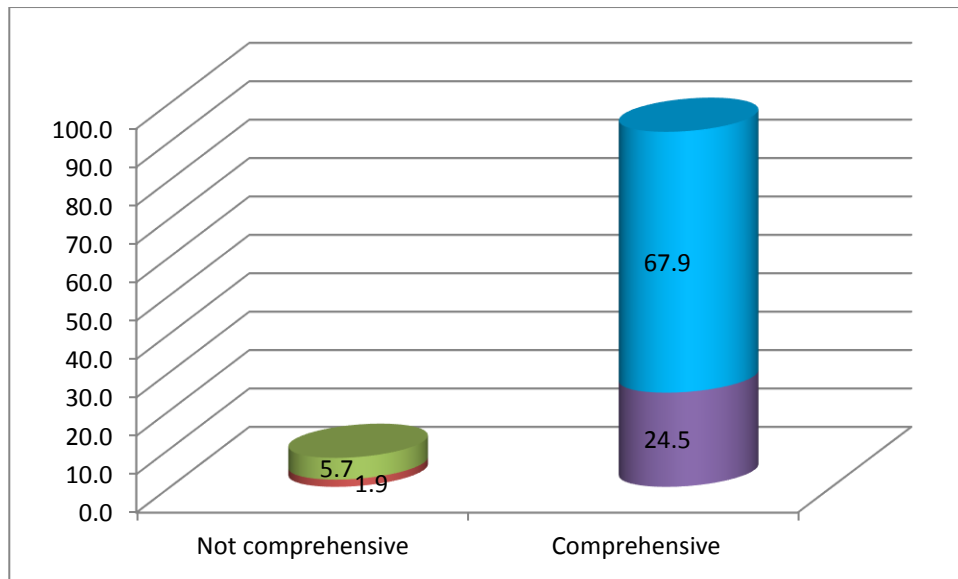


Figure 4.56: Level of comprehensiveness in 260–262

Google Translate translated 92.4% or 49 out of 53 sub-units.

Table 4.40 and Figure 4.57 (page 173) indicate Degree of editorial effort.

Table 4.40: Degree of editorial effort in 260–262

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	1	13	0	3	36
%	1.9	24.5	0	5.7	67.9

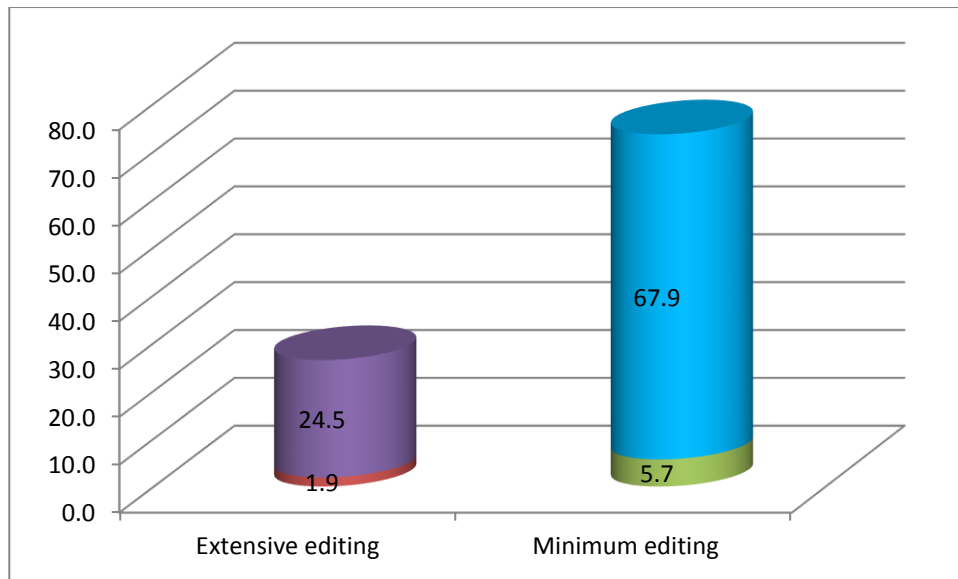


Figure 4.57: Degree of editorial effort in 260–262

73.6% (39 out of 53 sub-units) of the translation needs little or no editing.

4.4.4 Other religions (290–299)

The researcher used the whole 290-299 division. Sections 291 and 298 are unassigned.

Figure 4.58 (page 174) gives an overview of each evaluation category, measured as a percentage.

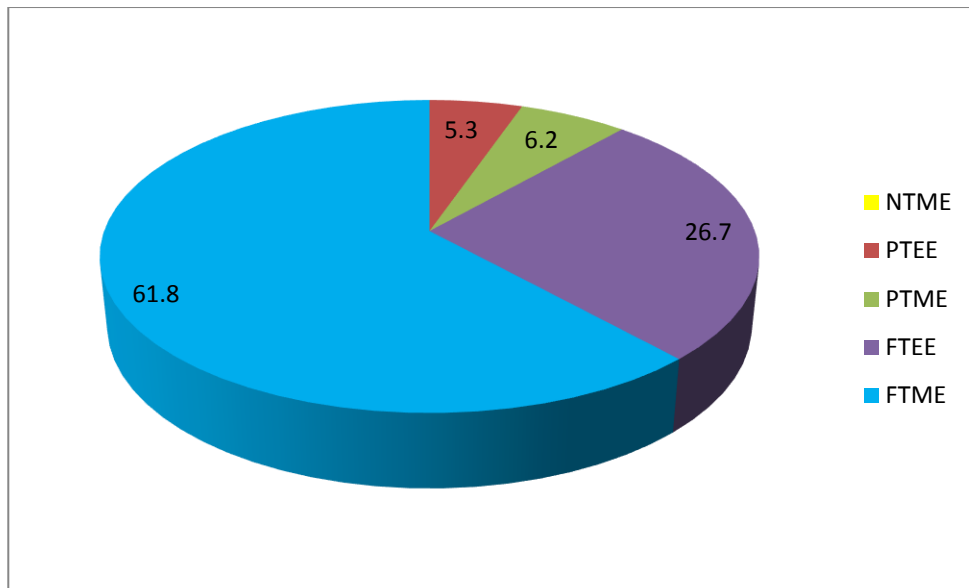


Figure 4.58: Other religions (290–299)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 5.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| • <i>294 Religions of Indic origin</i> | • <i>294 Godsdienste van Indic oorsprong</i> |
| <i>295 Zoroastrianism (Mazdaism, Parseeism)</i> | <i>295 Zoroastrisme (Mazdaism, Parseeism)</i> |
| <i>297 Islam, Babism, Bahai Faith</i> | <i>297 Islam, Babism, Bahai geloof</i> |
| <i>299 Religions not provided for elsewhere</i> | <i>299 Godsdienste nie waarvoor elders</i> |

Sub-units labelled PTME made up 6.2% of the total. Examples of words not translated by Google Translate are:

- *Edition* (again)
- *Standard* (again)
- *Indic*
- *Mission*
- *Cabalistic*
- *Babism*

Sub-units labelled FTEE made up 26.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| • <i>Limited to specific religions other than Christianity</i> | • <i>Beperk tot ander as die Christendom spesifieke godsdienste</i> |
| • <i>Class comprehensive works on religious education, religious education to inculcate religious faith and practice in 292</i> | • <i>Klas omvattende werke op godsdienstige opvoeding, godsdienstige onderwys aan godsdienstige geloof en praktyk in 292 kweek</i> |
| • <i>Add to base number 292 the numbers following 20 in 201–209, e.g., organizations 292.6</i> | • <i>Voeg by basis getal 292 die nommers volgende 20 in 201–209, bv organisasies 292.6</i> |

Sub-units labelled FTME made up 61.8% of the total with unnecessary use of or absence of articles.

Table 4.41 (page 176) and Figure 4.59 (page 176) indicate Level of comprehensiveness.

Table 4.41: Level of comprehensiveness in 290–299

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	12	14	60	139
%	0	5.3	6.2	26.7	61.8

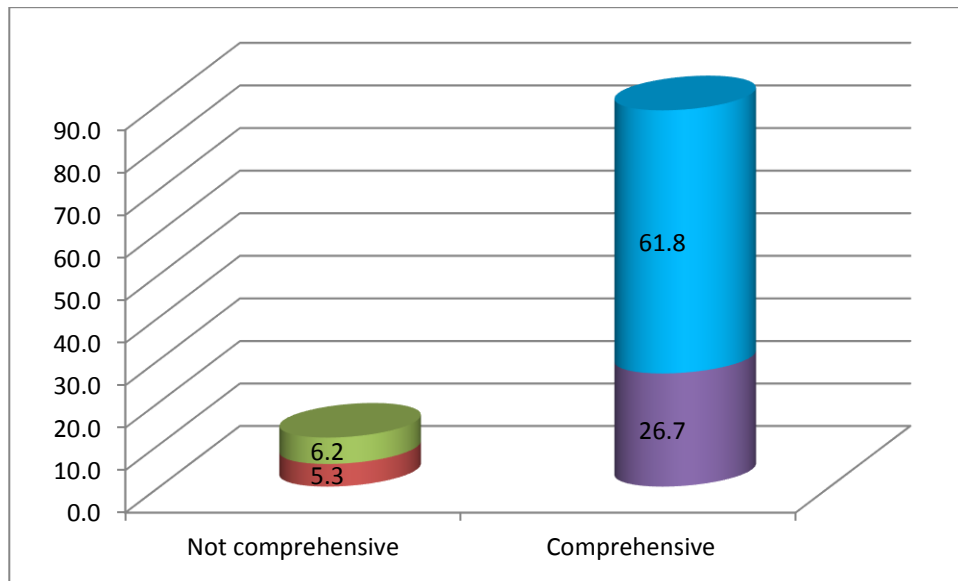


Figure 4.59: Level of comprehensiveness in 290–299

Google Translate translated 88.5% or 199 out of 225 sub-units.

Table 4.42 and Figure 4.60 (page 177) indicate Degree of editorial effort.

Table 4.42: Degree of editorial effort in 290–299

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	12	60	0	14	139
%	5.3	26.7	0	6.2	61.8

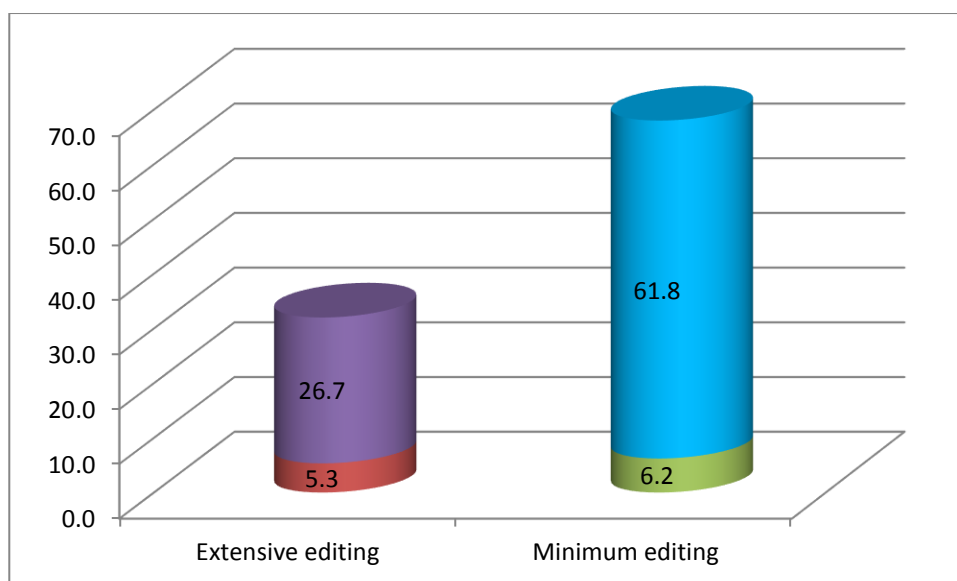


Figure 4.60: Degree of editorial effort in 290-299

68% (153 out of 225 sub-units) of the translation needed little or no editing.

4.4.5 Summary of the 200 main class

Table 4.43 presents a summary of this class.

Table 4.43: Summary of the 200 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
230-239	104	79.8	290-299	225	68
290-299	225	88.5	230-239	104	69.2
200-209	75	89.4	260-262	53	73.6
260-262	53	92.4	200-209	75	74.7
Average %		87.5	Average %		71.4

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

All four units have a comprehensiveness of 75% or more which indicates that the translations were comprehensive, averaging 87.5%, the highest comprehensiveness score.

In all four units 66.7% or more of the translation needs little or no editing, averaging 71.4% which indicates minimum editorial effort.

4.5 The 300 main class

This main class does not have any unassigned divisions. The researcher used all divisions except 310 to 319 which consist of either short sections of general statistics of certain geographic areas (310, 314–319) or unassigned sections (311–313). The researcher used only some sections per division – chosen at random because the main class consists of a variety of subject matter – to decide if the results would be different from the two previous main classes where he evaluated only some divisions.

4.5.1 Social sciences (300–309)

The researcher used the whole 300–309 division, introductory to the main class. It contains the summary for the whole main class, but does not resemble Table 1 (Standard subdivisions). Sections 308 and 309 are unassigned.

Figure 4.61 (page 179) gives an overview of each evaluation category, measured as a percentage.

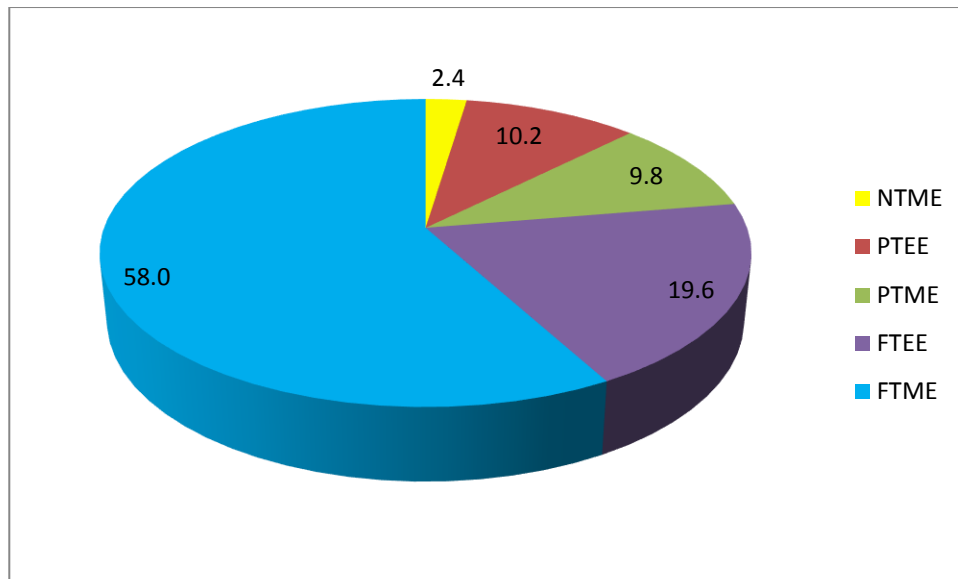


Figure 4.61: Social sciences (300–309)

Sub-units labelled NTME made up 2.4% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Boys*
- *Girls*
- *Men*
- *Women*

Sub-units labelled PTEE made up 10.2% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Including binuclear family, shared custody; separated and divorced men;</i> | <ul style="list-style-type: none"> • <i>Insluitend binucleaire familie, gedeel bewaring; geskei en geskei mans;</i> |
| <ul style="list-style-type: none"> • <i>See also 392.4 for the customs of mate selection; also 646.7 for practical guidance on choosing a</i> | <ul style="list-style-type: none"> • <i>Sien ook 392.4 vir die gebruike van mate seleksie; ook 646.7 vir praktiese leiding oor die keuse</i> |

*mate and dating behaviour ...
306.874; class alteration of
marriage arrangements in 306.88*

*van 'n maat en **dateer** gedrag ...
306.874; klas verandering van
die **huwelik reëlings** in 306.88*

Sub-units labelled PTME made up 9.8% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Nonliterate*
- *Table* (again)
- *Human*
- *Ecofeminism*
- *Sociobiology*

Sub-units labelled FTEE made up 19.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class family in 306.85. Class bullying in a specific institution with the institution, e.g., bullying in school 371.5*
- *Klas familie in 306.85. Klas **boelie** in 'n spesifieke instelling met die instelling, bv **boelie** in die skool 371.5*
- *For social interaction, see 302; for factors affecting social behavior, see 304*
- *Vir sosiale interaksie, sien 302; **vir faktore wat sosiale gedrag**, sien 304*
- *Class media in 302.23; class sign languages for deaf people in 419; class comprehensive works on means of verbal and nonverbal communication in 302.23*
- *Klas media in 302.23; klas **teken tale** vir dowes in 419; klas omvattende werk op die gebruik van verbale en nie-verbale kommunikasie in 302.23*
- *Including signboards, signs; digital media; print media; motion*
- *Insluitend **borde**, tekens; digitale media; gedrukte media;*

*pictures, radio, television;
telephony and telegraphy*

*rolprente, radio, televisie,
telefonie en telegrafie*

Sub-units labelled FTME made up 58% of the total with unnecessary use of or absence of articles.

Table 4.44 and Figure 4.62 indicate Level of comprehensiveness.

Table 4.44: Level of comprehensiveness in 300–309

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	14	60	58	116	342
%	2.4	10.2	9.8	19.6	58

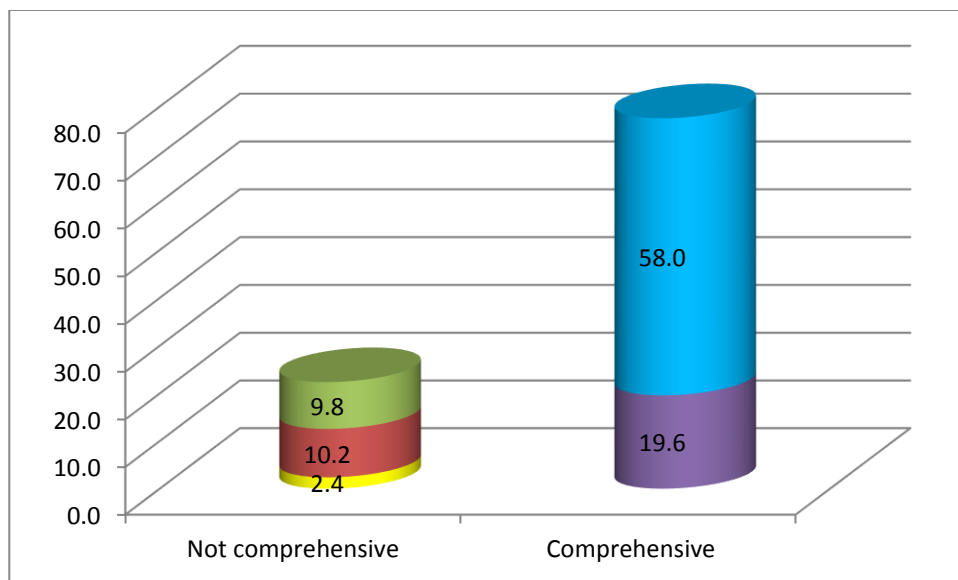


Figure 4.62: Level of comprehensiveness in 300–309

Google Translate translated 77.6% or 458 out of 590 sub-units.

Table 4.45 (page 182) and Figure 4.63 (page 182) indicate Degree of editorial effort.

Table 4.45: Degree of editorial effort in 300–309

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	60	116	14	58	342
%	10.2	19.6	2.4	9.8	58

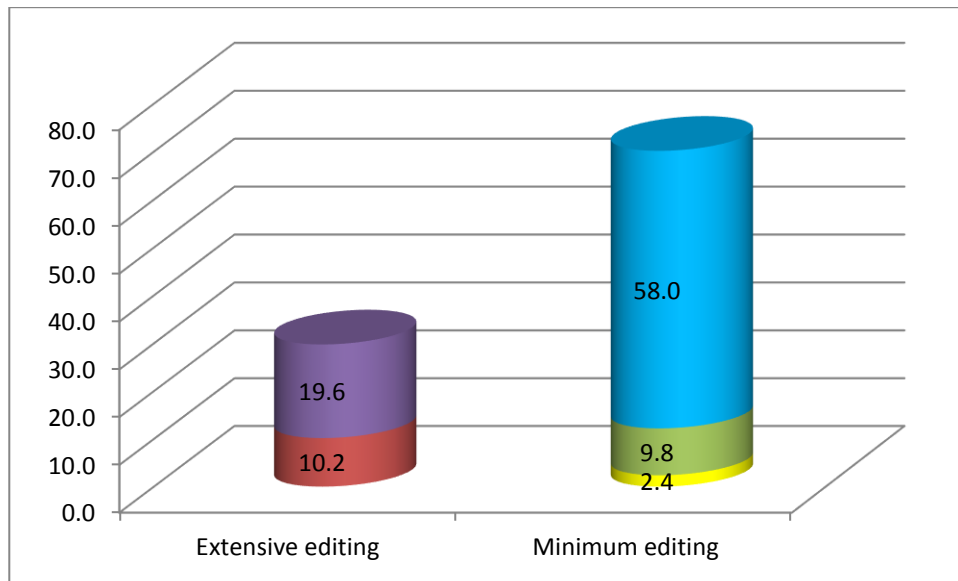


Figure 4.63: Degree of editorial effort in 300–309

70.2% (414 out of 590 sub-units) of the translation needed little or no editing.

4.5.2 Political science (Politics and government) (320 and 323)

The researcher used only the 320 (introductory) and 323 sections. Section 329 is unassigned.

Figure 4.64 (page 183) gives an overview of each evaluation category, measured as a percentage.

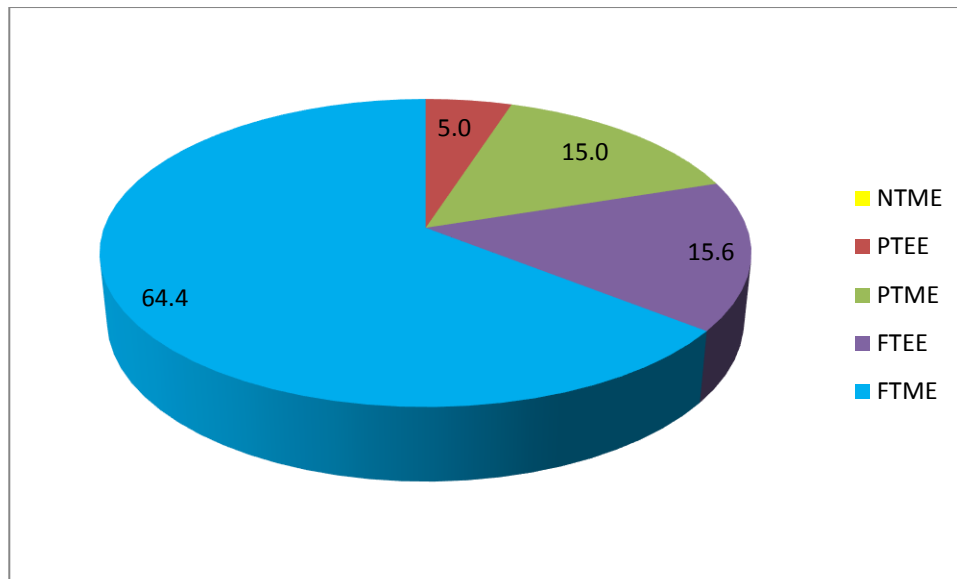


Figure 4.64: Political science (Politics and government) (320 and 323)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Add to base number 320.4 notation 1–9 from Table 2, e.g., structure of government in Cuba 320.47291*
- *Voeg by basis **getal** 320.4 notasie 1–9 van **Table** 2, bv struktuur van die regering in Kuba 320.47291*
- *Class a specific aspect of policy making with the aspect, e.g., policy making on religion 322, legislative lobbying 328.3*
- *Klas 'n spesifieke aspek van beleidmaking met die aspek, bv **beleidmakende** op godsdiens 322, wetgewende **lobbying** 328.3*

Sub-units labelled PTME made up 15% of the total. Examples of words not translated by Google Translate are:

- *Civics*
- *Standard* (again)
- *Geographic* (again)
- *Table* (again)
- *Fascism*
- *Nondominant*

Sub-units labelled FTEE made up 15.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Class analysis of systems by which government is structured in 321; class systems of selecting chief executives in 324; class legislative control and oversight of executive branch in 328.3</i> | <ul style="list-style-type: none"> • <i>Klas analise van stelsels waarvolgens die regering is gestruktureer in 321; klas stelsels te kies uitvoerende hoofde in 324; klas wetgewende beheer en toesig van die uitvoerende tak in 328.3</i> |
| <ul style="list-style-type: none"> • <i>For relation of the state to organized groups other than political parties and related organizations, see 322; for relation of the state to political parties and related organizations, see 324; for human rights law, see 341.4; for civil rights law, see 342.08</i> | <ul style="list-style-type: none"> • <i>Vir verhouding van die staat om anders as politieke partye en verwante organisasies georganiseerde groepe, sien 322; vir die verhouding van die staat om politieke partye en verwante organisasies, sien 324; vir menseregte, sien 341.4; vir burgerlike reg regte, sien 342.08</i> |

Sub-units labelled FTME made up 64.4% of the total with unnecessary use of or absence of articles.

Table 4.46 (page 185) and Figure 4.65 (page 185) indicate Level of comprehensiveness.

Table 4.46: Level of comprehensiveness in 320 and 323

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	8	24	25	103
%	0	5	15	15.6	64.4

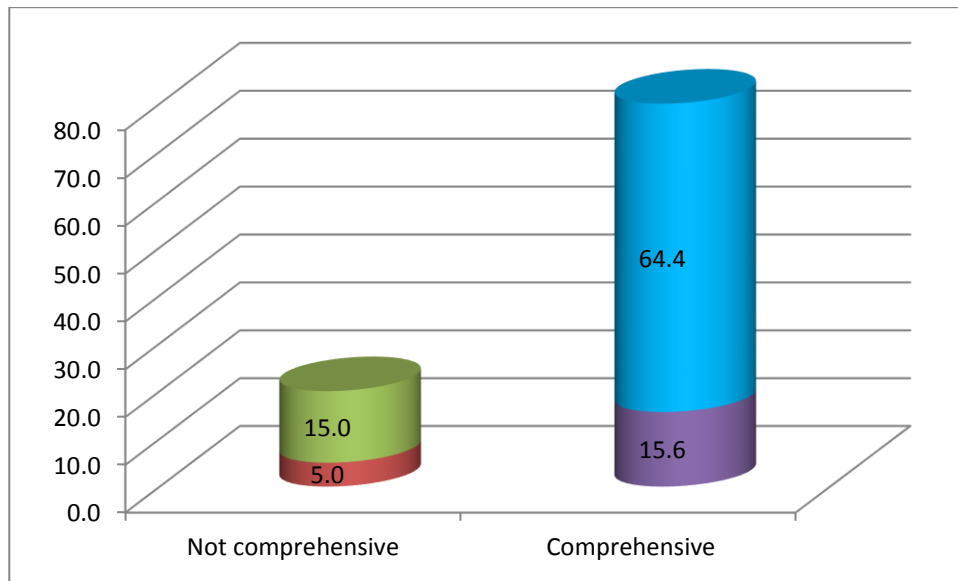


Figure 4.65: Level of comprehensiveness in 320 and 323

Google Translate translated 80% or 128 out of 160 sub-units.

Table 4.47 and Figure 4.66 (page 186) indicate Degree of editorial effort.

Table 4.47: Degree of editorial effort in 320 and 323

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	8	25	0	24	103
%	5	15.6	0	15	64.4

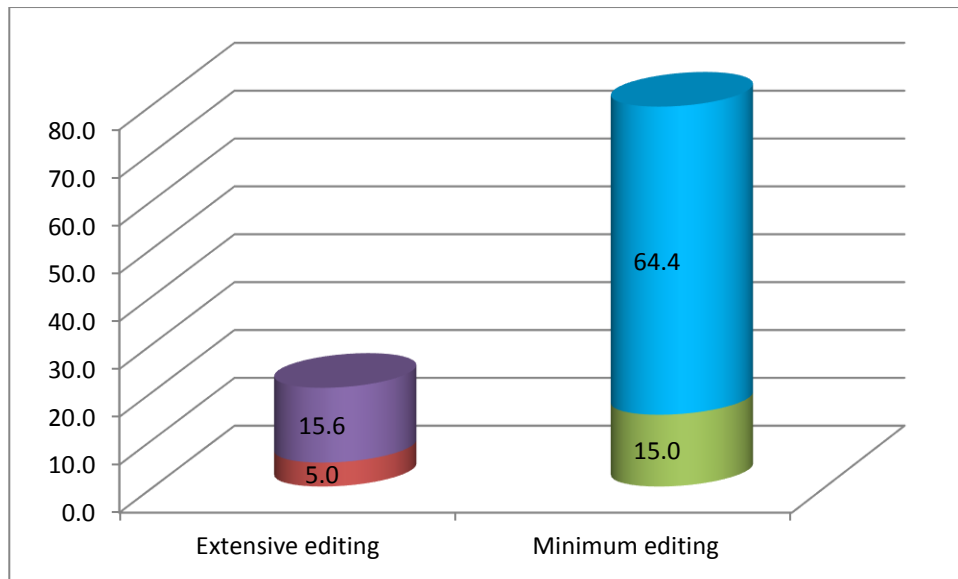


Figure 4.66: Degree of editorial effort in 320 and 323

79.4% (127 out of 160 sub-units) of the translation needed little or no editing.

4.5.3 Economics (330 and 336)

The researcher used only the 330 (introductory) and 336 sections. The 330–339 division does not have unassigned sections.

Figure 4.67 (page 187) gives an overview of each evaluation category, measured as a percentage.

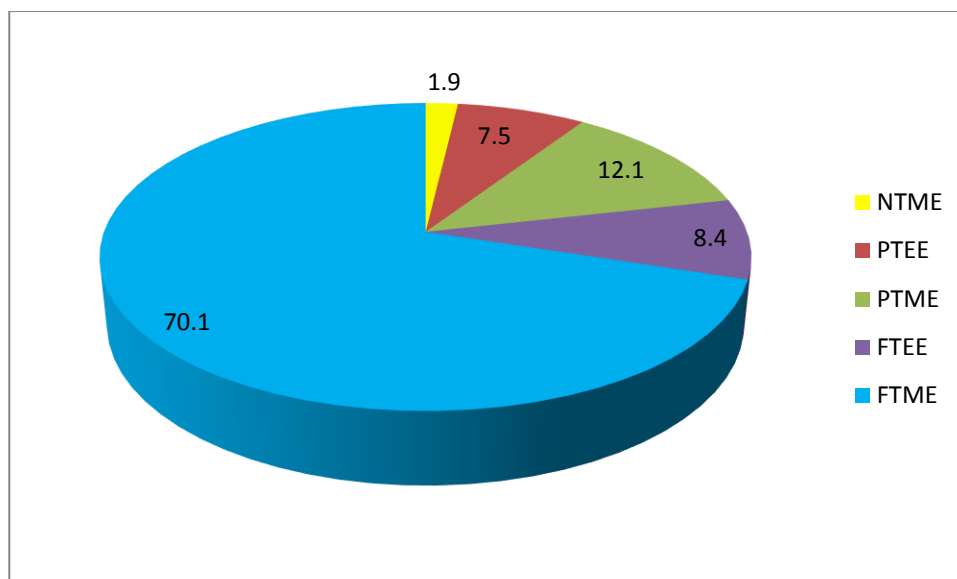


Figure 4.67: Economics (330 and 336)

Sub-units labelled NTME made up 1.9% of the total. Examples of words not translated by Google Translate are:

- *Management* (again)
- *Systems* (again)

Sub-units labelled PTEE made up 7.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>Add to base number 330.91 the numbers following —1 in notation 11–19 from Table 2, e.g., economic situation and conditions in developing countries 330.9172; however, do not add notation 01–09 from Table 1 for standard subdivisions</i> | <ul style="list-style-type: none"> • <i>Voeg by basis getal 330.91 die getalle volgende -1 in notasie 11–19 van Table 2, bv <i>ekonomiese situasie en omstandighede in ontwikkelende lande</i> 330.9172; egter nie notasie 01–09 voeg by Tabel 1 vir standaard onderafdelings</i> |
| <ul style="list-style-type: none"> • <i>Add to base number 336 notation 4–9 from Table 2, e.g., public</i> | <ul style="list-style-type: none"> • <i>Voeg by basis getal 336 notasie 4–9 van Table 2, bv, openbare</i> |

*finance of Australia 336.94;
however, class general works on
public finance by governmental
level in 336*

*finansies van Australië 336.94;
egter die klas algemene werk
op openbare finansies deur
regeringsvlak in 336*

Sub-units labelled PTME made up 12.1% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Real*
- *Nontax*
- *Intragovernmental*
- *Poll*
- *Variant*

Sub-units labelled FTEE made up 8.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|--|
| <ul style="list-style-type: none">• <i>Unless other instructions are given, observe the following table of preference, e.g., finance as an economic factor in international economics 332 (not 337):</i>• <i>Class here economic geography, economic history; works describing situation and conditions at both macroeconomic and microeconomic levels</i>• <i>.02 Revenue</i> | <ul style="list-style-type: none">• <i>Tensy ander instruksies gegee word, in ag te neem die volgende tabel van voorkeur, bv, finansies as 'n ekonomiese faktor in die internasionale ekonomie 332 (nie 337):</i>• <i>Klas hier ekonomiese geografie, ekonomiese geskiedenis; werk beskryf situasie en toestande by beide makro-ekonomiese en mikro-ekonomiese vlakke</i>• <i>.02 Inkomstediens</i> |
|--|--|

Sub-units labelled FTME made up 70.1% of the total with unnecessary use of or absence of articles.

Table 4.48 and Figure 4.68 indicate Level of comprehensiveness.

Table 4.48: Level of comprehensiveness in 330 and 336

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	8	13	9	75
%	1.9	7.5	12.1	8.4	70.1

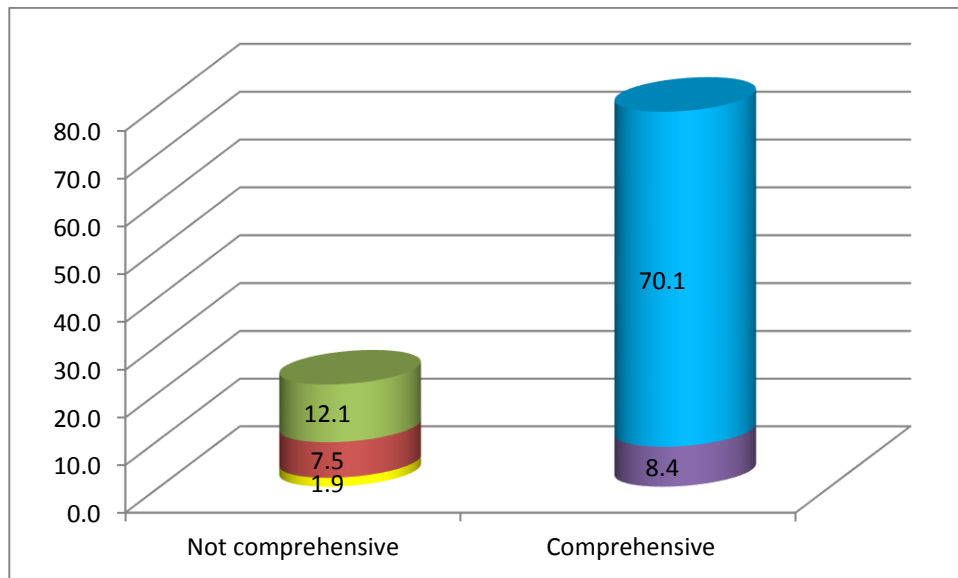


Figure 4.68: Level of comprehensiveness in 330 and 336

Google Translate translated 78.5% or 84 out of 107 sub-units.

Table 4.49 (page 190) and Figure 4.69 (page 190) indicate Degree of editorial effort.

Table 4.49: Degree of editorial effort in 330 and 336

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	8	9	2	13	75
%	7.5	8.4	1.9	12.1	70.1

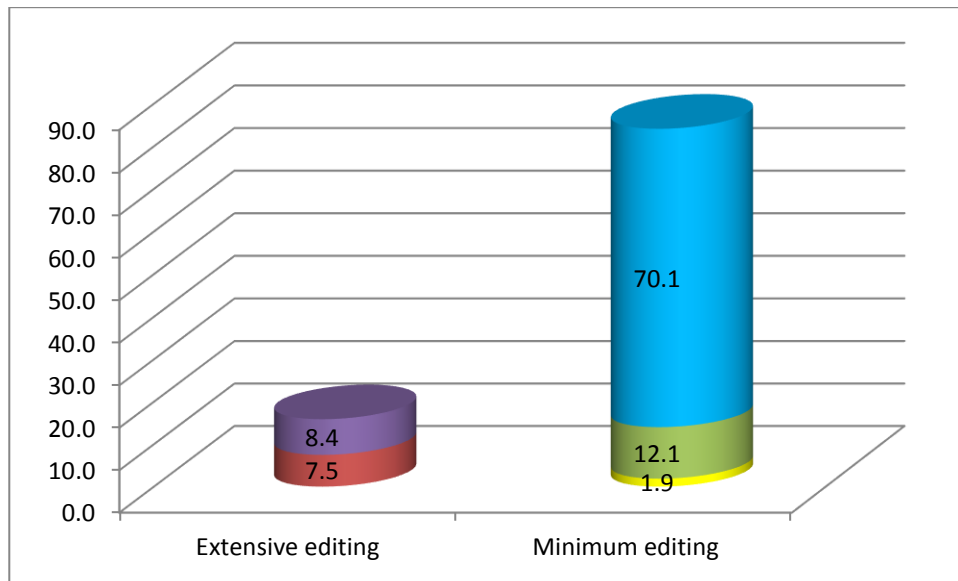


Figure 4.69: Degree of editorial effort in 330 and 336

84.1% (90 out of 107 sub-units) of the translation needed little or no editing.

4.5.4 Law (340–342)

The researcher used only the 340 (introductory) and 341 and 342 sections of the 340–349 division. The division does not have unassigned sections.

Figure 4.70 (page 191) gives an overview of each evaluation category, measured as a percentage.

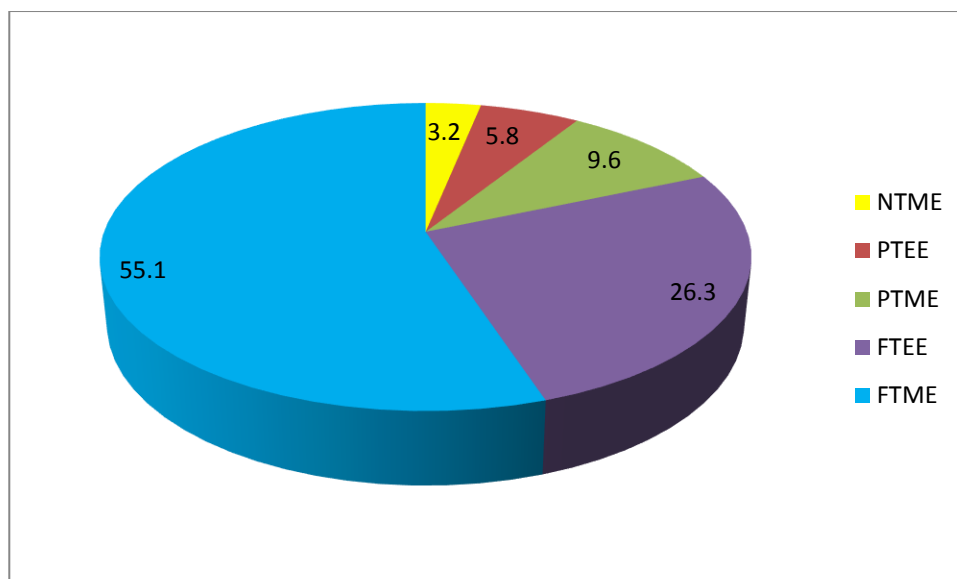


Figure 4.70: Law (340–342)

Sub-units labelled NTME made up 3.2% of the total. Examples of words not translated, or translated incorrectly into Dutch by Google Translate, are:

- *Miscellany* (again)
- *Management* (again)
- *Law*
- *Rechtsgebieden*

Sub-units labelled PTEE made up 5.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Class professional ethics of legal personnel in 174. Class works that emphasize procedures of work performed by legal personnel with the subject without adding notation 023 from Table 1, e.g., works that emphasize procedures of</i> | <ul style="list-style-type: none"> • <i>Klas professionele etiek van wetlike personeel in 174. klas werke wat prosedures van werk wat deur wetlike personeel met die onderwerp beklemtoon sonder toevoeging notasie 023 van Table 1, bv werke wat prosedures ... van 'n</i> |
|--|--|

... a lawsuit 347

- Add to base number 342.2 notation 3–9 from Table 2, e.g., constitutional and administrative law of European Union 342.24; then add further as follows:

regsgeding 347 beklemtoon

- Voeg by basis **getal** 342.2 notasie 3–9 van **Table 2**, bv, grondwetlike en administratiewe wet van die Europese Unie 342.24; **verder en voeg dan soos volg:**

Sub-units labelled PTME made up 9.6% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Table* (again)
- *Regional*
- *Pacific*
- *Semisovereign*

Sub-units labelled FTEE made up 26.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class here legal personnel, nature of duties, characteristics of profession*
- *Klas hier **wetlike personeel**, aard van pligte, eienskappe van beroep*
- *Body of rules governing choice of jurisdiction in cases in private law that fall under laws of two or more such jurisdictions*
- ***Liggaam** van reëls keuse van jurisdiksie in gevalle private wet wat onder die wette van twee of meer sulke jurisdiksies val*
- *For domestic conflict of laws, see 342. For a specific aspect of conflict of laws and of private international law not provided for here, see the aspect in ...*
- *Vir **huishoudelike** konflik van wette, sien 342. Vir 'n spesifieke aspek van konflik van wette en internasionale privaatreë **nie voorsien hier** sien die aspek in ...*

Sub-units labelled FTME made up 55.1% of the total with some minor word order errors (for example, “hulpbronne territoriale”) and unnecessary use of or absence of articles.

Table 4.50 and Figure 4.71 indicate Level of comprehensiveness.

Table 4.50: Level of comprehensiveness in 340–342

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	5	9	15	41	86
%	3.2	5.8	9.6	26.3	55.1

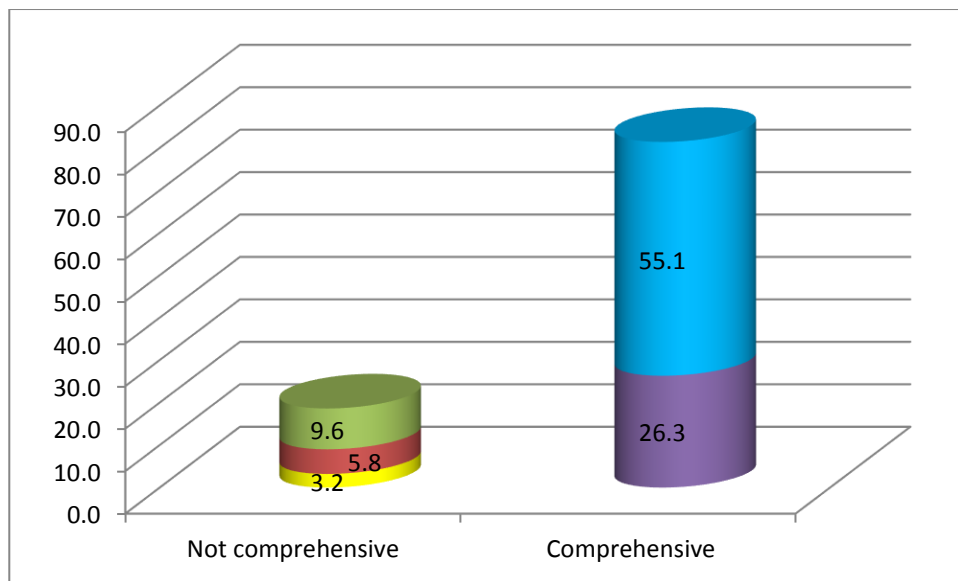


Figure 4.71: Level of comprehensiveness in 340–342

Google Translate translated 81.4% or 127 out of 156 sub-units.

Table 4.51 (page 194) and Figure 4.72 (page 194) indicate Degree of editorial effort.

Table 4.51: Degree of editorial effort in 340–342

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	9	41	5	15	86
%	5.8	26.3	3.2	9.6	55.1

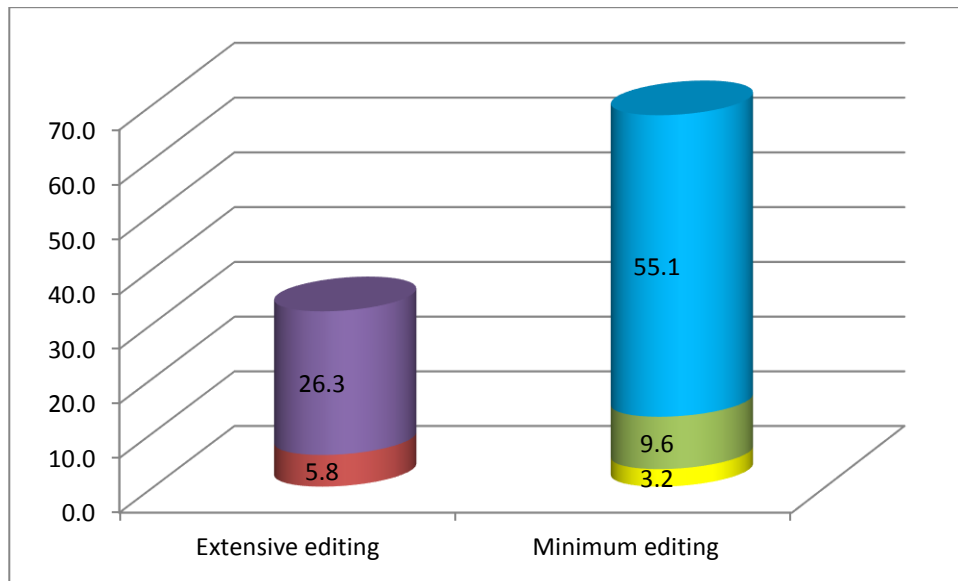


Figure 4.72: Degree of editorial effort in 340–342

67.9% (106 out of 156 sub-units) of the translation needed little or no editing.

4.5.5 Public administration and military science (350–353)

The researcher used only the 350 (caption only) and 351–353 sections. The caption is the heading for the division and has to be included. The 350–359 division does not have unassigned sections.

Figure 4.73 (page 195) gives an overview of each evaluation category, measured as a percentage.

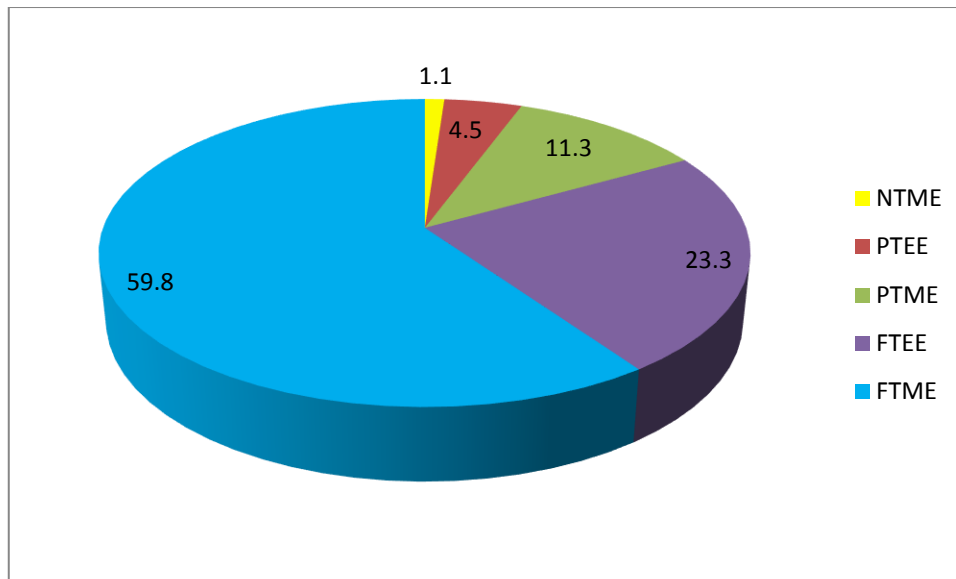


Figure 4.73: Public administration and military science (350–353)

Sub-units labelled NTME made up 1.1% of the total. An example of a word not translated by Google Translate is:

- *Management* (again and repeatedly)

Sub-units labelled PTEE made up 4.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|---|
| <ul style="list-style-type: none"> • <i>Class relation of executive branch to other branches, works that deal comprehensively with more than one branch of government in 320.4; class ... plus notation 068 from Table 1</i> | <ul style="list-style-type: none"> • <i>Klas verhouding van die uitvoerende tak ander takke, werk wat te doen het volledig met meer as een tak van die regering in 320.4; klas ... plus notasie 068 van Table 1</i> |
| <ul style="list-style-type: none"> • <i>Do not use for collected biographies of chief executives; class in 930–990 plus notation 009 from table under 930–990, e.g., collected biography of kings and queens ... plus</i> | <ul style="list-style-type: none"> • <i>Moet nie gebruik vir ingesamel biografieë van uitvoerende hoofde; klas 930–990 plus notasie 009 van die tafel onder 930–990, bv ingesamel biografie van die konings en</i> |

notation 092 from Table 1

*koninginne ... plus notasie 092
van **Table 1***

Sub-units labelled PTME made up 11.3% of the total. Examples of words not translated by Google Translate are:

- *Serial (again)*
- *Standard (again)*
- *Cabinets*
- *Property*
- *Utilities*
- *Supply management*

Sub-units labelled FTEE made up 23.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| • <i>Class here agencies supporting and controlling primary education, supporting and controlling secondary education</i> | • <i>Klas hier agentskappe ondersteun en beheer primêre onderwys, te ondersteun en te beheer sekondêre onderwys</i> |
| • <i>Including disposal of the dead</i> | • <i>Insluitend die verwydering van die dooie</i> |
| • <i>Class management of disaster relief in 363.348068; class management of fire departments in ...</i> | • <i>Klas bestuur van rampverligting in 363.348068; klas bestuur van vuur departemente in ...</i> |
| • <i>For local school boards, see 379.1</i> | • <i>Vir die plaaslike skool borde, sien 379.1</i> |

Sub-units labelled FTME made up 59.8% of the total with unnecessary use of or absence of articles.

Table 4.52 and Figure 4.74 indicate Level of comprehensiveness.

Table 4.52: Level of comprehensiveness in 350–353

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	3	12	30	62	159
%	1.1	4.5	11.3	23.3	59.8

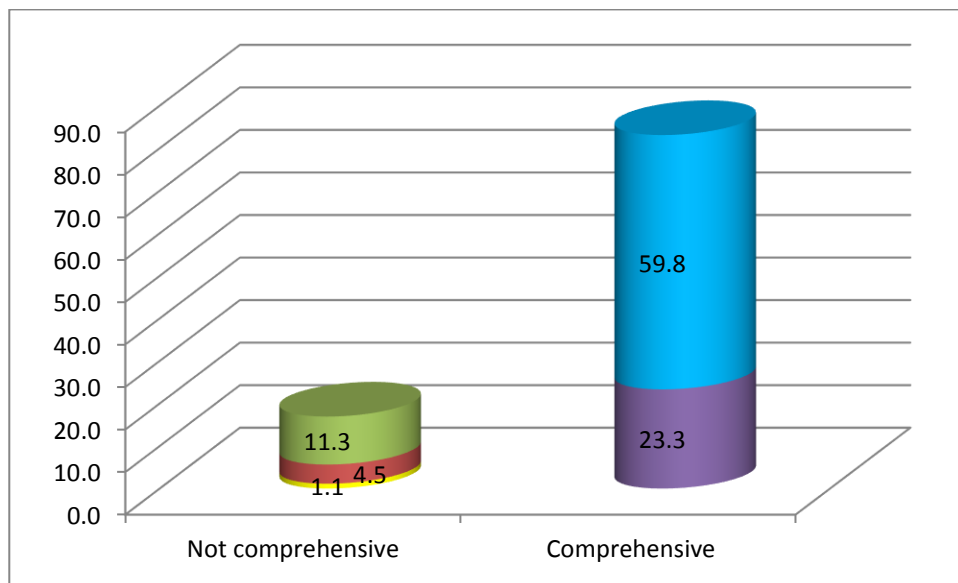


Figure 4.74: Level of comprehensiveness in 350–353

Google Translate translated 83.1% or 221 out of 266 sub-units.

Table 4.53 (page 198) and Figure 4.75 (page 198) indicate Degree of editorial effort.

Table 4.53: Degree of editorial effort in 350–353

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	12	62	3	30	159
%	4.5	23.3	1.1	11.3	59.8

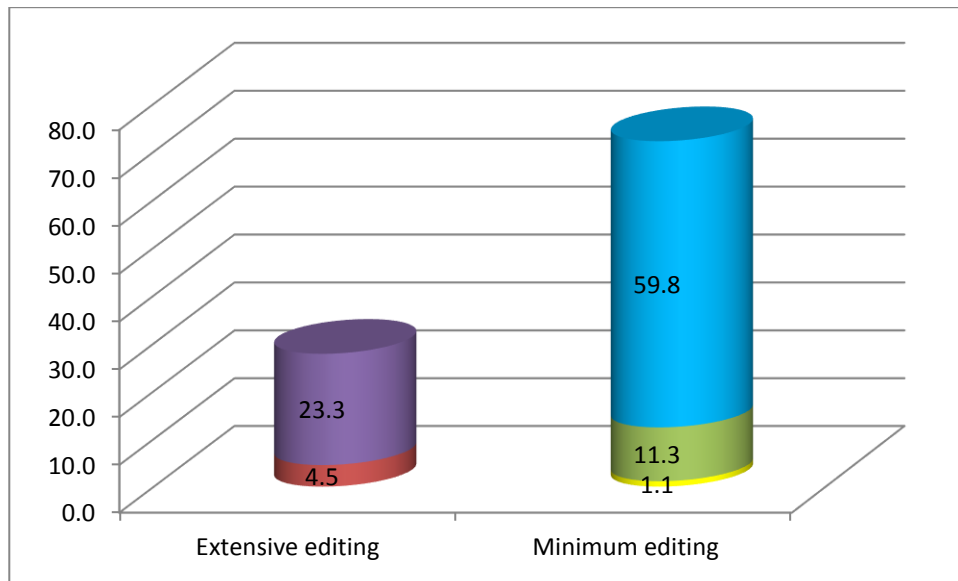


Figure 4.75: Degree of editorial effort in 350–353

72.2% (192 out of 266 sub-units) of the translation needs little or no editing.

4.5.6 Social problems and services; associations (360, 361 and 364)

The researcher used only the 360, 361 and 364 sections. The 360–369 division does not have unassigned sections.

Figure 4.76 (page 199) gives an overview of each evaluation category, measured as a percentage.

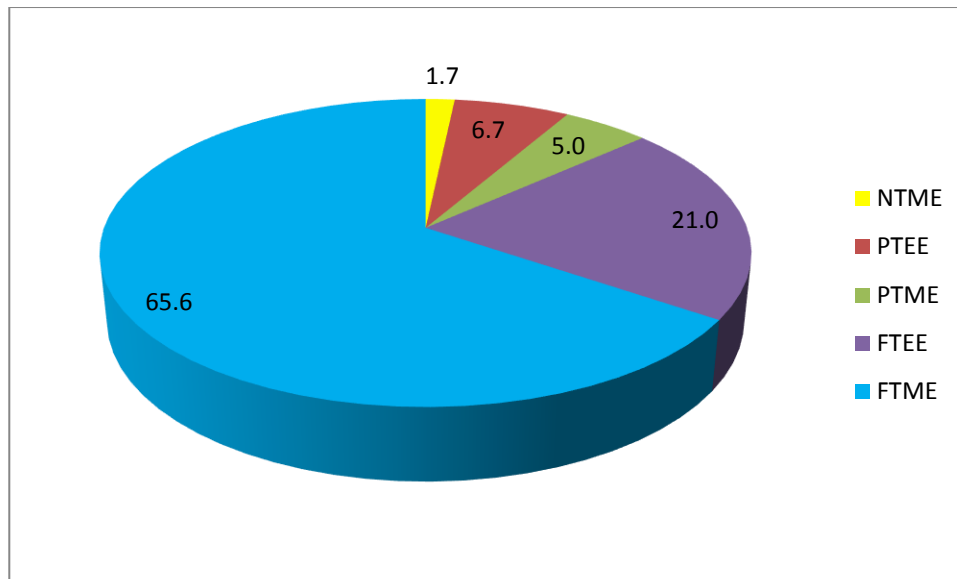


Figure 4.76: Social problems and services; associations (360, 361 and 364)

Sub-units labelled NTME made up 1.7% of the total. Examples of words not translated by Google Translate are:

- *Men (again)*
- *Homicide*

Sub-units labelled PTEE made up 6.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>Including genocide; sex offenses; abduction, kidnapping, taking and holding of hostages; other violent offenses against the person (e.g., robbery, assault and battery); offenses against reputation and honor; stalking</i> | <ul style="list-style-type: none"> • <i>Insluitende volksmoord; seksuele misdrywe; ontvoering, ontvoering, neem en te hou gyselaars; ander gewelddadige misdade teen die persoon (bv, roof, aanranding en battery); misdade teen reputasie en eer; agtervolging</i> |
| <ul style="list-style-type: none"> • <i>Probation and suspended sentence ... noninstitutional</i> | <ul style="list-style-type: none"> • <i>Proef en opgeskorte vonnis ... noninstitutional boetes</i> |

penalties

Sub-units labelled PTME made up 5% of the total. Examples of words not translated by Google Translate are:

- *Preelinquents*
- *Standard* (again)
- *Nonhistoric*
- *Lynching*

Sub-units labelled FTEE made up 21% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class capital punishment in 364.66; class welfare services to prisoners, reform of penal institutions, services to prisoners to prepare them for parole in 365*
- *Klas doodstraf in 364.66; **welsyn klas dienste aan gevangenes**, die hervorming van **strafbare** instellings dienste aan gevangenes om hulle voor te berei vir parool in 365*
- *Class elder abuse as a social problem in 362.6*
- *Klas **ouderling** misbruik as 'n sosiale probleem in 362.6*
- *Class offenses against church law in 262.9; class social services to victims of crimes in 362.88; class investigation of specific types of offenses in 363.25; class drug traffic in 363.45;*
- *Klas misdade teen die **kerk die reg** in 262.9; klas maatskaplike dienste aan slagoffers van misdade in 362.88; klas ondersoek van spesifieke tipes oortredings in 363.25; klas **dwelms verkeer** in 363.45;*

Sub-units labelled FTME made up 65.6% of the total with unnecessary use of or absence of articles.

Table 4.54 and Figure 4.77 indicate Level of comprehensiveness.

Table 4.54: Level of comprehensiveness in 360, 361 and 364

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	8	6	25	78
%	1.7	6.7	5	21	65.6

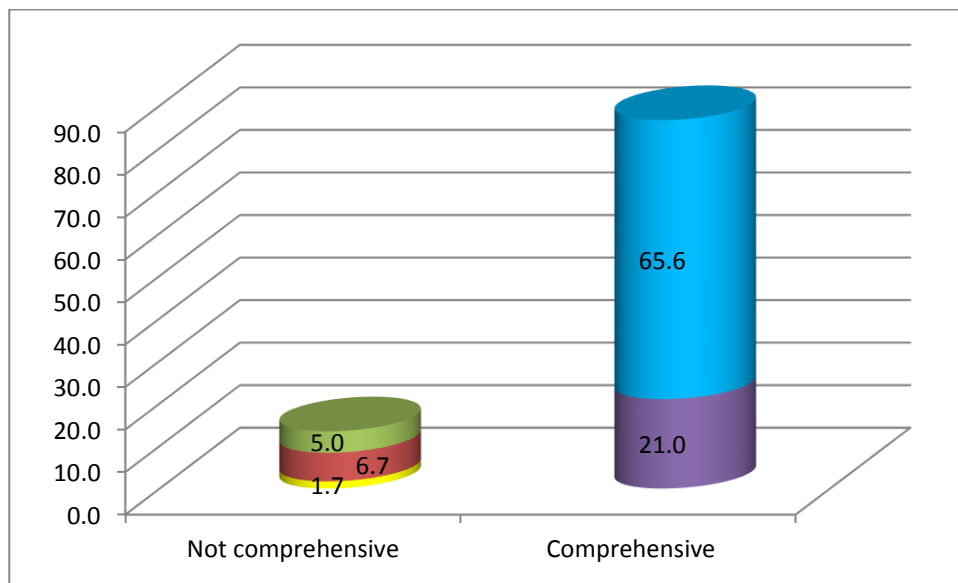


Figure 4.77: Level of comprehensiveness in 360, 361 and 364

Google Translate translated 86.6% or 103 out of 119 sub-units.

Table 4.55 (page 202) and Figure 4.78 (page 202) indicate Degree of editorial effort.

Table 4.55: Degree of editorial effort in 360, 361 and 364

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	8	25	2	6	78
%	6.7	21	1.7	5	65.6

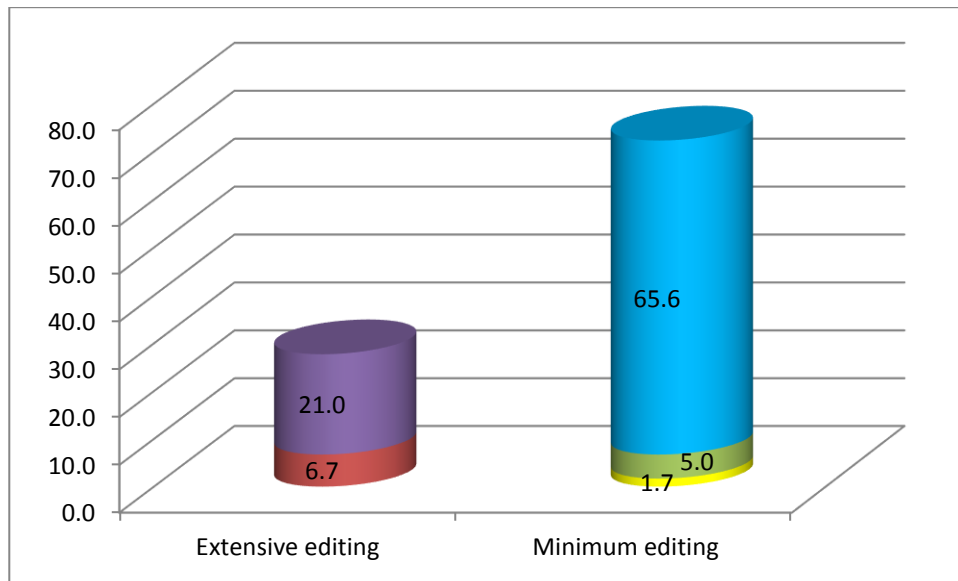


Figure 4.78: Degree of editorial effort in 360, 361 and 364

72.3% (86 out of 119 sub-units) of the translation needed little or no editing.

4.5.7 Education (370, 371 and 378)

The researcher used only the 370, 371 and 378 sections. The 370–379 division does not have unassigned sections.

Figure 4.79 (page 203) gives an overview of each evaluation category, measured as a percentage.

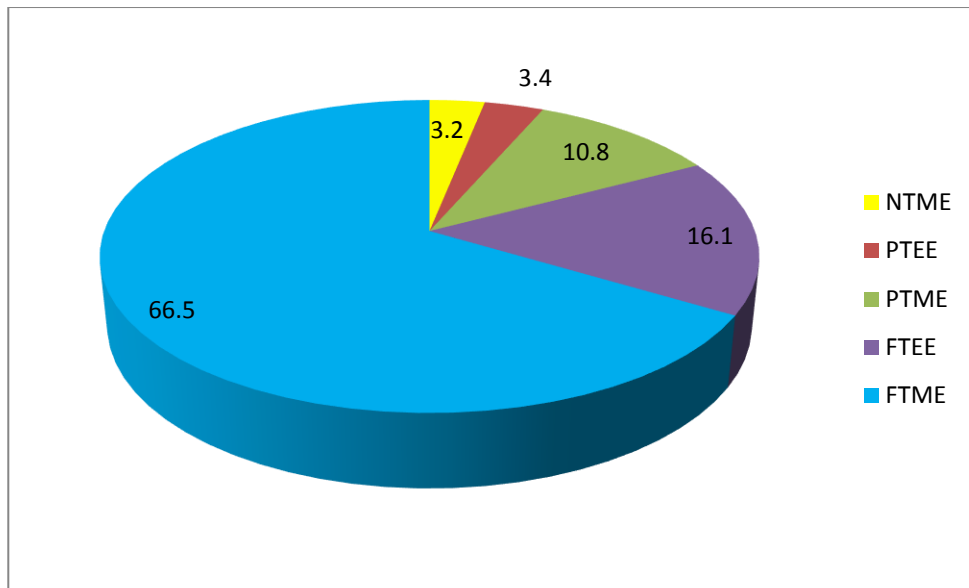


Figure 4.79: Education (370, 371 and 378)

Sub-units labelled NTME made up 3.2% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again and repeatedly)
- *Management* (again and repeatedly)

Sub-units labelled PTEE made up 3.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Including academic status; relation of teachers to school administration and nonteaching staff; performance contracting*
- *Including home instruction by educational personnel, monitorial system of education, Morrison plan, rote learning; Waldorf method; Montessori method; behavior modification methods; individualized instruction; tutoring; group teaching; lecture method; simulation; computer modeling and simulation; use of drama; use of theater*
- *Insluitende akademiese status; verhouding van die **onderwysers by die skool administrasie en nonteaching** personeel; prestasie kontraktering*
- *Insluitend **huis** instruksie deur opvoedkundige personeel, **vermanend** stelsel van onderwys, Morrison plan, **papegaaierk**; Waldorf-metode; Montessori metode; gedragsverandering metodes; geïndividualiseerde onderrig; **tutoring**; groep onderrig; lesingmetode; simulاسie; rekenaarmodellering en simulاسie; gebruik van drama; gebruik van teater*

Sub-units labelled PTME made up 10.8% of the total. Examples of words not translated by Google Translate are:

- *Table (again)*
- *Standard (again)*
- *Nonteaching*
- *Seatwork*

Sub-units labelled FTEE made up 16.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Unless other instructions are given, observe the following table of preference, e.g., special education at primary level 371.9 (not 372):*
- *Class on-the-job training, vocational training provided by industry in 331.25*
- *Including differential psychology; conscious mental processes and intelligence; cognition; personality and emotions; motivation to learn; perception, movement, psychological drives; creativity and imagination; psychological adjustment to education; effect of school education and environment on students*
- *Tensy ander instruksies gegee word, **in ag te neem** die volgende tabel van voorkeur, bv, spesiale onderwys op primêre vlak 371.9 (nie 372):*
- *Klas **op-die-werk**-opleiding, professionele opleiding wat deur die bedryf in 331.25*
- *Insluitende differensiale sielkunde; bewuste geestelike prosesse en intelligensie; kognisie; persoonlikheid en emosies; motivering om te leer; persepsie, beweging, **sielkundige dryf**; kreatiwiteit en verbeelding; sielkundige aanpassing tot onderwys; effek van die skool onderwys en die omgewing op studente*

Sub-units labelled FTME made up 66.5% of the total with the use of singular as opposed to plural forms and unnecessary use of or absence of articles.

Table 4.56 and Figure 4.80 (page 206) indicate Level of comprehensiveness.

Table 4.56: Level of comprehensiveness in 370, 371 and 378

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	10	11	34	51	210
%	3.2	3.4	10.8	16.1	66.5

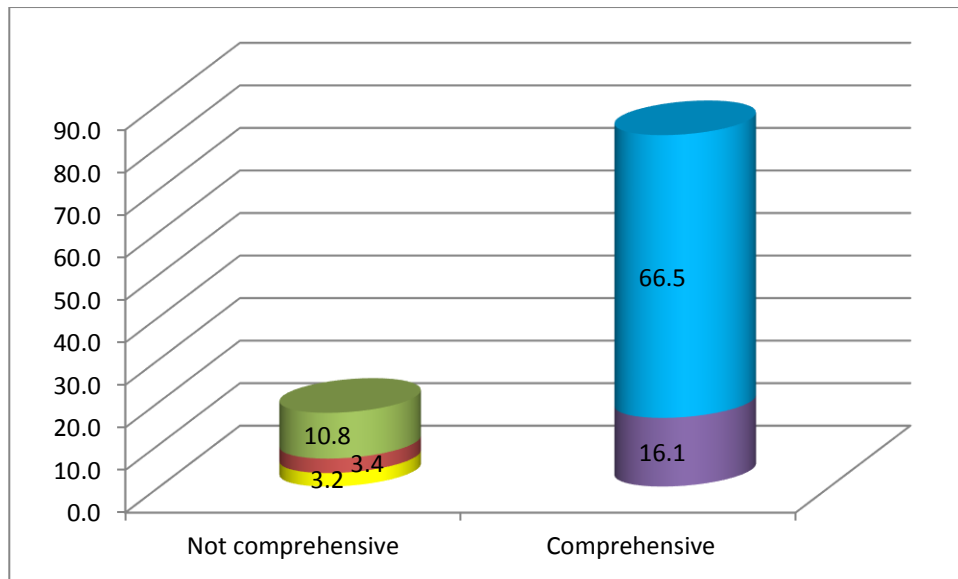


Figure 4.80: Level of comprehensiveness in 370, 371 and 378

Google Translate translated 82.6% or 261 out of 316 sub-units.

Table 4.57 and Figure 4.81 (page 207) indicate Degree of editorial effort.

Table 4.57: Degree of editorial effort in 370, 371 and 378

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	11	51	10	34	210
%	3.4	16.1	3.2	10.8	66.5

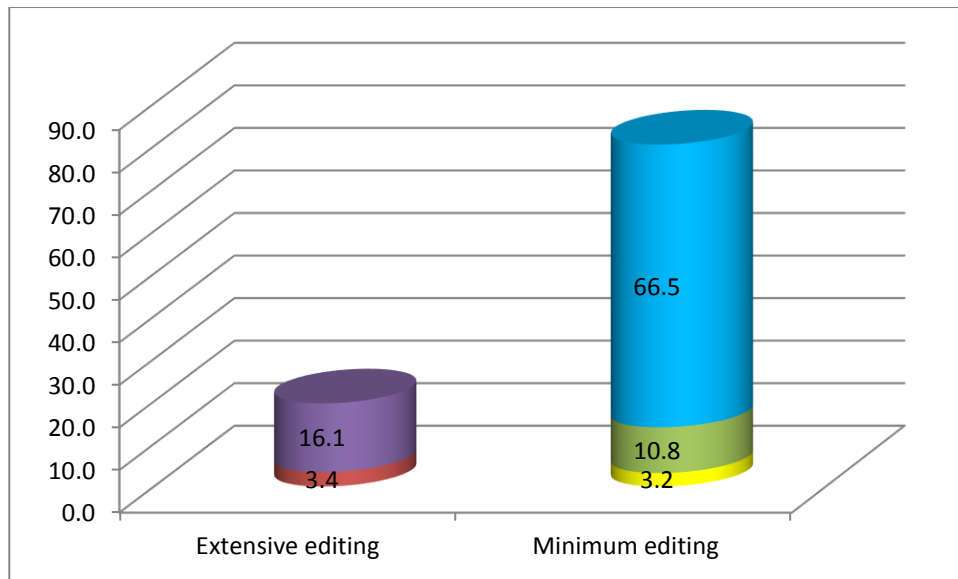


Figure 4.81: Degree of editorial effort in 370, 371 and 378

80.5% (254 out of 316 sub-units) of the translation needs little or no editing.

4.5.8 Commerce, communications, transportation (380, 381 and 384)

The researcher used only the 380 (introductory), 381 and 384 sections. The 380–389 division does not have unassigned sections.

Figure 4.82 (page 208) gives an overview of each evaluation category, measured as a percentage.

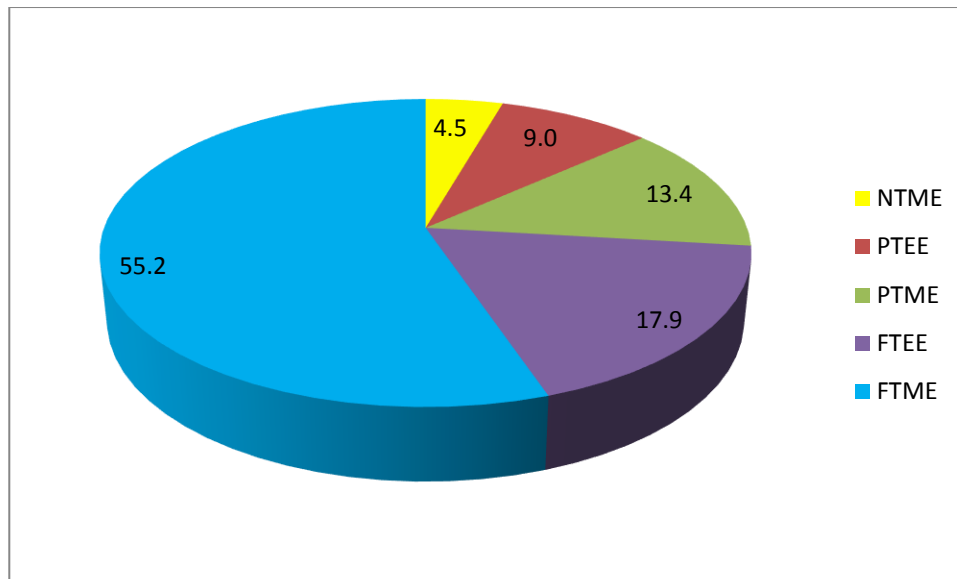


Figure 4.82: Commerce, communications, transportation (380, 381 and 384)

Sub-units labelled NTME made up 4.5% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Communications*
- *Radiobroadcasting*

Sub-units labelled PTEE made up 9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Including low power television (LPTV) stations (stations that rebroadcast the programs of full-service stations, originate programming that often includes pay television, and are usually limited in power to ...)*
- *Insluitend 'n lae krag televisie (LPTV) stasies (stasies **dat die programme van full-diensstasies rebroadcast, afkomstig** programme wat dikwels **sluit** betaaltelevisie, en word gewoonlik **beperk in krag** ...)*

- *Class here public broadcasting (noncommercial broadcasting), public aspects of amateur radio, interdisciplinary works on radiobroadcasting and television broadcasting*
- *Klas hier openbare uitsaaidienste (**kommersiële** uitsaai), openbare aspekte van amateur radio, interdissiplinêre werk op **radiobroadcasting** en televisie-uitsaaidienste*

Sub-units labelled PTME made up 13.4% of the total. Examples of words not translated by Google Translate are:

- *Table (again)*
- *Standard (again)*
- *Computer*
- *Videotext*
- *Wireless*
- *Commercial miscellany (again)*

Sub-units labelled FTEE made up 17.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *381 *Commerce (Trade)*
- *381 * **Handel (Handel)***
- *class consumer problems and their alleviation in 381.3*
- ***probleme klas verbruikers en hul verligting in 381.3***
- *visual signalling*
- *visuele **sein***

Sub-units labelled FTME made up 55.2% of the total with unnecessary use of or absence of articles.

Table 4.58 (page 210) and Figure 4.83 (page 210) indicate Level of comprehensiveness.

Table 4.58: Level of comprehensiveness in 380, 381 and 384

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	3	6	9	12	37
%	4.5	9	13.4	17.9	55.2

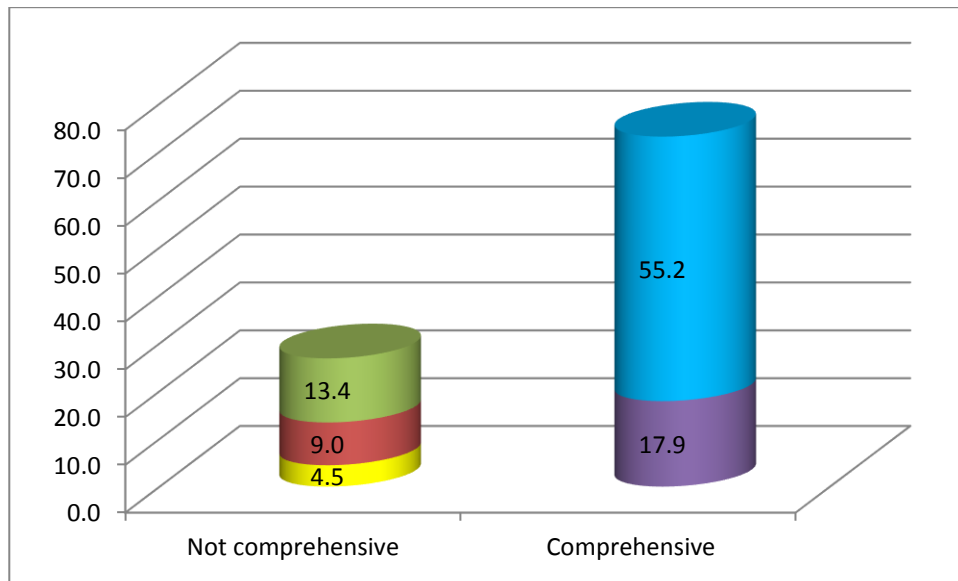


Figure 4.83: Level of comprehensiveness in 380, 381 and 384

Google Translate translated 73.1% or 49 out of 67 sub-units.

Table 4.59 and Figure 4.84 (page 211) indicate Degree of editorial effort.

Table 4.59: Degree of editorial effort in 380, 381 and 384

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	6	12	3	9	37
%	9	17.9	4.5	13.4	55.2

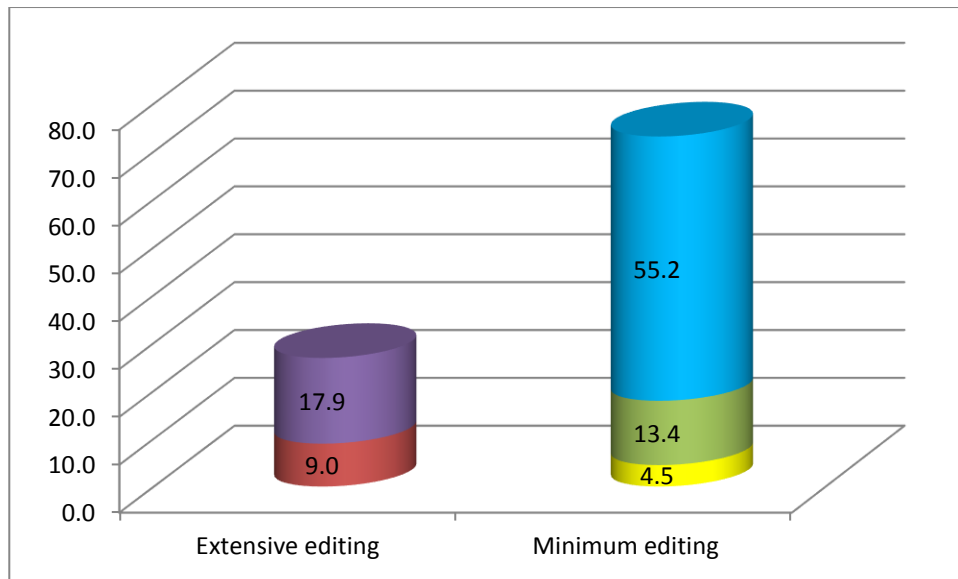


Figure 4.84: Degree of editorial effort in 380, 381 and 384

73.1% (49 out of 67 sub-units) of the translation needed little or no editing.

4.5.9 Customs, etiquette, folklore (390–392)

The researcher used three sections (390–392). Sections 396 and 397 are unassigned.

Figure 4.85 (page 212) gives an overview of each evaluation category, measured as a percentage.

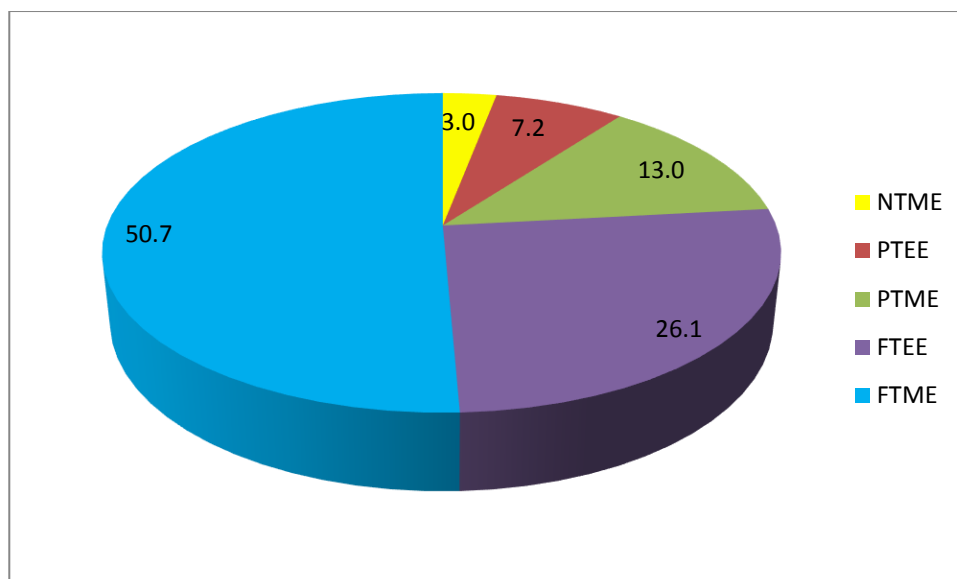


Figure 4.85: Customs, etiquette, folklore (390–392)

Sub-units labelled NTME made up 3% of the total. Examples of words not translated by Google Translate are:

- *Men (again)*
- *Jewelry*

Sub-units labelled PTEE made up 7.2% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Including gloves, mittens, footwear, neckwear; undergarments, hosiery, sleepwear, loungewear; headwear; bonnets, caps, hats; outerwear; overcoats, topcoats, raincoats; coats and jackets; specific kinds of garments (e.g., dresses, suits, shirts, blouses, tops, pants ...*
- *390 Customs, etiquette, folklore*
- *Insluitend handskoene, **wanten**, skoene, **dassen** en **hals doeke**; onderklere, sokkies, nagklere, **lounge**; **Hoofddeksels**; kappies, pette, hoede; **outerwear**; oorjasse, **afwerkings**, reënjasse, rokke en baadjies; spesifieke soorte klere (bv rokke, **regsgedinge**, hemde, bloese, tops, **broek** ...*
- *390 **Doeane**, etiket, **folklore***

Sub-units labelled PTME made up 13% of the total. Examples of words not translated by Google Translate are:

- *Standard (again)*
- *Body piercing*
- *Chaperonage*

Sub-units labelled FTEE made up 26.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *For death customs, see 393*
- *.1 Customs of birth, puberty, majority*
- *.3 Customs relating to dwelling places and domestic arts Including furnishings, heating, lighting, sanitation; cooking*
- ***Want** die dood gewoontes, sien 393*
- *.1 **Doeane** van geboorte, puberteit, meerderheid*
- *.3 **Doeane betrekking** tot wonings en **binnelandse** kunste insluitende meubels, verhitting, beligting, sanitasie; **kookles***

Sub-units labelled FTME made up 50.7% of the total with unnecessary use of or absence of articles.

Table 4.60 and Figure 4.86 indicate Level of comprehensiveness.

Table 4.60: Level of comprehensiveness in 390–392

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	5	9	18	35
%	3	7.2	13	26.1	50.7

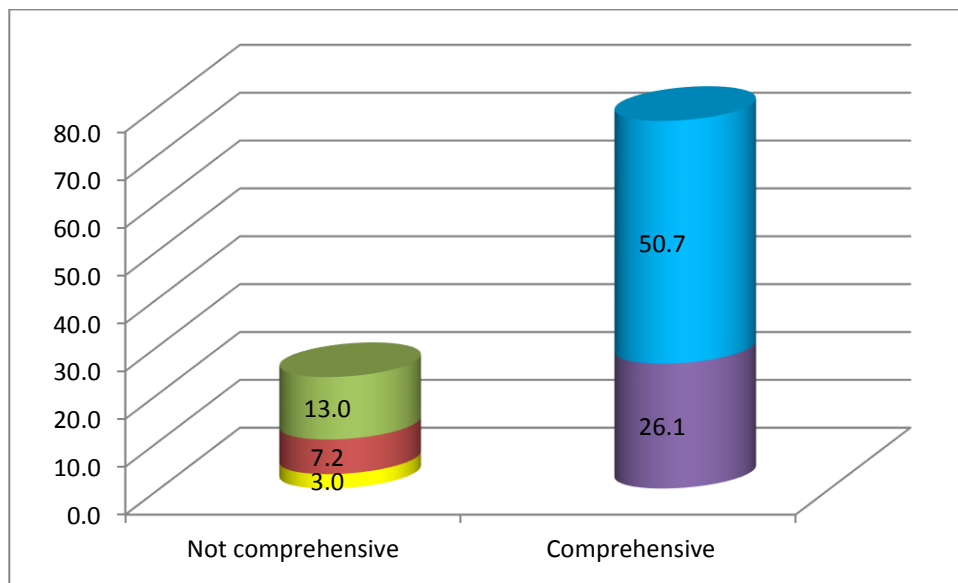


Figure 4.86: Level of comprehensiveness in 390–392

Google Translate translated 76.8% or 53 out of 69 sub-units.

Table 4.61 (page 215) and Figure 4.87 (page 215) indicate Degree of editorial effort.

Table 4.61: Degree of editorial effort in 390–392

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	5	18	2	9	35
%	7.2	26.1	3	13	50.7

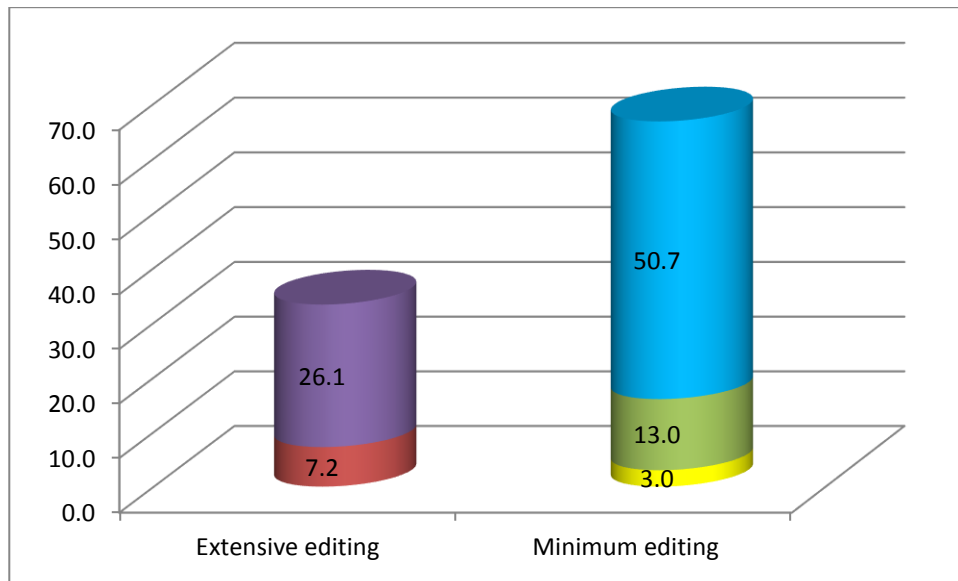


Figure 4.87: Degree of editorial effort in 390–392

66.7% (46 out of 69 sub-units) of the translation needed little or no editing.

4.5.10 Summary of the 300 main class

Table 4.62 (page 216) presents a summary of this class.

Table 4.62: Summary of 300 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
380, 381, 384	67	73.1	390–399	69	66.7
390–399	69	76.8	340–342	156	67.9
300–309	590	77.6	300–309	590	70.2
330, 336	107	78.5	350–353	266	72.2
320, 323	160	80	360, 361, 364	119	72.3
340–342	156	81.4	380, 381, 384	67	73.1
370, 371, 378	316	82.6	320, 323	160	79.4
350–353	266	83.1	370, 371, 378	316	80.5
360, 361, 364	119	86.6	330, 336	107	84.1
Average %		80	Average %		74

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

Eight of the nine units have a comprehensiveness of 75% or more and the ninth is above 66.7% which indicates that the translations were comprehensive, averaging 80%.

In three of the nine units 75% or more of the translation needs little or no editing; in the other six 66.7% or more of the translation needs little or no editing, averaging 74% which indicates minimum editorial effort.

4.6 The 400 main class

Using some sections of all divisions (as in the 300 main class) as opposed to just some full divisions within a class does not really show a significant difference in level of comprehensiveness or level of editorial effort of translations, therefore the researcher proceeds with using full divisions, where possible.

This main class does not have any unassigned divisions. The researcher used three full divisions and two sections of 430–439. The language class is repetitive from 420 onwards.

It is necessary to look at the introductory 400–409 and 410–419 (Linguistics, a unique division). Division 490–499 is used to see if it follows the pattern of the many names of ethnic groups in 305 that Google Translate did not translate. The language groups closely resemble the ethnic groups. The other two sections are added to make up for some unassigned sections in 400–409 and 410–419.

4.6.1 Language (400–409)

The researcher used the whole 400–409 division (introductory to the main class). It contains the summary for the whole main class and resembles Table 1 (Standard subdivisions). Section 404 is unassigned.

Figure 4.88 (page 218) gives an overview of each evaluation category, measured as a percentage.

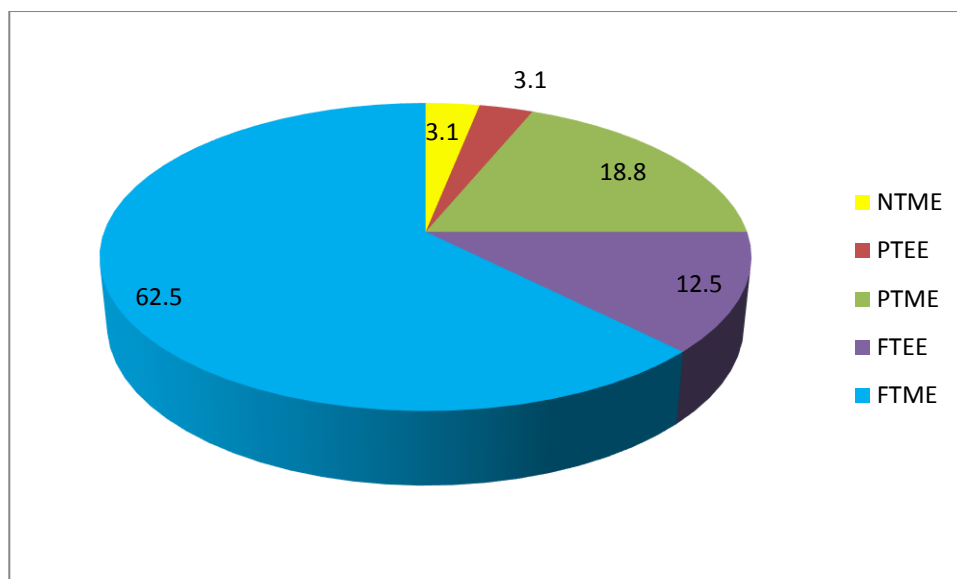


Figure 4.88: Language (400–409)

Sub-units labelled NTME made up 3.1% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 3.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>401–409 Standard subdivisions</i> <p><i>420 English and Old English (Anglo-Saxon)</i></p> <p><i>450 Italian, Dalmatian, Romanian, Rhaetian, Sardinian, Corsican</i></p> | <ul style="list-style-type: none"> • <i>401–409 Standard onderafdelings</i> <p><i>420 Engels en Old English (Anglo-Saksiese)</i></p> <p><i>450 Italiaans, Dalmatian, Roemeens, Rhätische, Sardies, Korsikaans</i></p> |
|--|--|

Sub-units labelled PTME made up 18.8% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Corpus*
- *Edition* (again)
- *Serial* (again)
- *Geographic* (again)

Sub-units labelled FTEE made up 12.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *class dictionaries of languages for special purposes with the purpose, plus notation 03 from Table 1, e.g., medical dictionaries 610.3; class a specific international sign language with the language in 419, e.g., American Sign Language as a universal ...*
- *klas **woordeboeke tale** vir spesiale doeleindes met die doel, plus notasie 03 van Tabel 1, bv mediese woordeboeke 610.3; klas 'n spesifieke internasionale **teken** met die taal in 419, bv, Amerikaanse Gebaretaal as 'n universele ...*

Sub-units labelled FTME made up 62.5% of the total with unnecessary use of or absence of articles.

Table 4.63 and Figure 4.89 (page 220) indicate Level of comprehensiveness.

Table 4.63: Level of comprehensiveness in 400–409

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	1	6	4	20
%	3.1	3.1	18.8	12.5	62.5

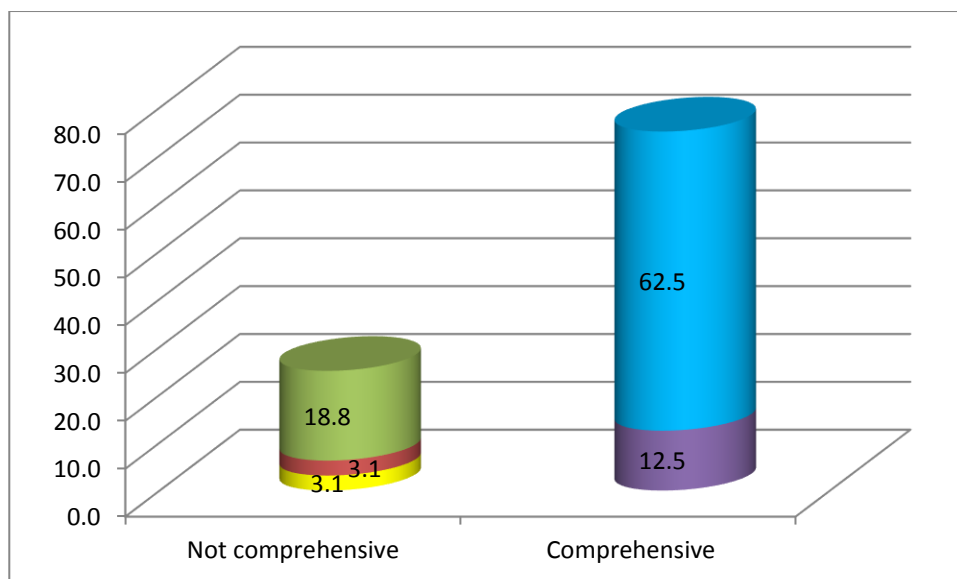


Figure 4.89: Level of comprehensiveness in 400-409

Google Translate translated 75% or 24 out of 32 sub-units.

Table 4.64 and Figure 4.90 (page 221) indicate Degree of editorial effort.

Table 4.64: Degree of editorial effort in 400-409

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	1	4	1	6	20
%	3.1	12.5	3.1	18.8	62.5

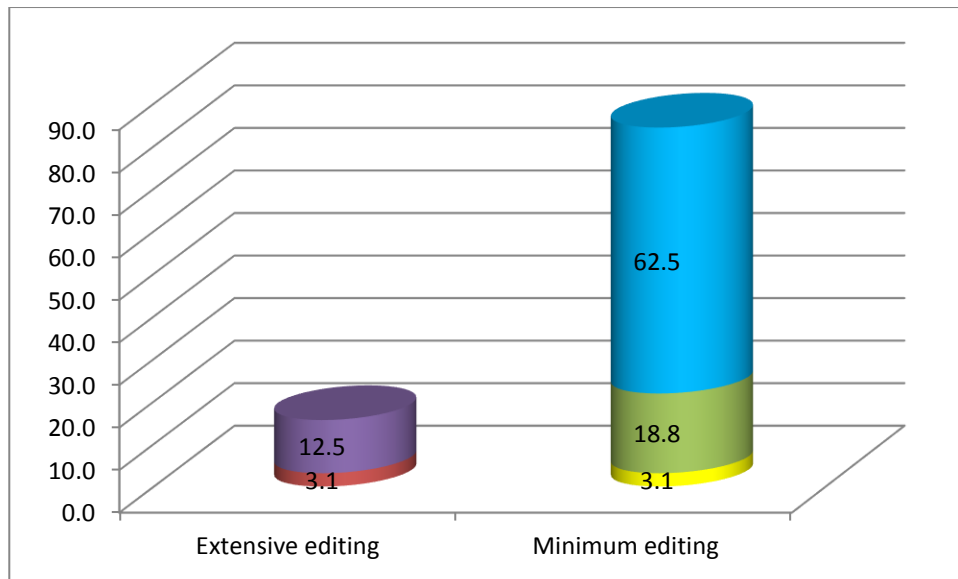


Figure 4.90: Degree of editorial effort in 400–409

84.4% (27 out of 32 sub-units) of the translation needs little or no editing.

4.6.2 Linguistics (410–419)

The researcher used the whole 410-419 division. Section 416 is unassigned.

Figure 4.91 (page 222) gives an overview of each evaluation category, measured as a percentage.

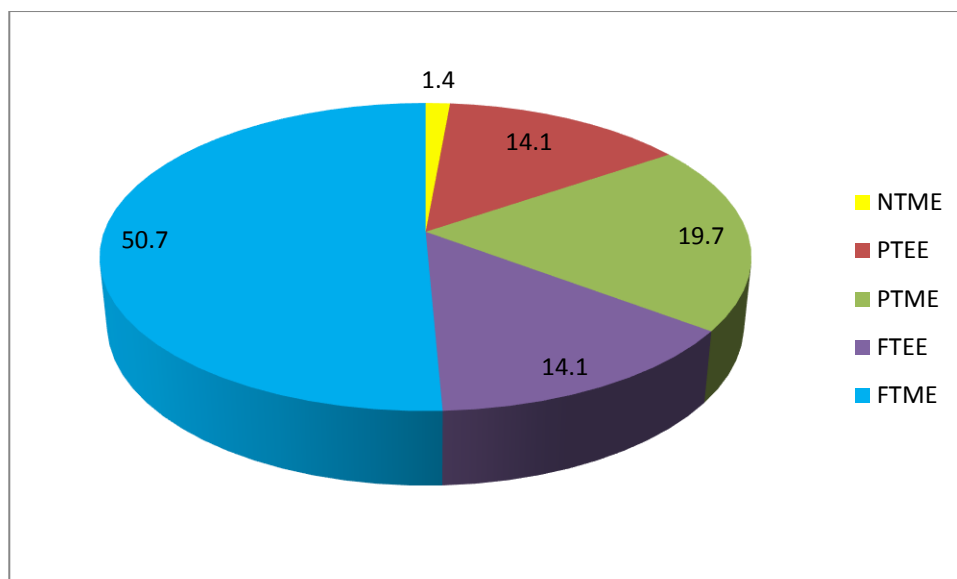


Figure 4.91: Linguistics (410–419)

Sub-units labelled NTME made up 1.4% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 14.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>class dictionaries of geographic variations, of modern nongeographic variations of languages in 417</i> | <ul style="list-style-type: none"> • <i>klas woordeboeke geografiese variasies van die moderne nongeographic variasies van tale in 417</i> |
|--|---|

Sub-units labelled PTME made up 19.7% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Celtic*
- *Standard* (again)
- *Eponyms*
- *Nongeographic* (again)
- *Edition* (again)

Sub-units labelled FTEE made up 14.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>See also 652 for practical works on how to write by hand or machine, e.g., keyboarding 652.3</i> | <ul style="list-style-type: none"> • <i>Sien ook 652 vir praktiese werk op hoe om te skryf met die hand of masjien, bv klavier 652.3</i> |
| <ul style="list-style-type: none"> • <i>for manual coding of multiple standard spoken languages</i> | <ul style="list-style-type: none"> • <i>vir die handleiding kodering van verskeie standaard gesproke tale</i> |
| <ul style="list-style-type: none"> • <i>Do not use for sign languages used primarily for purposes other than communication among deaf people or between hearing and deaf people, sign languages used primarily for communication among deaf people</i> | <ul style="list-style-type: none"> • <i>Moet nie gebruik vir teken tale wat hoofsaaklik gebruik word vir ander doeleindes as kommunikasie tussen dowes doeleindes of tussen hoor en dowe mense, teken tale hoofsaaklik gebruik word vir kommunikasie tussen dowes</i> |

Sub-units labelled FTME made up 50.7% of the total with unnecessary use of or absence of articles.

Table 4.65 (page 224) and Figure 4.92 (page 224) indicate Level of comprehensiveness.

Table 4.65: Level of comprehensiveness in 410–419

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	10	14	10	36
%	1.4	14.1	19.7	14.1	50.7

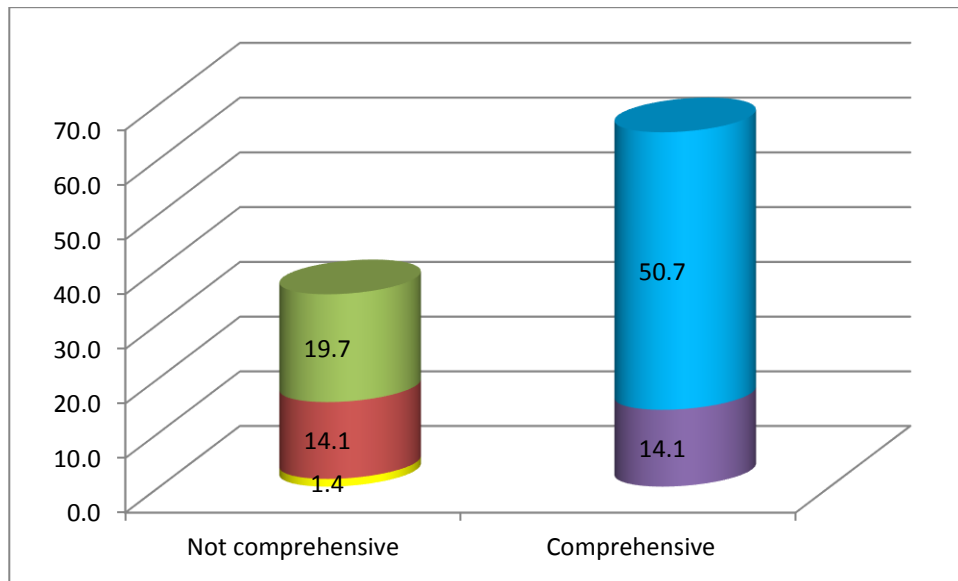


Figure 4.92: Level of comprehensiveness in 410–419

Google Translate translated 64.8% or 46 out of 71 sub-units.

Table 4.66 and Figure 4.93 (page 225) indicate Degree of editorial effort.

Table 4.66: Degree of editorial effort in 410–419

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	10	10	1	14	36
%	14.1	14.1	1.4	19.7	50.7

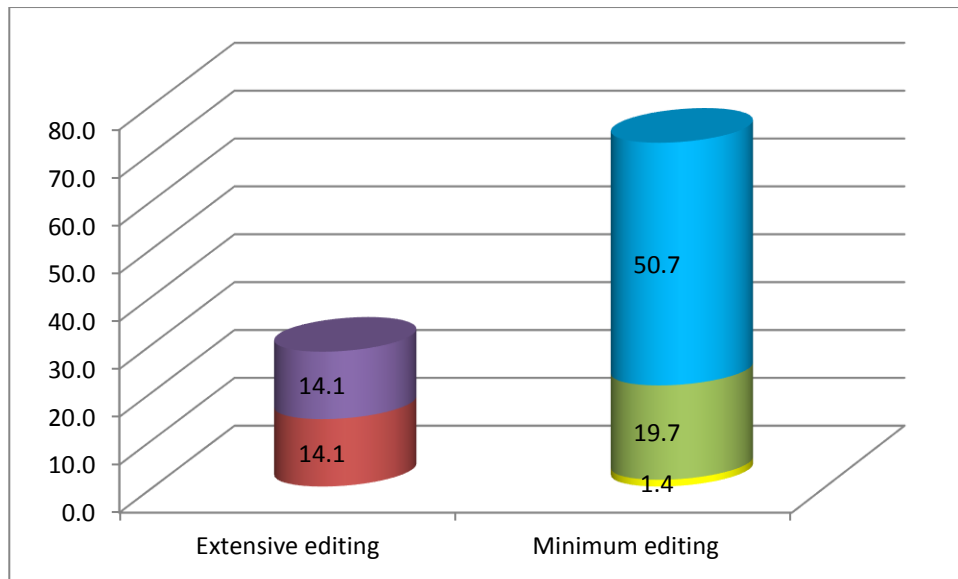


Figure 4.93: Degree of editorial effort in 410–419

71.8% (51 out of 71 sub-units) of the translation needs little or no editing.

4.6.3 German and related languages (430 and 439)

The researcher used two sections in the 430–439 division, the introductory 430 and 439 because it includes Afrikaans. These two additional sections make up for unassigned sections in 400–409 and 410–419.

Figure 4.94 (page 226) gives an overview of each evaluation category, measured as a percentage.

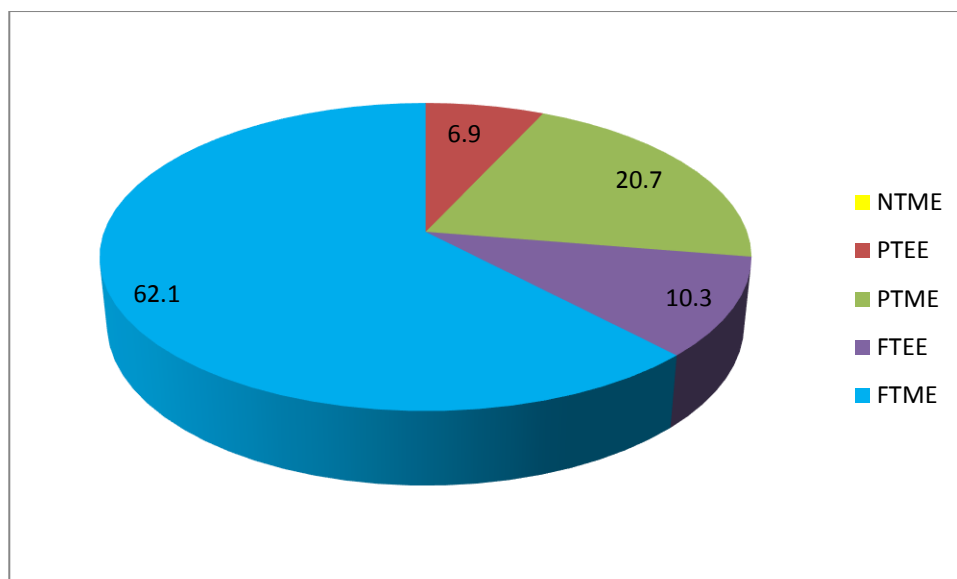


Figure 4.94: German and related languages (430 and 439)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 6.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Including Yiddish; West Germanic languages; Frisian, Low German (Plattdeutsch); North Germanic languages (Nordic languages); comprehensive works on east Scandinavian languages ...*
- *Insluitend **Yiddish**; Wes-Germaanse tale; **Fries, Low German** (Nederduits); Noord-Germaanse tale (Nordiese tale); *omvattende werke op die **oostekant** Skandinawiese tale ...**

Sub-units labelled PTME made up 20.7% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Standard* (again)
- *Table* (again)
- *Nongeographic* (again)

Sub-units labelled FTEE made up 10.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>*Add to base number as instructed under 420–490</i> • <i>Class dictionaries; lexicography; discursive works on terminology intended to teach vocabulary, spelling and pronunciation in applied linguistics; history</i> | <ul style="list-style-type: none"> • <i>* Voeg by basis nommer as opdrag onder 420–490</i> • <i>Klas woordeboeke; leksikografie; diskursiewe werke oor terminologie bedoel woordeskat, spelling en uitspraak leer in Toegepaste Linguistiek; geskiedenis</i> |
|---|--|

Sub-units labelled FTME made up 62.1% of the total with unnecessary use of or absence of articles and an unnecessary “e” after some language names (“Finse” not “Fins”).

Table 4.67 and Figure 4.95 (page 228) indicate Level of comprehensiveness.

Table 4.67: Level of comprehensiveness in 430 and 439

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	2	6	3	18
%	0	6.9	20.7	10.3	62.1

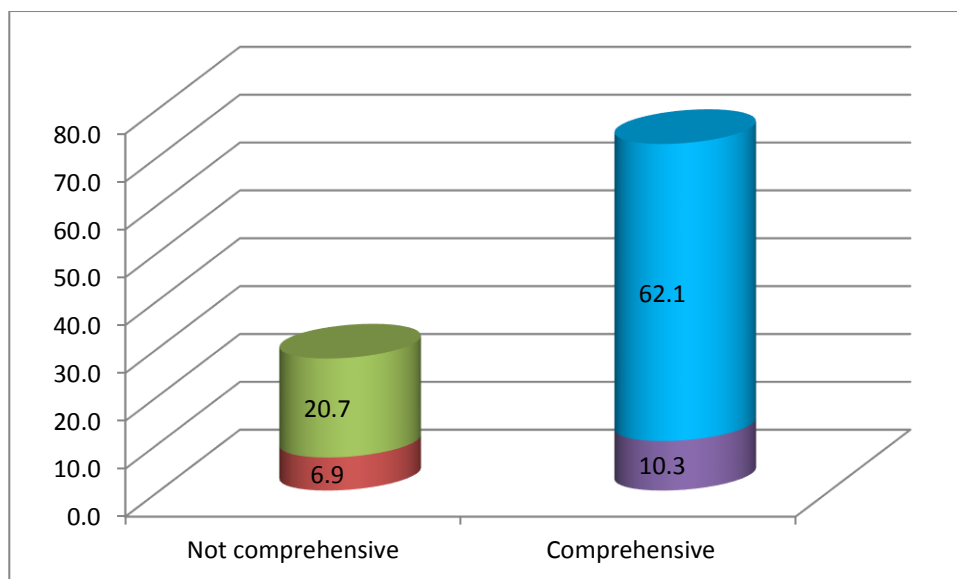


Figure 4.95: Level of comprehensiveness in 430 and 439

Google Translate translated 72.4% or 21 out of 29 sub-units.

Table 4.68 and Figure 4.96 (page 229) indicate Degree of editorial effort.

Table 4.68: Degree of editorial effort in 430 and 439

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	2	3	0	6	18
%	6.9	10.3	0	20.7	62.1

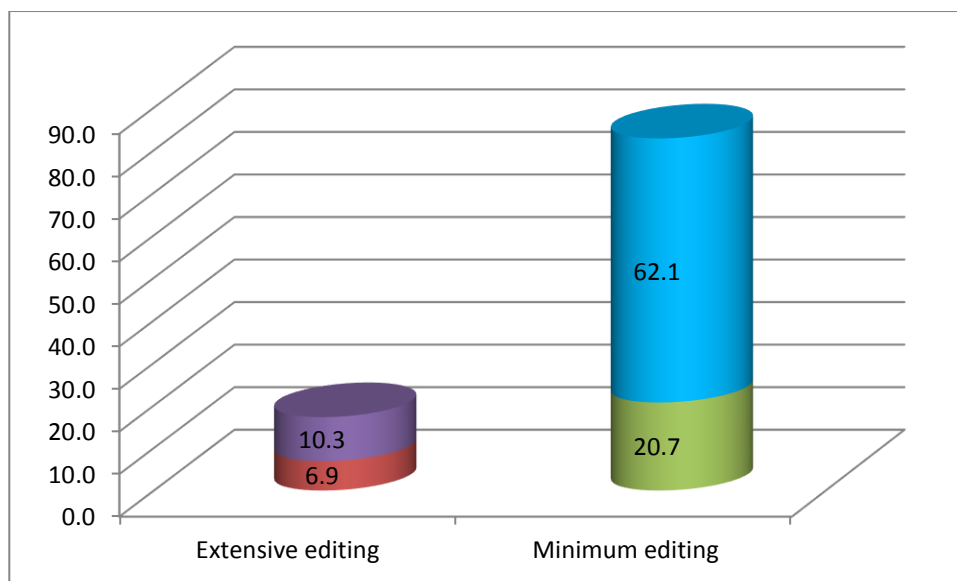


Figure 4.96: Degree of editorial effort in 430 and 439

82.8% (24 out of 29 sub-units) of the translation needs little or no editing.

4.6.4 Other languages (490–499)

The researcher used the whole 490–499 division and it does not have unassigned sections.

Figure 4.97 (page 230) gives an overview of each evaluation category, measured as a percentage.

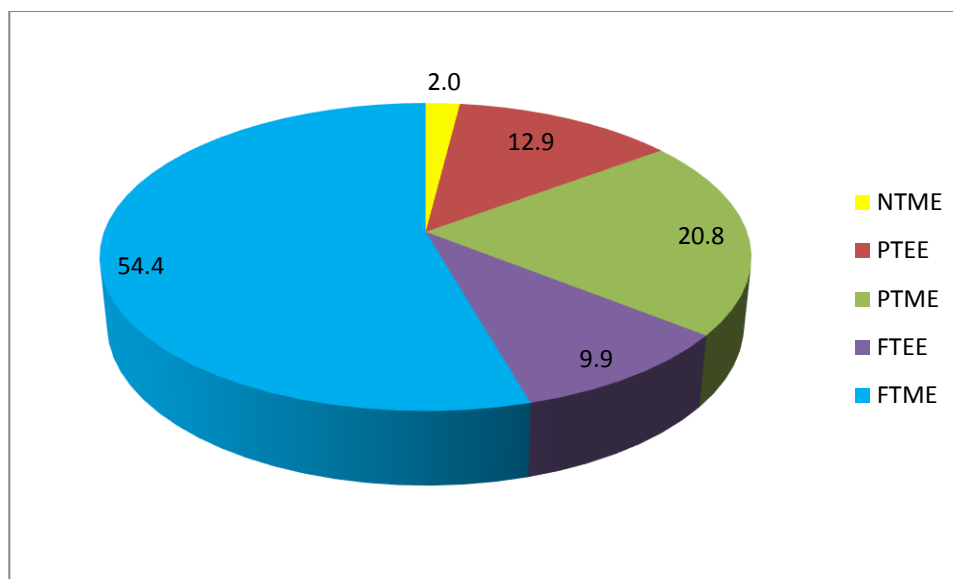


Figure 4.97: Other languages (490–499) scores

Sub-units labelled NTME made up 2% of the total. Examples of words not translated by Google Translate are:

- *Chinese*
- *Japanese*

Sub-units labelled PTEE made up 12.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| • <i>491 East Indo-European and Celtic languages</i> | • <i>491 East Indo-Europese en Keltiese tale</i> |
| • <i>494 Altaic, Uralic, Hyperborean, Dravidian languages, miscellaneous languages of south Asia</i> | • <i>494 Altaïese, Ural, die hoë noorde, Dravidiese tale, diverse tale van Suid-Asië</i> |
| • <i>and other language names in the text of 490–499 not translated by Google Translate</i> | |

Sub-units labelled PTME made up 20.8% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Celtic* (again)
- *Miscellany* (again)
- *Standard* (again)
- *East*
- *Nongeographic* (again)

Sub-units labelled FTEE made up 9.9% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Here are classed languages of south Asia closely related to the languages of east and southeast Asia*
- *Hier word **beskou** tale van Suid-Asië nou verwant aan die tale van die **ooste** en die Suidoos-Asië*
- *See also 419 for sign languages*
- *Sien ook 419 vir **teken tale***

Sub-units labelled FTME made up 54.4% of the total with unnecessary use of or absence of articles.

Table 4.69 and Figure 4.98 (page 232) indicate Level of comprehensiveness.

Table 4.69: Level of comprehensiveness in 490–499

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	13	21	10	55
%	2	12.9	20.8	9.9	54.4

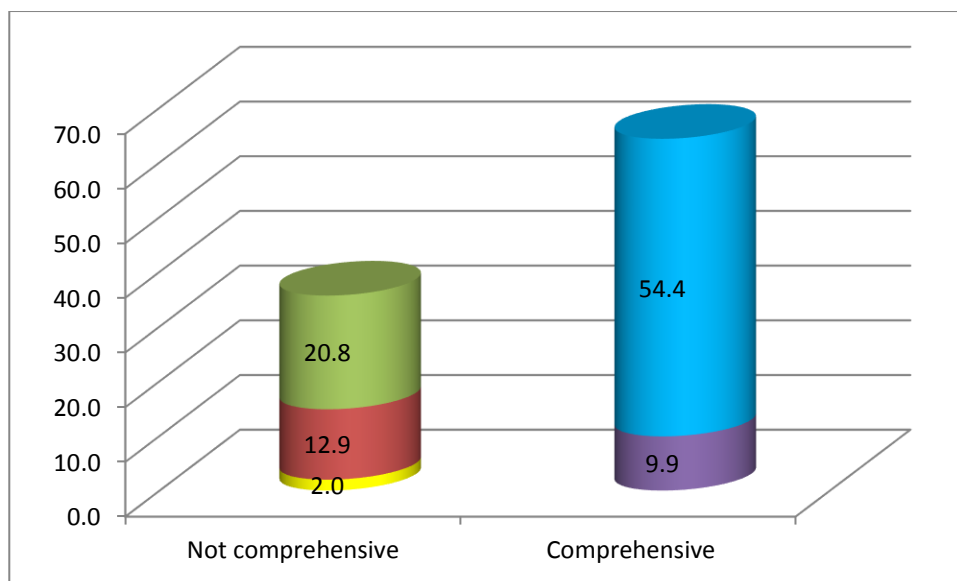


Figure 4.98: Level of comprehensiveness in 490-499

Google Translate translated 64.3% or 65 out of 101 sub-units.

Table 4.70 and Figure 4.99 (page 233) indicate Degree of editorial effort.

Table 4.70: Degree of editorial effort in 490-499

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	13	10	2	21	55
%	12.9	9.9	2	20.8	54.4

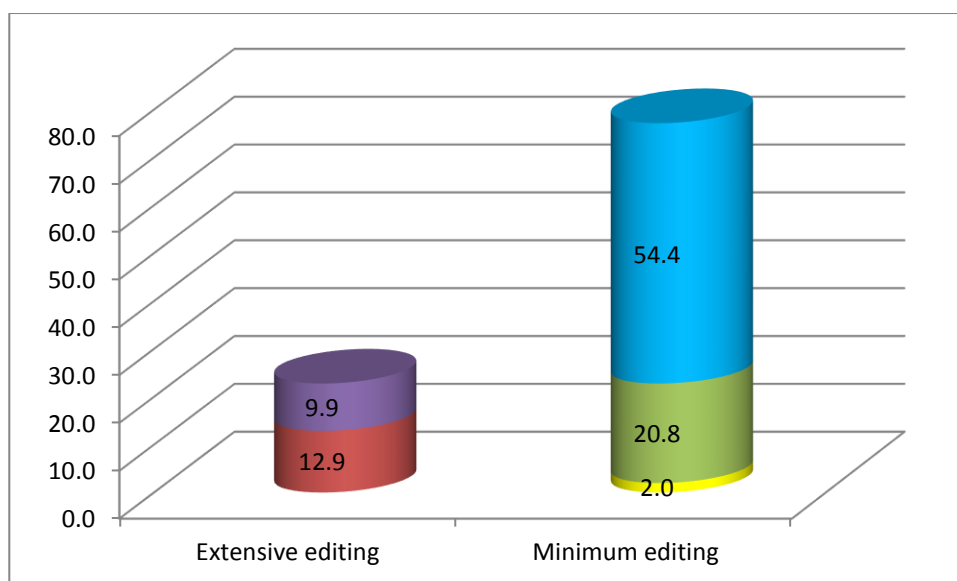


Figure 4.99: Degree of editorial effort in 490-499

77.2% (78 out of 101 sub-units) of the translation needs little or no editing.

4.6.5 Summary of the 400 main class

Table 4.71 presents a summary of this class.

Table 4.71: Summary of the 400 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
490-499	101	64.3	410-419	71	71.8
410-419	71	64.8	490-499	101	77.2
430, 439	29	72.4	430, 439	29	82.8
400-409	32	75	400-409	32	84.4
Average %		69.1	Average %		79.1

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

One of the four units has a comprehensiveness of 75% and one other is above 66.7% which indicates that the translations were comprehensive, averaging 69.1%.

In three of the four units 75% or more of the translation needs little or no editing; in the fourth 71.8% of the translation needs little or no editing, averaging 79.1% which indicates minimum editorial effort.

4.7 The 500 main class

This main class does not have any unassigned divisions. The researcher used three full divisions and two sections of 570, namely 570 and 571.

It is necessary to look at the introductory 500–509. The other two full divisions are 510–519 and 530–539, with two additional sections 570 and 571 because there are two unassigned sections, one in 500–509 and one in 510–519.

4.7.1 Natural sciences and mathematics (500–509)

The researcher used the whole 500–509 division (introductory to the main class). It contains the summary for the whole main class and resembles Table 1 (Standard subdivisions), except for 508. Section 504 is unassigned.

Figure 4.100 (page 235) gives an overview of each evaluation category, measured as a percentage.

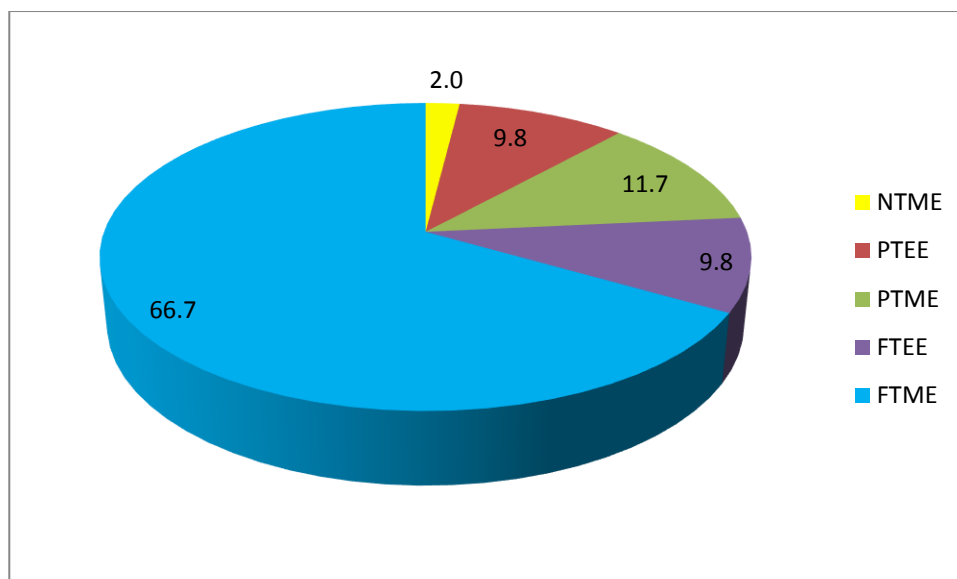


Figure 4.100: Natural sciences and mathematics (500–509)

Sub-units labelled NTME made up 2% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 9.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>Class stereology with compound microscopes, stereology with electron microscopes in 502; class interdisciplinary works on photomicrography in 778.3</i> | <ul style="list-style-type: none"> • <i>Klas stereology met saamgestelde mikroskoop, stereology met elektronmikroskope in 502; klas interdissiplinêre werk op photomicrography in 778.3</i> |
|--|---|

Sub-units labelled PTME made up 11.7% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Space*
- *Standard* (again)
- *Serial* (again)
- *Edition* (again)

Sub-units labelled FTEE made up 9.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class research covering the sciences in the broad sense of all knowledge, scientific method as a general research technique in 001.4*
- ***Klas navorsing wat die wetenskap in die breë sin van alle kennis, wetenskaplike metode as 'n algemene navorsing tegniek in 001.4***

Sub-units labelled FTME made up 66.7% of the total.

Table 4.72 and Figure 4.101 (page 237) indicate Level of comprehensiveness.

Table 4.72: Level of comprehensiveness in 500–509

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	5	6	5	34
%	2	9.8	11.7	9.8	66.7

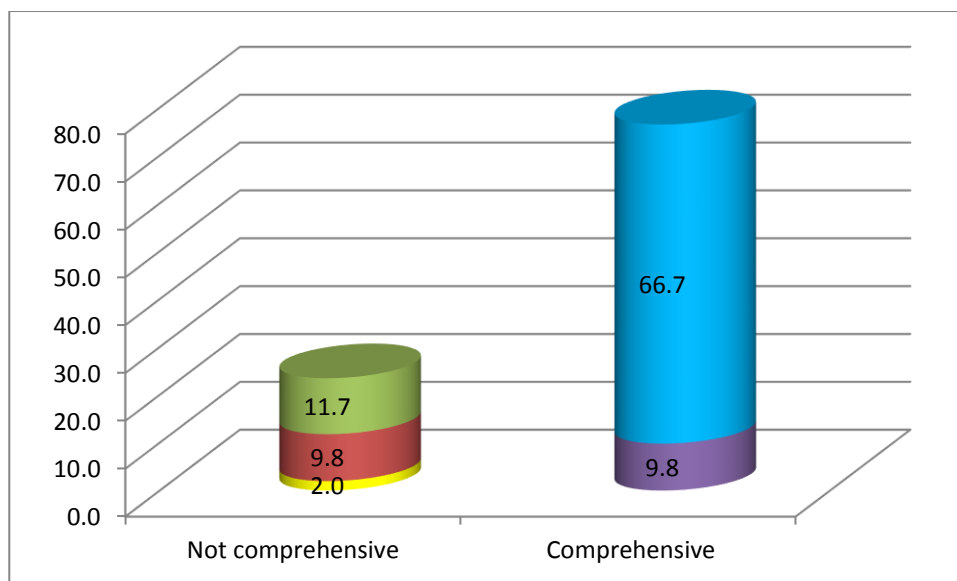


Figure 4.101: Level of comprehensiveness in 500-509

Google Translate translated 76.5% or 39 out of 51 sub-units.

Table 4.73 and Figure 4.102 (page 238) indicate Degree of editorial effort.

Table 4.73: Degree of editorial effort in 500-509

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	5	5	1	6	34
%	9.8	9.8	2	11.7	66.7

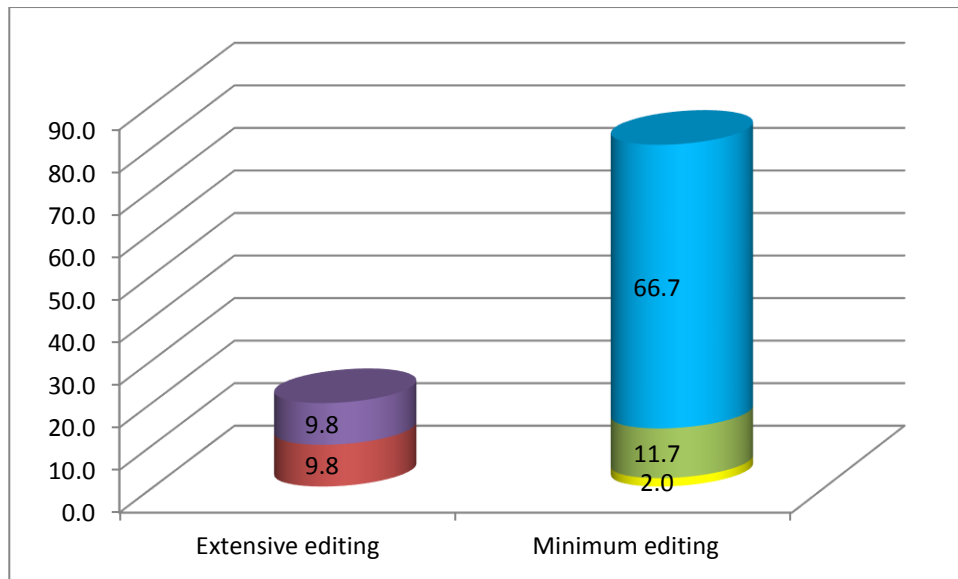


Figure 4.102: Degree of editorial effort in 500–509

80.4% (41 out of 51 sub-units) of the translation needs little or no editing.

4.7.2 Mathematics (510–519)

The researcher used the whole 510–519 division. Section 517 is unassigned.

Figure 4.103 (page 239) gives an overview of each evaluation category, measured as a percentage.

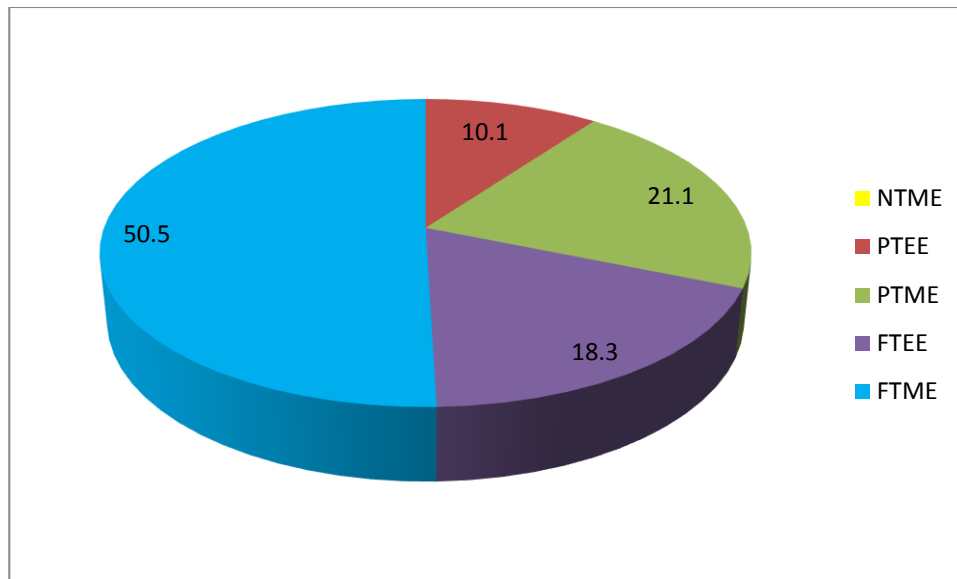


Figure 4.103: Mathematics (510–519)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 10.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *For topological vector spaces, see 515; for differentiable manifolds, see 516.3. For singularities in a specific subject, see the subject, e.g., singularities in functions of several complex variable 515*
- *Vir topologiese vektorruimtes, sien 515; vir **differensieerbaar manifoldsets** sien 516.3. Vir **singulariteite** in 'n spesifieke onderwerp, sien die onderwerp, bv **singulariteite** in funksies van meer komplekse veranderlike 515*
- *Including plane analytic geometry; solid analytic geometry; analytic trigonometry; algebraic geometry; birational and conformal transformations, connections, dual geometries, intersections; bilinear and*
- *Insluitende **die vliegtuig** analitiese meetkunde; soliede analitiese meetkunde; analitiese trigonometrie; algebraïese meetkunde; **Ische ingenieurswese**; birasionale en konforme transformasies,*

sesquilinear

*verbindings, dubbele geometrie, kruisings; **bilinear en sesquilinear***

Sub-units labelled PTME made up 21.1% of the total. Examples of words not translated by Google Translate are:

- *Metamathematics*
- *Homological*
- *Bilinear*
- *Standard (again)*
- *Nonclassical*
- *Base*
- *Congruencies*
- *Solid*

Sub-units labelled FTEE made up 18.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Including numeracy; arithmetic combined with other branches of mathematics; modular arithmetic; rapid calculations; mental arithmetic, ready reckoners, shortcuts*
- *Including queuing; queuing processes; inventory and storage; success runs; epidemics and fluctuations; quality control*
- *Class games of chance in 519.2*
- *Insluitende gesyferdheid; **rekenkundige** gekombineer met ander **takke** van wiskunde; modulêre rekenkunde; vinnige berekeninge; hoofrekene, **gereed Rekenaar**, kortpaaie*
- *Insluitend **toustaan; toustaan** prosesse; voorraad en stoor; **sukses lopies**; epidemies en skommeling; kwaliteitsbeheer*
- *Klas speletjies **van die voorval** in*

- Including plane trigonometry;
spherical trigonometry;
trigonometric functions
- Insluitende die **vliegtuig**
trigonometrie;
boldriehoeksmetkunde;
trigonometrisiese funksies

Sub-units labelled FTME made up 50.5% of the total with unnecessary use of or absence of articles.

Table 4.74 and Figure 4.104 indicate Level of comprehensiveness.

Table 4.74: Level of comprehensiveness in 510–519

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	11	23	20	55
%	0	10.1	21.1	18.3	50.5

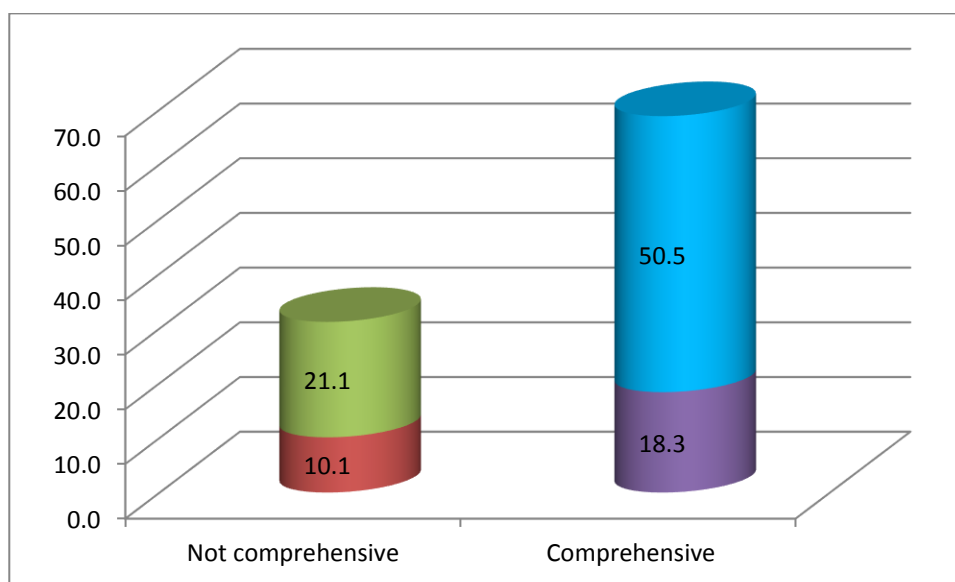


Figure 4.104: Level of comprehensiveness in 510–519

Google Translate translated 68.8% or 75 out of 109 sub-units.

Table 4.75 and Figure 4.105 indicate Degree of editorial effort.

Table 4.75: Degree of editorial effort in 510–519

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	11	20	0	23	55
%	10.1	18.3	0	21.1	50.5

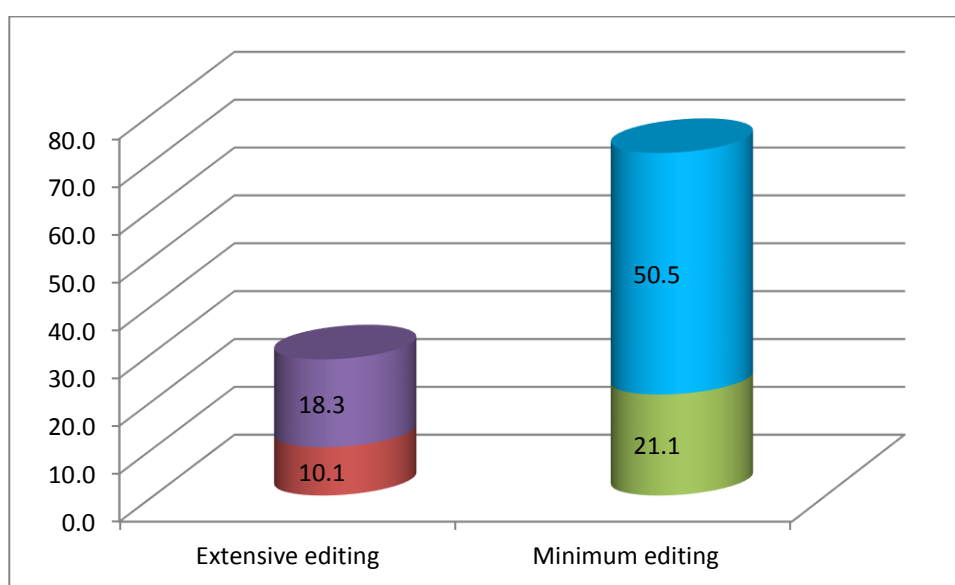


Figure 4.105: Degree of editorial effort in 510–519

71.6% (78 out of 109 sub-units) of the translation needs little or no editing.

4.7.3 Physics (530–539)

The researcher used the whole 530–539 division and it does not have unassigned sections.

Figure 4.106 (page 243) gives an overview of each evaluation category, measured as a percentage.

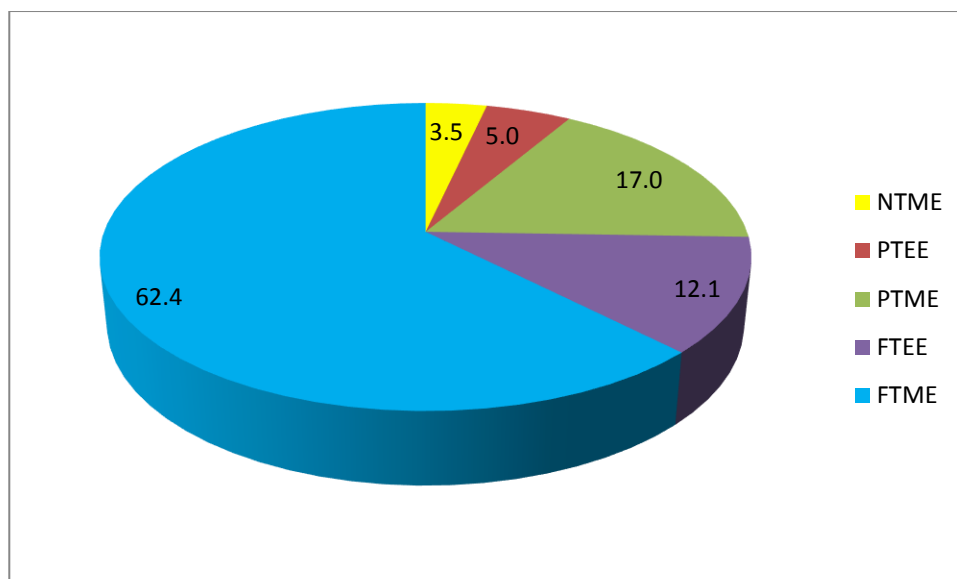


Figure 4.106: Physics (530–539)

Sub-units labelled NTME made up 3.5% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again and repeatedly)
- *Heat*
- *Electronics*

Sub-units labelled PTEE made up 5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Including exploding wire phenomena; disruptive discharges; discharge through rarefied gases and vacuums; photoelectric phenomena; electron and ion optics</i> | <ul style="list-style-type: none"> • <i>Insluitend ontploff draad verskynsels; ontwrigtende ontlaai; ontlaai deur ijl gasse en leemtes; fotoëlektriese verskynsels; elektron en ioon optika</i> |
| <ul style="list-style-type: none"> • <i>Including problem of few bodies, theory of continuum physics; electromagnetic theory; unified</i> | <ul style="list-style-type: none"> • <i>Insluitend probleem van min liggame, teorie van kontinuum fisika; elektromagnetiese teorie;</i> |

*field theory; grand unified theory;
quantum field theory; problem of
many bodies*

*verenigde veld teorie; **grand**
verenigde teorie;
kwantumveldeteorie; probleem
van **baie liggame***

Sub-units labelled PTME made up 17% of the total. Examples of words not translated by Google Translate are:

- *Nonrelativistic*
- *Field*
- *Variant*
- *Aeromechanic*
- *Hydro*
- *Sound*
- *Vibrations*
- *Light*

Sub-units labelled FTEE made up 12.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| • <i>Class applications to specific states of matter in 530.4</i> | • <i>Klas ansoeke om spesifieke toestande van materie in 530.4</i> |
| • <i>Including generation of sound, transmission of sound, characteristics of sound</i> | • <i>Insluitende geslag van klank, die oordrag van klank, eienskappe van klank</i> |
| • <i>.5 Beams</i> | • <i>.5 Balke</i> |

Sub-units labelled FTME made up 62.4% of the total with unnecessary use of or absence of articles.

Table 4.76 (page 245) and Figure 4.107 (page 245) indicate Level of comprehensiveness.

Table 4.76: Level of comprehensiveness in 530–539

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	5	7	24	17	88
%	3.5	5	17	12.1	62.4

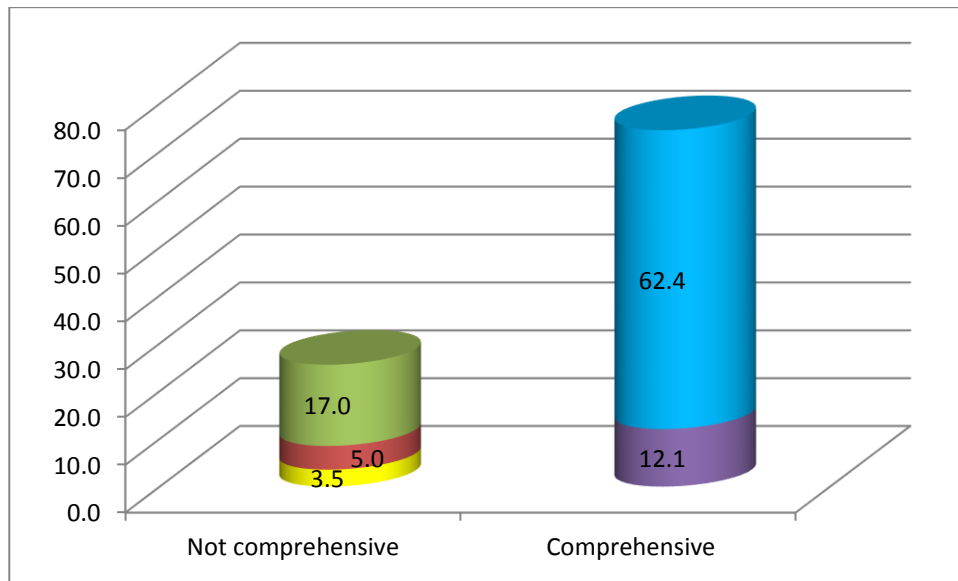


Figure 4.107: Level of comprehensiveness in 530–539

Google Translate translated 74.5% or 105 out of 141 sub-units.

Table 4.77 and Figure 4.108 (page 246) indicate Degree of editorial effort.

Table 4.77: Degree of editorial effort in 530–539

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	7	17	5	24	88
%	5	12.1	3.5	17	62.4

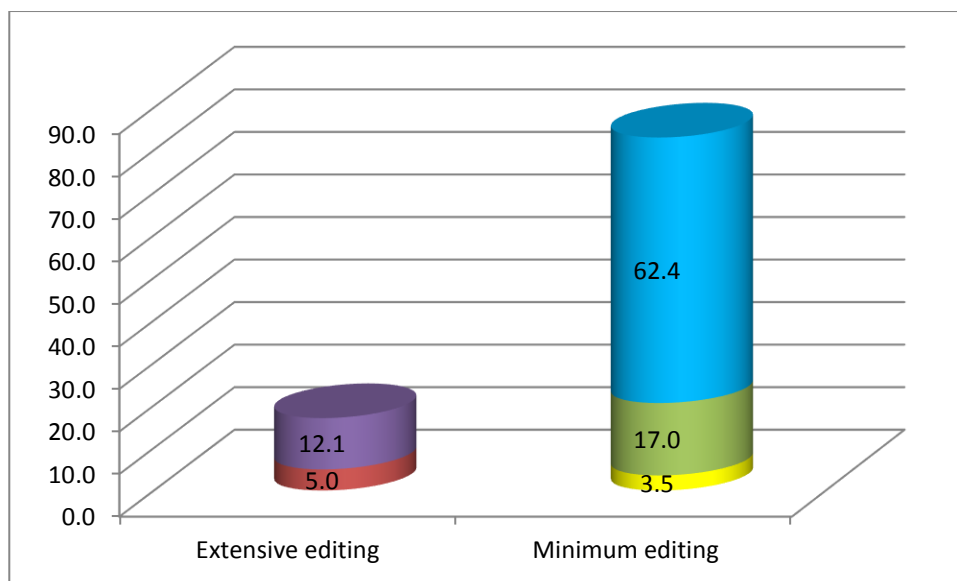


Figure 4.108: Degree of editorial effort in 530–539

82.9% (117 out of 141 sub-units) of the translation needs little or no editing.

4.7.4 Biology (570 and 571)

The researcher used the 570 and 571 sections of the 570s division to make up for two unassigned sections in 500–509 and 510–519.

Figure 4.109 (page 247) gives an overview of each evaluation category, measured as a percentage.

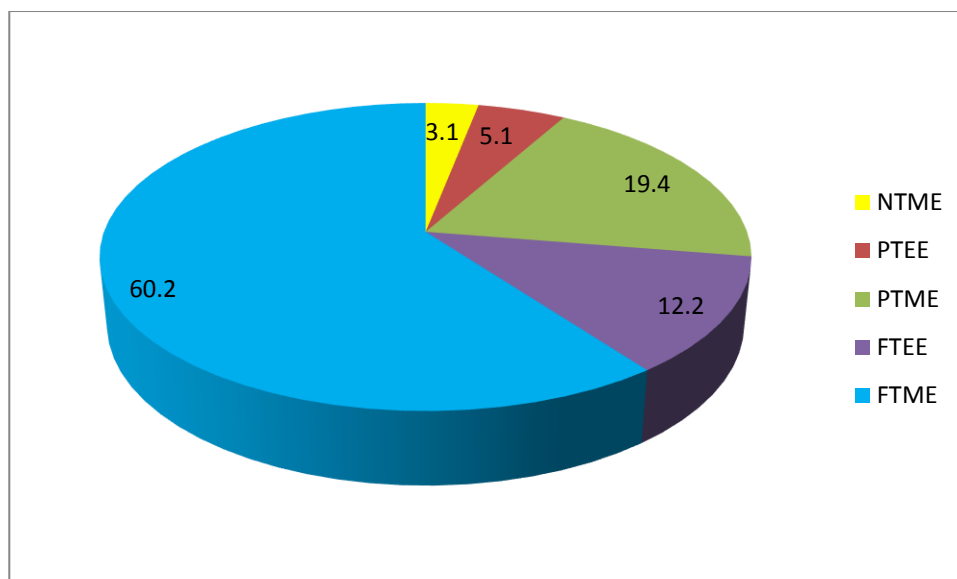


Figure 4.109: Biology (570, 571)

Sub-units labelled NTME made up 3.1% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Space*

Sub-units labelled PTEE made up 5.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *.5 *Tissue biology and regional physiology*
- *.5 * **Tissue biologie en fisiologie plaaslike***

Sub-units labelled PTME made up 19.4% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Standard* (again)
- *Bioenergetica*
- *Biodynamics*
- *Cell*

Sub-units labelled FTEE made up 12.2% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| <ul style="list-style-type: none"> • <i>Biological control: control of an organism's own physiological processes</i> • <i>Unless other instructions are given, class a subject with aspects in two or more subdivisions of 571–575 in the number coming last, e.g., cytology of animal circulatory system 573.1 (not 571.1 or 571.6)</i> • <i>Including reproduction and growth of cells; developmental genetics; embryology; development after embryo; maturation; miscellaneous topics in reproduction (limited to sex differentiation, alternation of generations ...)</i> | <ul style="list-style-type: none"> • <i>Biologiese beheer: beheer van eie fisiologiese prosesse 'n organisme se</i> • <i>Tensy ander instruksies gegee word, klas 'n onderwerp met aspekte in twee of meer onderafdelings van 571–575 in die aantal laaste kom, bv sitologie van die dier bloedsomloopstelsel 573.1 (571.1 nie of 571.6)</i> • <i>Insluitend voortplanting en groei van selle; ontwikkelingsbehoefte genetika; embriologie; ontwikkeling ná embrio; veroudering; diverse onderwerpe in voortplanting (beperk tot seks differensiasie, generasiewisseling ...)</i> |
|---|---|

Sub-units labelled FTME made up 60.2% of the total with unnecessary use of or absence of articles.

Table 4.78 and Figure 4.110 indicate Level of comprehensiveness.

Table 4.78: Level of comprehensiveness in 570 and 571

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	3	5	19	12	59
%	3.1	5.1	19.4	12.2	60.2

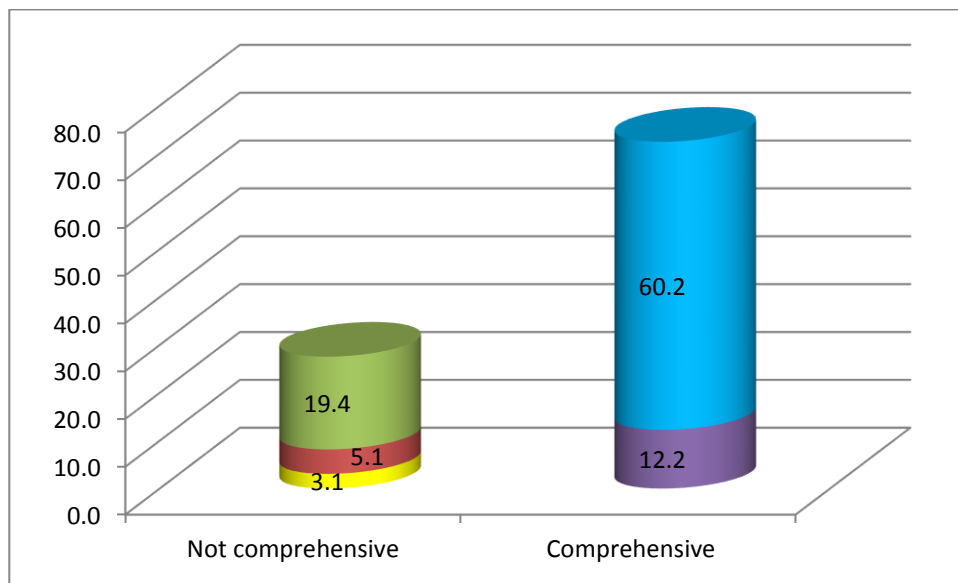


Figure 4.110: Level of comprehensiveness in 570 and 571

Google Translate translated 72.4% or 71 out of 98 sub-units.

Table 4.79 (page 250) and Figure 4.111 (page 250) indicate Degree of editorial effort.

Table 4.79: Degree of editorial effort in 570 and 571

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	5	12	3	19	59
%	5.1	12.2	3.1	19.4	60.2

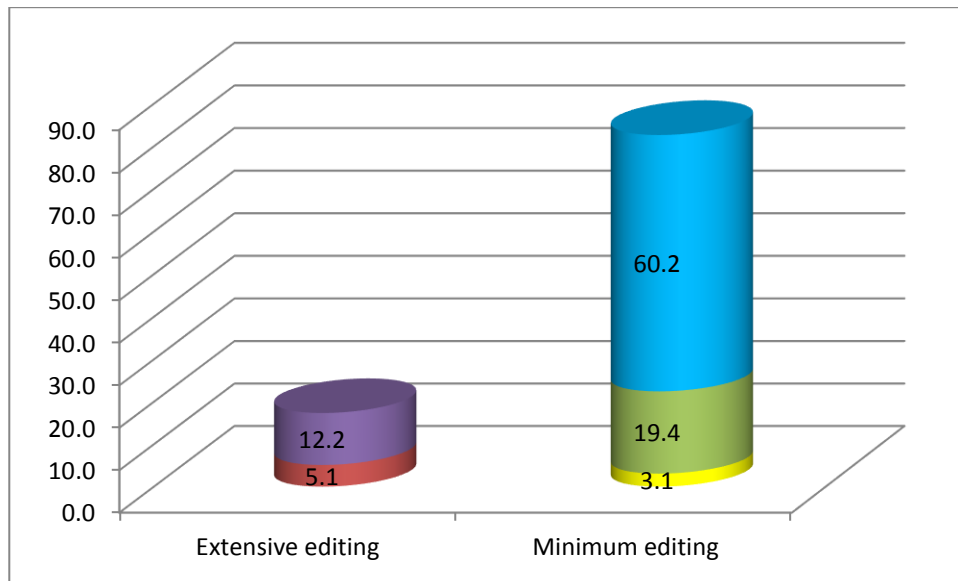


Figure 4.111: Degree of editorial effort in 570 and 571

82.7% (81 out of 98 sub-units) of the translation needs little or no editing.

4.7.5 Summary of the 500 main class

Table 4.80 (page 251) presents a summary of this class.

Table 4.80: Summary of the 500 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
510–519	109	68.8	510–519	109	71.6
570, 571	98	72.4	500–509	51	80.4
530–539	141	74.5	570, 571	98	82.7
500–509	51	76.5	530–539	141	82.9
Average %		73.1	Average %		79.4

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

One of the four units has a comprehensiveness of 75% and the other three are above 66.7% which indicates that the translations were comprehensive, averaging 73.1%.

In three of the four units 75% or more of the translation needs little or no editing; in the fourth 71.6% of the translation needs little or no editing, averaging 79.4% which indicates minimum editorial effort.

4.8 The 600 main class

This main class does not have any unassigned divisions. The researcher used three full divisions which do not have unassigned sections.

It is necessary to look at the introductory 600–609 as introduction to the division. The other two full divisions are 630–639 and 640–649.

4.8.1 Technology (Applied sciences) (600–609)

The researcher used the whole 600–609 division. It does not have unassigned sections. It contains the summary for the whole main class and resembles Table 1 (Standard subdivisions) except for 604 and 608.

Figure 4.112 gives an overview of each evaluation category, measured as a percentage.

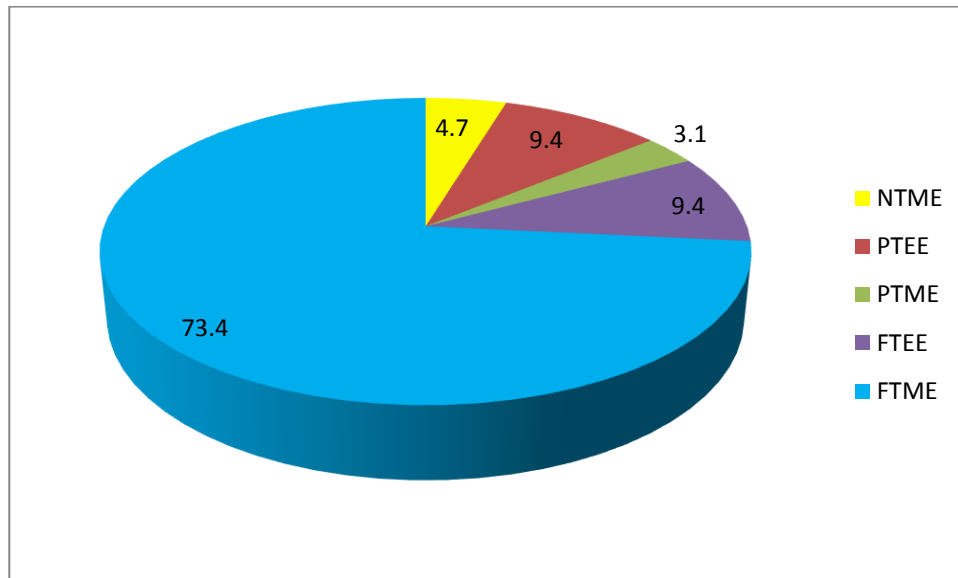


Figure 4.112: Technology (Applied sciences) (600–609)

Sub-units labelled NTME made up 4.7% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Commercial miscellany* (again)
- *Management* (again)

Sub-units labelled PTEE made up 9.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Class commercial miscellany of products and services used in*
- *Klas kommersiële **bonte verskeidenheid** produkte en*

individual and family living in 640.29; class commercial miscellany of manufactured products in 670.29; class interdisciplinary commercial miscellany in 381.029

*dienste wat gebruik word in individuele en familie lewe in 640.29; klas kommersiële **Miscellany** van vervaardigde produkte in 670.29; klas interdissiplinêre kommersiële **Miscellany** in 381.029*

Sub-units labelled PTME made up 3.1% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Serial* (again)

Sub-units labelled FTEE made up 9.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *For architectural drawing, see 720.28. For technical drawing in a specific subject, see the subject, e.g., map drawing 526, electronic drafting 621.381*
- *Vir argitektoniese tekening sien 720.28. Vir tegniese tekening in 'n spesifieke onderwerp, sien die onderwerp, bv **kaart teken** 526, **elektroniese opstel** 621.381*
- *Class interdisciplinary works on trademarks and service marks in 929.9*
- *Klas interdissiplinêre werk op handelsmerke en **diens punte** in 929.9*
- *Including arrangement and organization of drafting rooms, preservation*
- *Insluitend reëling en organisasie van **opstel kamers**, bewaring*

Sub-units labelled FTME made up 73.4% of the total with unnecessary use of or absence of articles.

Table 4.81 (page 254) and Figure 4.113 (page 254) indicate Level of comprehensiveness.

Table 4.81: Level of comprehensiveness in 600–609

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	3	6	2	6	47
%	4.7	9.4	3.1	9.4	73.4

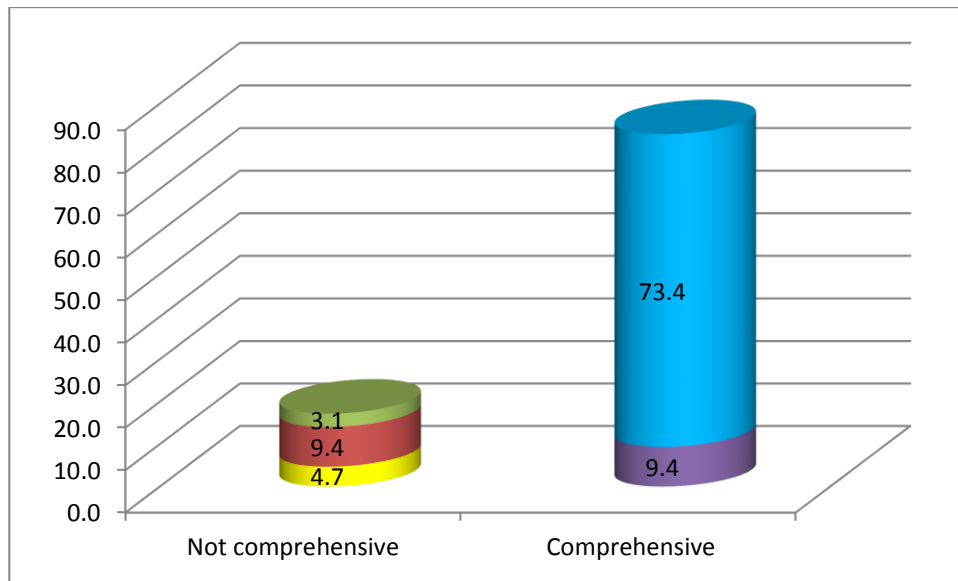


Figure 4.113: Level of comprehensiveness in 600–609

Google Translate translated 82.8% or 53 out of 64 sub-units.

Table 4.82 and Figure 4.114 (page 255) indicate Degree of editorial effort.

Table 4.82: Degree of editorial effort in 600–609

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	6	6	3	2	47
%	9.4	9.4	4.7	3.1	73.4

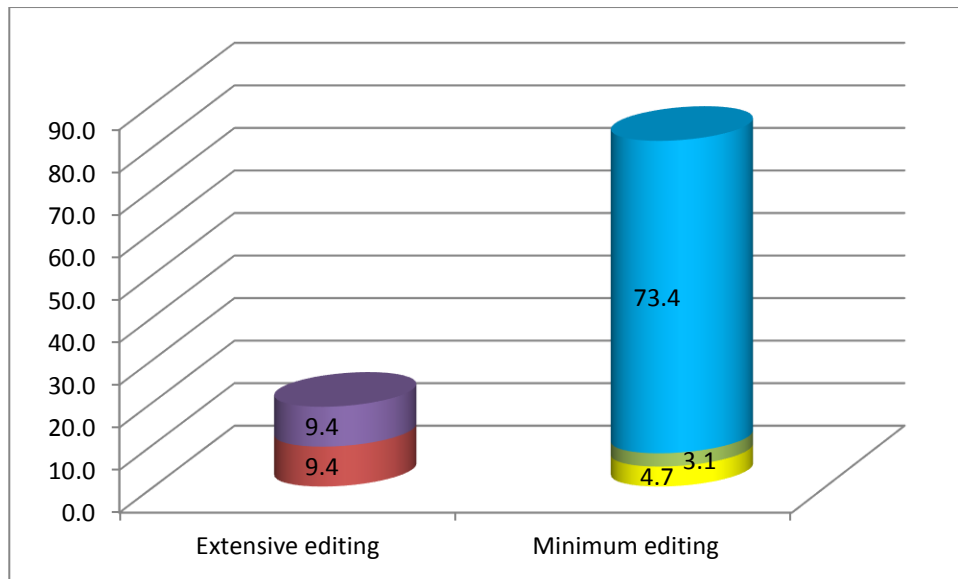


Figure 4.114: Degree of editorial effort in 600–609

81.2% (52 out of 64 sub-units) of the translation needs little or no editing.

4.8.2 Agriculture and related technologies (630–639)

The researcher used the whole 630–639 division and it does not have unassigned sections.

Figure 4.115 (page 256) gives an overview of each evaluation category, measured as a percentage.

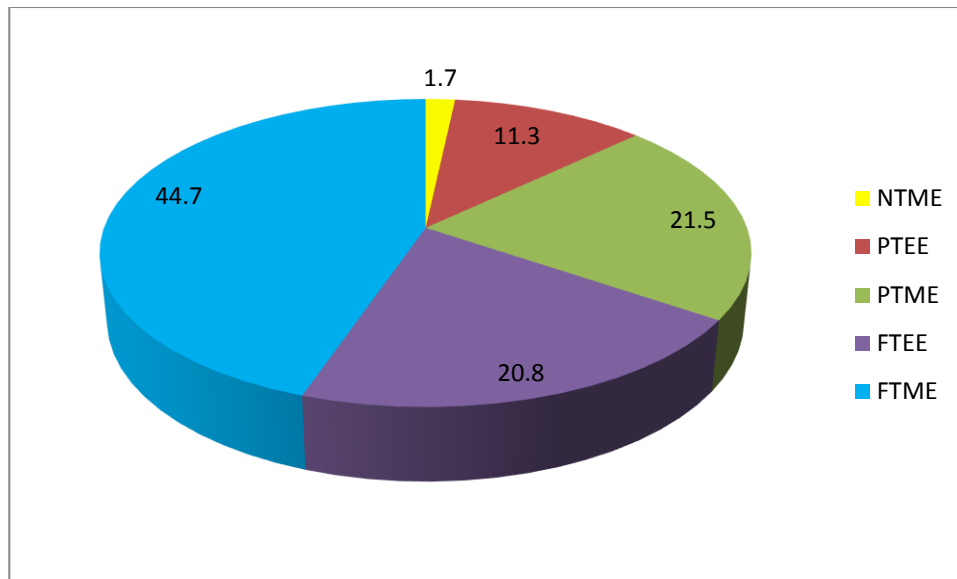


Figure 4.115: Agriculture and related technologies (630–639)

Sub-units labelled NTME made up 1.7% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Horses*
- *Swine*
- *Cats*

Sub-units labelled PTEE made up 11.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Standard subdivisions are added for legumes and forage crops other than grasses and legumes together, for legumes alone</i> | <ul style="list-style-type: none"> • Standard onderafdelings is bygevoeg vir peulgewasse en ander as grasse en peulgewasse saam voergewasse vir peulplante alleen |
| <ul style="list-style-type: none"> • <i>Including pastures and their grasses; range management; cultivation, harvesting, related</i> | <ul style="list-style-type: none"> • <i>Insluitende weiding en hul grasse; verskeidenheid bestuur; verbouing, oes, verwante</i> |

*topics of forage crops;
bluegrasses; orchard grass;
bent grasses; timothy; cereal
grasses; sedges*

- *Including birds raised for
feathers; game birds;
ornamental birds, songbirds,
hawks; aviary birds, cage birds;
ratites*

- *and other plant and animal names in the text of 630–639 not translated by
Google Translate*

*onderwerpe van voergewasse;
bluegrasses; boord gras; **gebuig**
grasse; **Timothy**; graan grasse;
biesies*

- *Insluitend **voëls wat vir vere**;
spel voëls; ornamentele voëls,
zangvogels, valke, **hokvoëls**,
hok voëls; **ratites***

Sub-units labelled PTME made up 21.5% of the total. Examples of words not translated by Google Translate are:

- *Table (again)*
- *Standard (again)*
- *Non-agricultural*
- *Tools*
- *Veterinary*

Sub-units labelled FTEE made up 20.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *See also 307.72 for rural
sociology; also 333.76 for
agricultural land economics;
also 909 for general works on
rural conditions and civilization;
also 930–990 for rural
conditions and civilization in
specific areas*
- *Sien ook 307.72 vir landelike
sosiologie; ook 333.76 vir
landbougrond ekonomie; ook 909
vir **algemene werk op die**
platteland voorwaardes en
beskawing; ook 930–990 vir
landelike voorwaardes en
beskawing in spesifieke gebiede*

- .5 Chickens and other kinds of domestic birds
- Class here equines
- 638 Insect culture
- .5 Hoenders en ander **vor**me van **binnelandse** voëls
- Klas hier **ekwide**
- 638 Insek **kultuur**

Sub-units labelled FTME made up 44.7% of the total with unnecessary use of or absence of articles.

Table 4.83 and Figure 4.116 indicate Level of comprehensiveness.

Table 4.83: Level of comprehensiveness in 630–639

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	5	32	61	59	127
%	1.7	11.3	21.5	20.8	44.7

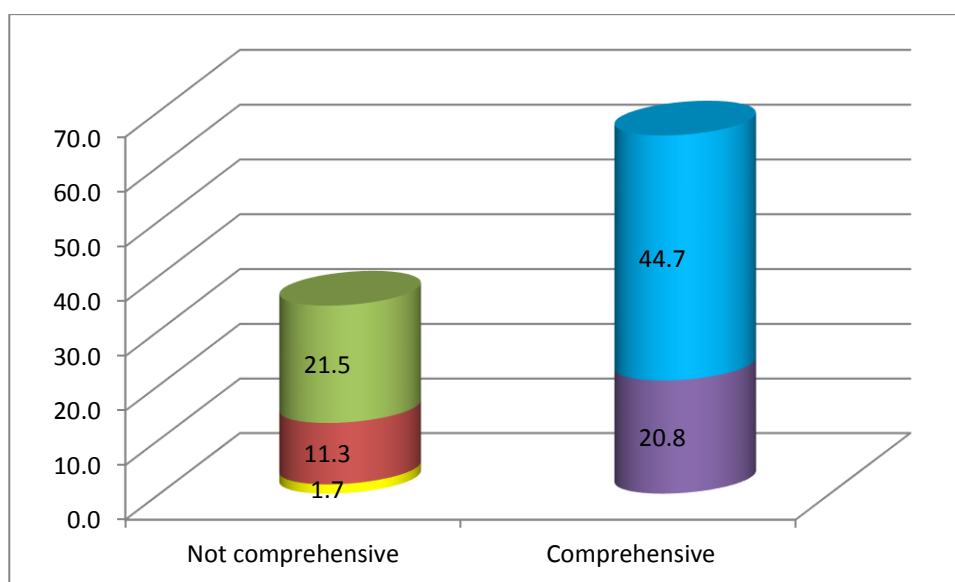


Figure 4.116: Level of comprehensiveness in 630–639

Google Translate translated 65.5% or 186 out of 284 sub-units.

Table 4.84 and Figure 4.117 indicate Degree of editorial effort.

Table 4.84: Degree of editorial effort in 630–639

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	32	59	5	61	127
%	11.3	20.8	1.7	21.5	44.7

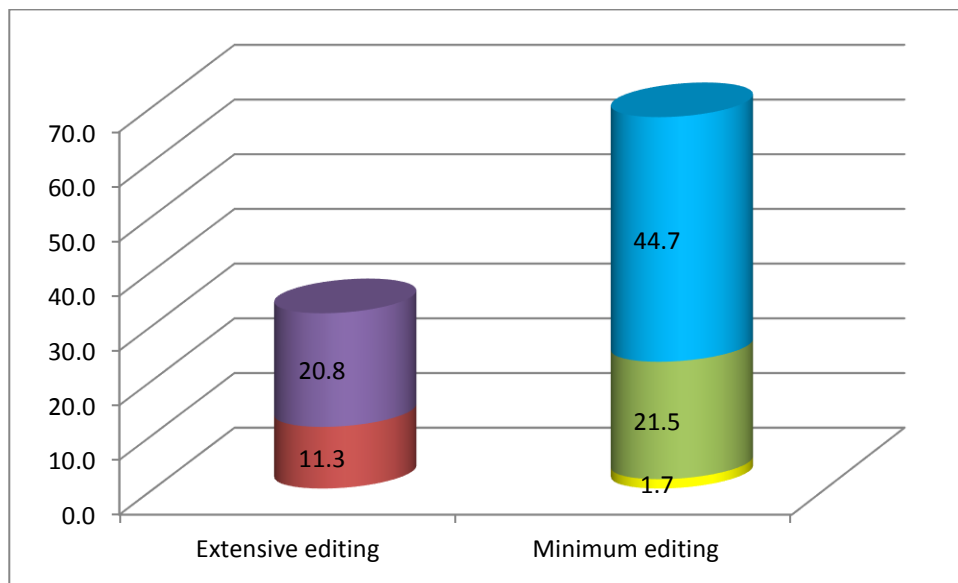


Figure 4.117: Degree of editorial effort in 630–639

67.9% (193 out of 284 sub-units) of the translation needs little or no editing.

4.8.3 Home and family management (640–649)

The researcher used the whole 640–649 and it does not have unassigned sections.

Figure 4.118 (page 260) gives an overview of each evaluation category, measured as a percentage.

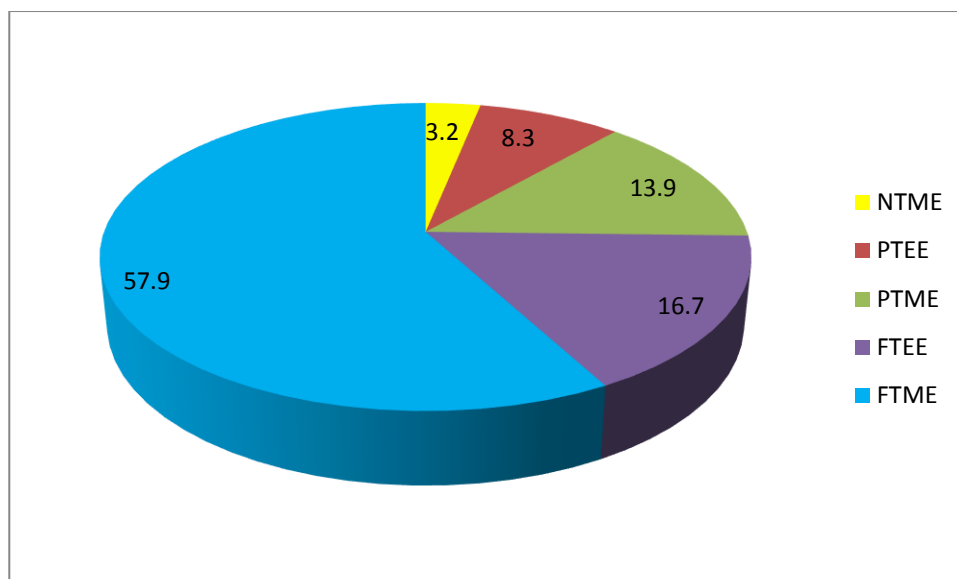


Figure 4.118: Home and family management (640–649)

Sub-units labelled NTME made up 3.2% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Commercial miscellany* (again)
- *Management* (again)
- *Men* (again)

Sub-units labelled PTEE made up 8.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Class here dressmaking, tailoring; construction of casual wear (sportswear) Class headwear in 646.5; class footwear in 685; class handcrafted costume jewelry in 745.594*
- *Klas hier kleremakery; **konstruksie van gemaklik dra (sport) Klas Hoofddeksels** in 646.5; klas skoene in 685; klas handgemaakte kostuum juweliersware in 745.594*

- *Including baking and roasting; braising, boiling, simmering, steaming, stewing; barbecuing, broiling, grilling; frying and sautéing; preparation of cold dishes; chilled dishes*
- *Class a side dish, salad, sandwich or stuffed food regarded as a main dish with the topic elsewhere in 641.8, e.g., soup 641.81, hamburger on a roll 641.84*
- *Insluitend bak en braai; smoor, kook, prut, **stomende**, stowe; **barbecuen snik heet, beleef**; braai en soteer; voorbereiding van die koue geregte; **verkoel** geregte*
- *Klas 'n **kant** gereg, slaai, **sandwich** of **opgestopte** kos beskou as 'n hoofgereg met die onderwerp elders in 641.8, bv, sop 641.81, hamburger op 'n **roll** 641.84*

Sub-units labelled PTME made up 13.9% of the total. Examples of words not translated by Google Translate are:

- *Table (again)*
- *Standard (again)*
- *Nondominant*
- *Cocktails*
- *Grooming*

Sub-units labelled FTEE made up 16.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class home construction of household articles made of fabric in 646.2; class manufacture of household furnishings in 684; class home construction of furniture in 684.1; class artistic aspects of furniture and accessories in*
- *Klas **huis** konstruksie van huishoudelike artikels gemaak van **stof** in 646.2; klas vervaardiging van huishoudelike meubels in 684; klas **huis** konstruksie van die meubels in 684.1; klas artistieke aspekte van meubels en*

- Use 640 for housekeeping covering activities related to running the home, e.g., preparing meals and doing routine repairs as well as cleaning. Use 648 for housekeeping limited to cleaning
- Class here sandwiches and related dishes of any type, e.g., open-faced sandwiches, grilled sandwiches, wraps
- Gebruik 640 vir **huishouding wat aktiwiteite wat verband hou hardloop die huis**, bv, die voorbereiding van etes en **doen roetine herstelwerk** asook skoonmaak. Gebruik 648 vir huishouding beperk tot skoonmaak
- Klas hier toebroodjies en verwante geregte van enige soort, bv, oop **gesig** toebroodjies, geroosterde toebroodjies, **vou**

Sub-units labelled FTME made up 57.9% of the total with unnecessary use of or absence of articles.

Table 4.85 and Figure 4.119 (page 263) indicate Level of comprehensiveness.

Table 4.85: Level of comprehensiveness in 640–649

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	8	21	35	42	146
%	3.2	8.3	13.9	16.7	57.9

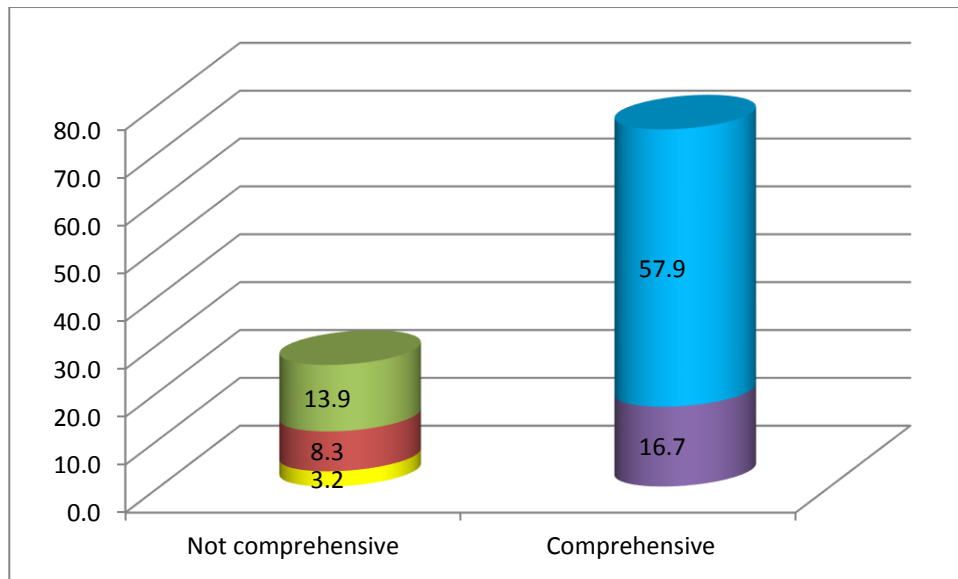


Figure 4.119: Level of comprehensiveness in 640-649

Google Translate translated 74.6% or 188 out of 252 sub-units.

Table 4.86 and Figure 4.120 (page 264) indicate Degree of editorial effort.

Table 4.86: Degree of editorial effort in 640-649

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	21	42	8	35	146
%	8.3	16.7	3.2	13.9	57.9

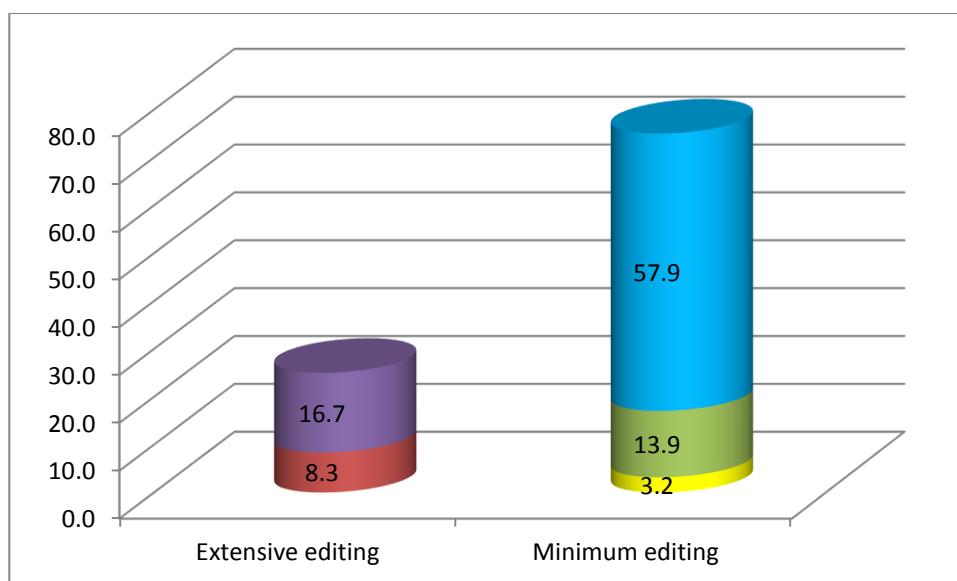


Figure 4.120: Degree of editorial effort in 640–649

75% (189 out of 252 sub-units) of the translation needs little or no editing.

4.8.4 Summary of the 600 main class

Table 4.87 presents a summary of this class.

Table 4.87: Summary of the 600 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
630–639	284	65.5	630–639	284	67.9
640–649	252	74.6	640–649	252	75
600–609	64	82.8	600–609	64	81.2
Average %		74.3	Average %		74.7

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

One of the three units has a comprehensiveness of 75% or more and one more is above 66.7% which indicates that the translations were comprehensive, averaging 74.3%.

In two of the three units 75% or more of the translation needs little or no editing; in the other 67.9% of the translation needs little or no editing, averaging 74.7% which indicates minimum editorial effort.

4.9 The 700 main class

This main class does not have any unassigned divisions. The researcher used four full divisions with three unassigned sections (762, 768 and 775).

It is necessary to look at the introductory 700–709. The other three full divisions are 720–729, 760–769 and 770–779.

4.9.1 The arts (700–709)

The researcher used the whole 700–709 division and it does not have unassigned sections. It contains the summary for the whole main class and resembles Table 1 (Standard subdivisions), except for 708.

Figure 4.121 (page 266) gives an overview of each evaluation category, measured as a percentage.

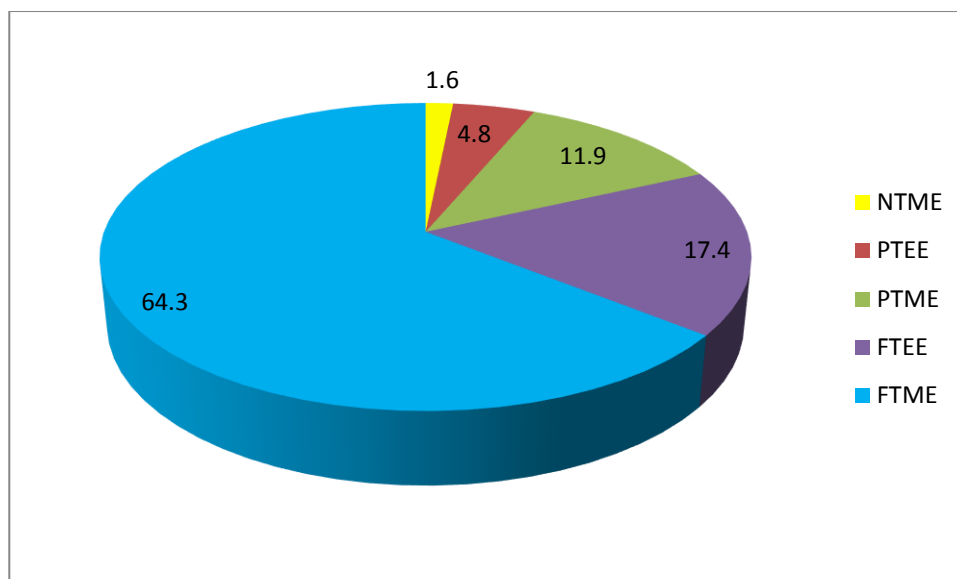


Figure 4.121: The arts (700–709)

Sub-units labelled NTME made up 1.6% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Commercial miscellany* (again)

Sub-units labelled PTEE made up 4.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| • 702 <i>Miscellany of fine and decorative arts</i> | • 702 <i>Miscellany Beeldende kunste</i> |
| • Add to base number 708.1 the numbers following —7 in notation 73–79 from Table 2, e.g., galleries, museums, private collections in <i>Pennsylvania</i> 708.148 | • Voeg by basis <i>getal 708.1 die getalle volgende -7 in notasie 73–79 van Table 2, bv, galerye, museums, private versamelings in Pennsylvania</i> 708.148 |

Sub-units labelled PTME made up 11.9% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Standard* (again)
- *Management* (again)
- *Inherent*
- *Performance art*
- *Serial* (again)
- *Geographic* (again)

Sub-units labelled FTEE made up 17.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>Class here annual reports dealing with acquisitions, activities, programs, projects</i> • <i>Including testing and measurement, use of artists' models; techniques of reproduction, execution, identification</i> • <i>Description, critical appraisal, techniques, procedures, apparatus, equipment, materials of the fine, decorative, literary, performing, recreational arts</i> | <ul style="list-style-type: none"> • <i>Klas hier jaarverslae hantering verkrygings, aktiwiteite, programme, projekte</i> • <i>Insluitende toetsing en meting, die gebruik van modelle kunstenaars; tegnieke van voortplanting, uitvoering, identifikasie</i> • <i>Beskrywing, kritiese beoordeling, tegnieke, prosedures, apparaat, toerusting, materiaal van die boete, dekoratief, literêre, uitvoerende, ontspannings kunste</i> |
|---|--|

Sub-units labelled FTME made up 64.3% of the total with unnecessary use of or absence of articles.

Table 4.88 (page 268) and Figure 4.122 (page 268) indicate Level of comprehensiveness.

Table 4.88: Level of comprehensiveness in 700–709

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	6	15	22	81
%	1.6	4.8	11.9	17.4	64.3

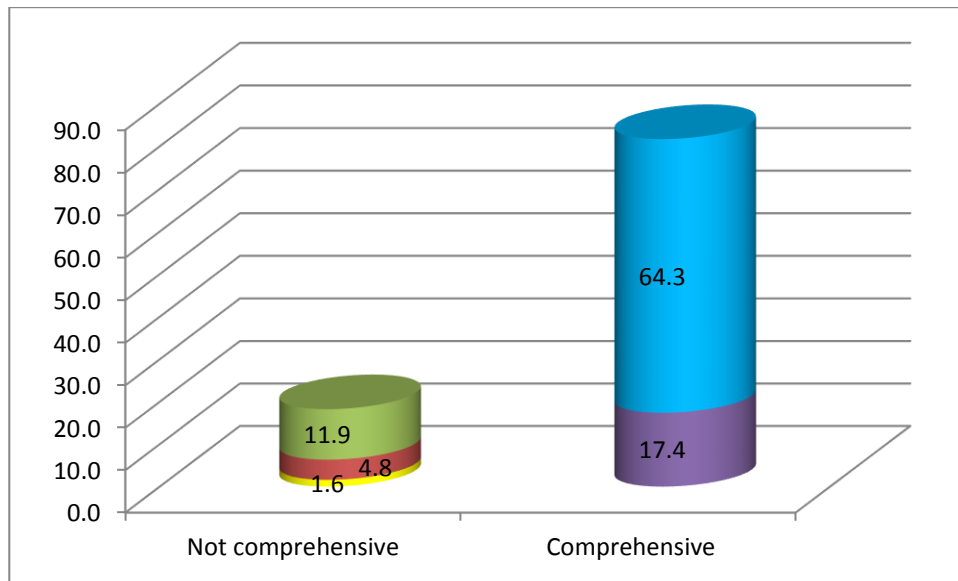


Figure 4.122: Level of comprehensiveness in 700–709

Google Translate translated 81.7% or 103 out of 126 sub-units.

Table 4.89 and Figure 4.123 (page 269) indicate Degree of editorial effort.

Table 4.89: Degree of editorial effort in 700–709

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	6	22	2	15	81
%	4.8	17.4	1.6	11.9	64.3

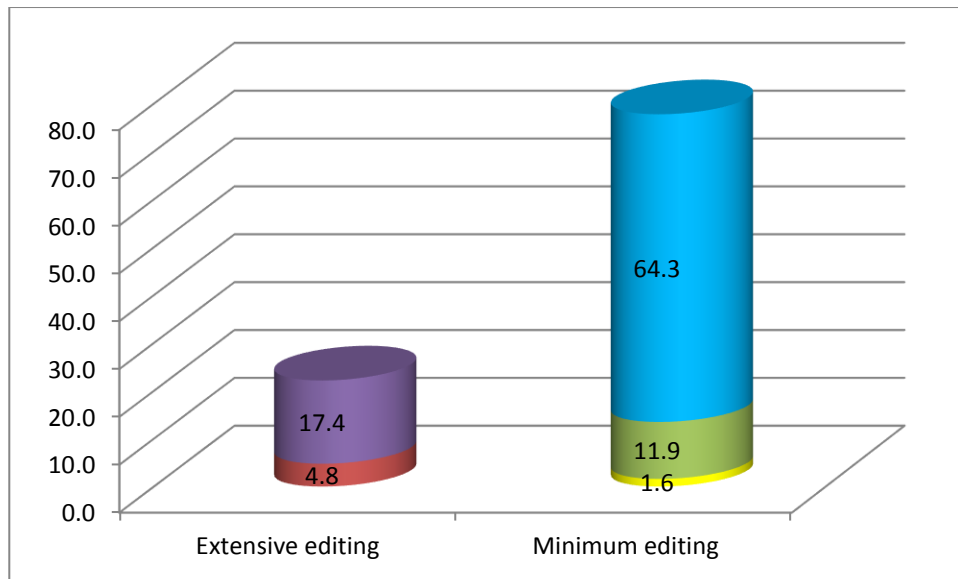


Figure 4.123: Degree of editorial effort in 700–709

77.8% (98 out of 126 sub-units) of the translation needs little or no editing.

4.9.2 Architecture (720–729)

The researcher used the whole 720–729 division and it does not have unassigned sections.

Figure 4.124 (page 270) gives an overview of each evaluation category, measured as a percentage.

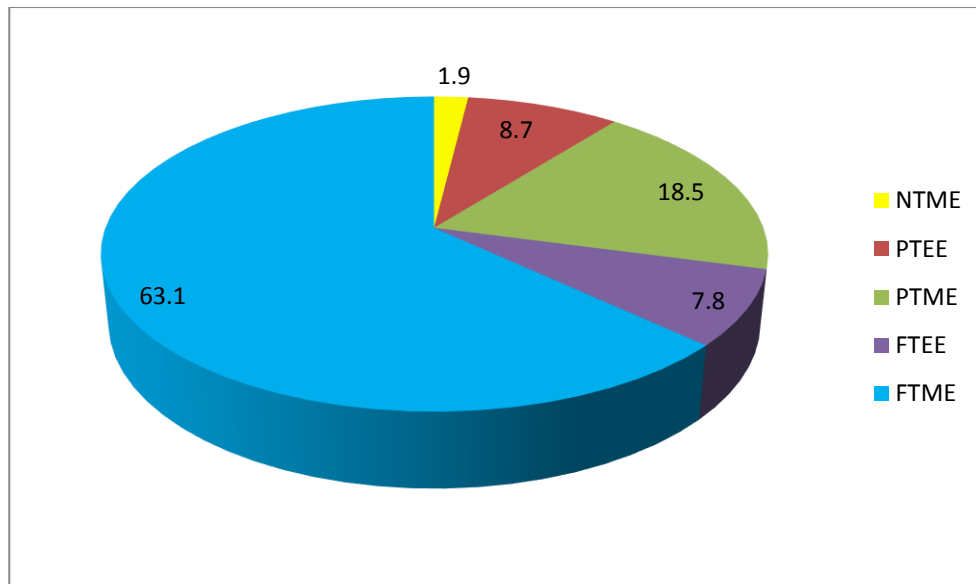


Figure 4.124: Architecture (720–729)

Sub-units labelled NTME made up 1.9% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Architecture*

Sub-units labelled PTEE made up 8.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>Class engineering of forts and fortresses, engineering of naval facilities, ... class engineering of harbors, ports roadsteads in 627 ...</i> | <ul style="list-style-type: none"> • <i>Klas ingenieurswese forte en vestings, ingenieurswese van die vloot fasiliteite, ... klas ingenieurswese van hawens, hawens, roadsteads in 627 ...</i> |
| <ul style="list-style-type: none"> • <i>Including buildings associated with non-Christian religions (e.g., temples and shrines, mosques and minarets, synagogues and Jewish</i> | <ul style="list-style-type: none"> • <i>Insluitend geboue wat verband hou met die nie-Christelike godsdienste (bv tempels en heiligdomme, moskees en minarette, sinagoges en Joodse</i> |

temples); accessory houses of worship; monastic buildings; abbeys, convents, friaries, monasteries, priories; mortuary chapels and tombs

*tempel); **accessory** huise van aanbidding; klooster geboue; abdye, **kloosters, friaries, kloosters, abdijen**; lykshuis **kapellen** en grafte*

Sub-units labelled PTME made up 18.5% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Standard* (again)
- *Vacation*
- *Architectural*
- *Accessory*

Sub-units labelled FTEE made up 7.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Including design in specific planes (e.g., design in vertical plane, design in horizontal plane); decoration in specific mediums (e.g., decoration in paint, decoration in relief, decoration in veneer and incrustation, decoration in mosaic, decoration in ornamental glass)*
- *Insluitende die ontwerp in spesifieke **vliegtuie** (bv, ontwerp in vertikale vlak, ontwerp in horisontale vlak); versiering in spesifieke mediums (bv versiering in verf, versiering **verligting**, versiering in fineer en **omkorsting**, versiering in mosaïek, versiering in ornamentele glas)*
- *Including conservatories (botanical research buildings) [formerly 728]*
- *Insluitend **stoep** (botaniese navorsing geboue) [voorheen 728]*

Sub-units labelled FTME made up 63.1% of the total with unnecessary use of or absence of articles.

Table 4.90 and Figure 4.125 indicate Level of comprehensiveness.

Table 4.90: Level of comprehensiveness in 720–729

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	9	19	8	65
%	1.9	8.7	18.5	7.8	63.1

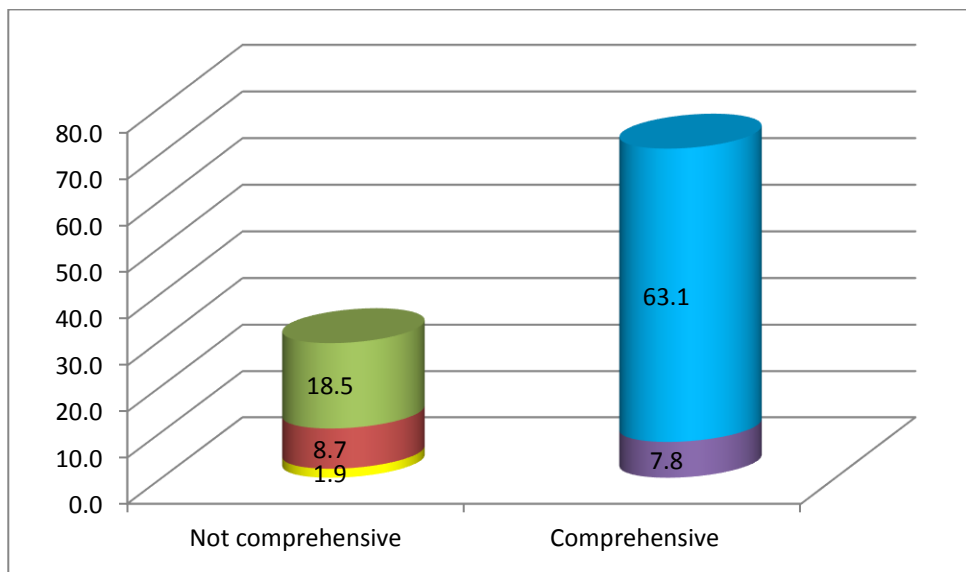


Figure 4.125: Level of comprehensiveness in 720–729

Google Translate translated 70.9% or 73 out of 103 sub-units.

Table 4.91 (page 273) and Figure 4.126 (page 273) indicate Degree of editorial effort.

Table 4.91: Degree of editorial effort in 720–729

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	9	8	2	19	65
%	8.7	7.8	1.9	18.5	63.1

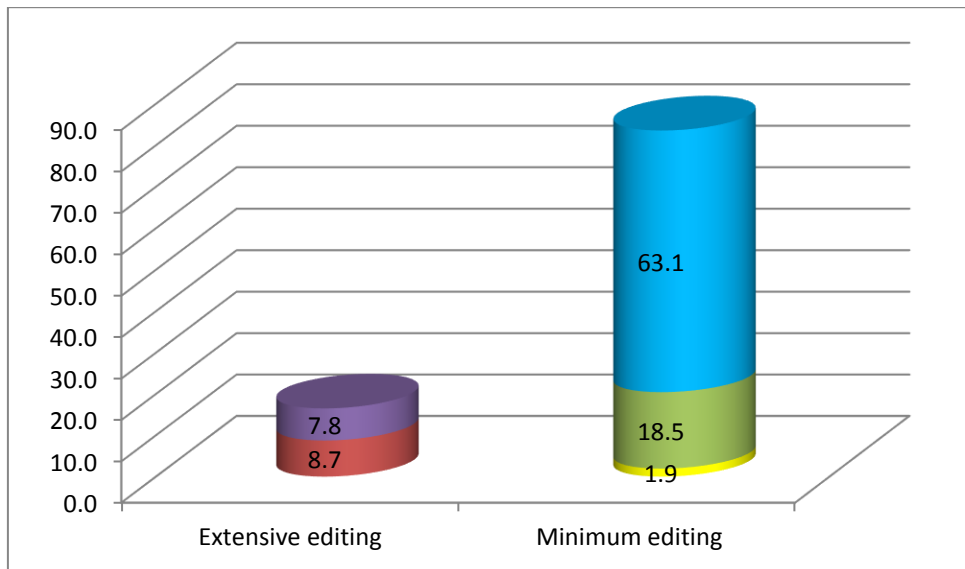


Figure 4.126: Degree of editorial effort in 720–729

83.5% (86 out of 103 sub-units) of the translation needs little or no editing.

4.9.3 Printmaking and prints (760–769)

The researcher used the whole 760–769 division. Sections 762 and 768 are unassigned.

Figure 4.127 (page 274) gives an overview of each evaluation category, measured as a percentage.

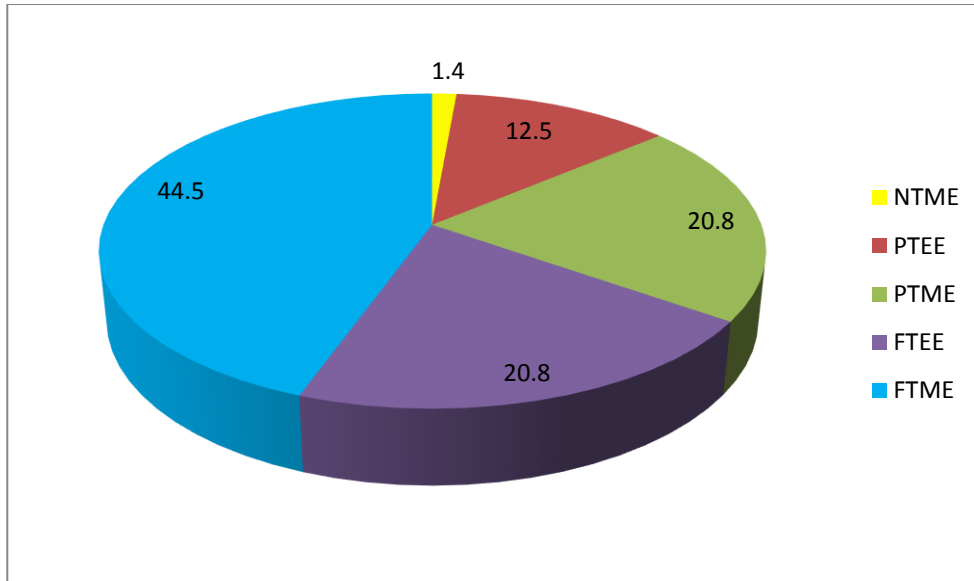


Figure 4.127: Printmaking and prints (760–769)

Sub-units labelled NTME made up 1.4% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 12.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Fine art of executing a printing block or plate representing a picture or design conceived by the printmaker or copied from another artist's painting or drawing or from a photograph</i> | <ul style="list-style-type: none"> • <i>Fyn kuns van uitvoering van 'n Printing blok of plaat wat 'n prentjie of ontwerp verwek is deur die drukkunstenaar of kopieer van die skildery of tekening 'n ander kunstenaar se of van 'n foto</i> |
| <ul style="list-style-type: none"> • <i>Class illustrated postcards in 741.6; class stamps other than for prepayment of postage in 769.5</i> | <ul style="list-style-type: none"> • <i>Klas Illustrated poskaarte in 741.6; behalwe vir voorafbetaalde van posgeld in 769.5 klas Stamps</i> |

Sub-units labelled PTME made up 20.8% of the total. Examples of words not translated by Google Translate are:

- *Geographic* (again)
- *Metal*
- *Edition* (again)

Sub-units labelled FTEE made up 20.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Do not use for collecting; class in 769*
- *for etching and drypoint, see 767*
- *Class prints other than postage stamps on a specific subject regardless of form in 769; class comprehensive works on posters in 741.6*
- *Class techniques, procedures, apparatus, equipment, materials of reproduction in 769; class maintenance and repair in 769.028; class techniques, procedures, apparatus, equipment, materials employed by individual printmakers in 769.92; class comprehensive works in 760.28*
- ***Moenie vir*** *versameling; klas in 769*
- ***vir jou kyk en droë naald***, *sien 767*
- ***behalwe posseëls op 'n spesifieke onderwerp, ongeag vorm in 769 Klas afdrukke***; *klas omvattende werke op plakkate in 741.6*
- *Klas tegnieke, prosedures, apparaat, toerusting, materiaal van voortplanting in 769; klas onderhoud en herstel in 769.028; klas tegnieke, prosedures, apparaat, toerusting, materiaal **wat deur individuele prent kunstenaars** in 769.92; klas omvattende werke in 760.28*

Sub-units labelled FTME made up 44.5% of the total with unnecessary use of or absence of articles.

Table 4.92 and Figure 4.128 indicate Level of comprehensiveness.

Table 4.92: Level of comprehensiveness in 760–769

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	9	15	15	32
%	1.4	12.5	20.8	20.8	44.5

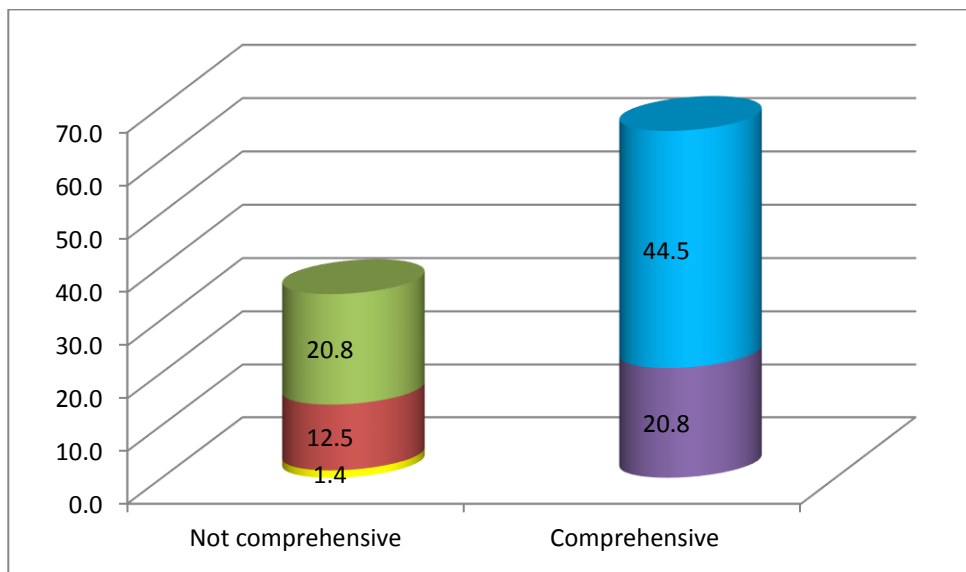


Figure 4.128: Level of comprehensiveness in 760–769

Google Translate translated 65.3% or 47 out of 72 sub-units.

Table 4.93 (page 277) and Figure 4.129 (page 277) indicate Degree of editorial effort.

Table 4.93: Degree of editorial effort in 760–769

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	9	15	1	15	32
%	12.5	20.8	1.4	20.8	44.5

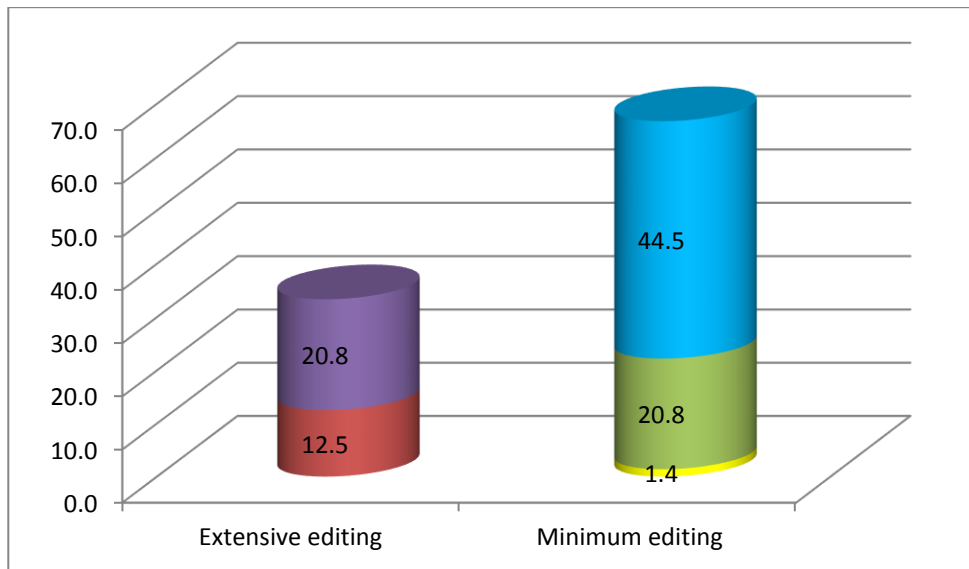


Figure 4.129: Degree of editorial effort in 760–769

66.7% (48 out of 72 sub-units) of the translation needs little or no editing.

4.9.4 Photography, computer art, cinematography, videography (770–779)

The researcher used the whole 770–779 division. Section 775 is unassigned.

Figure 4.130 (page 278) gives an overview of each evaluation category, measured as a percentage.

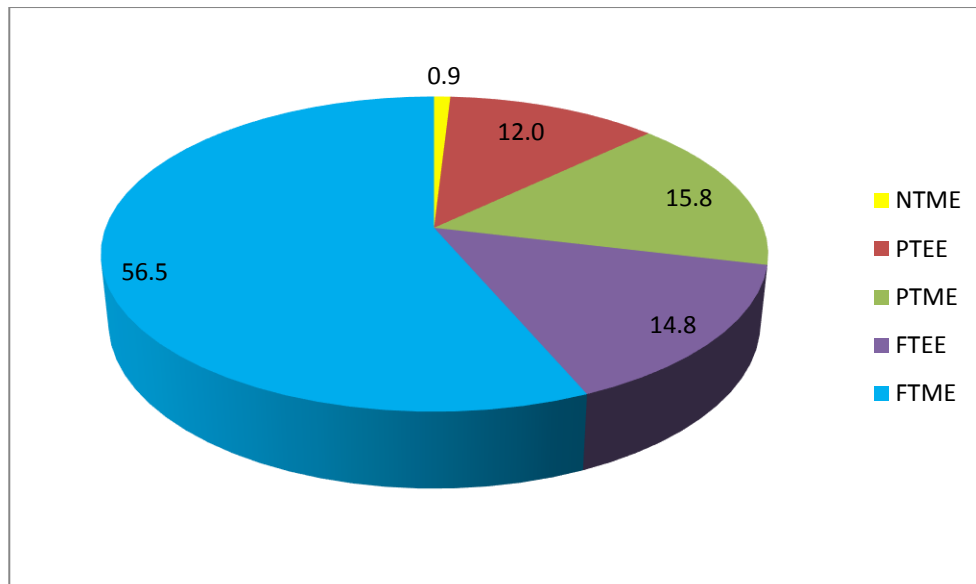


Figure 4.130: Photography, computer art, cinematography, videography (770–779)

Sub-units labelled NTME made up 0.9% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 12% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>Standard subdivisions are added for photography, computer art, cinematography, videography together; for photography alone</i> | <ul style="list-style-type: none"> • <i>Standard onderafdelings bygevoeg vir fotografie, rekenaar kuns, kinematografie, videografie saam; alleen fotografie</i> |
| <ul style="list-style-type: none"> • <i>Class here conventional cinematography (cinematography using film), digital cinematography and videography, amateur and professional cinematography</i> | <ul style="list-style-type: none"> • <i>Klas hier konvensionele kinematografie (kinematografie behulp film), digitale kinematografie en videografie, amateur- en professionele kinematografie en videografie;</i> |

and videography; home video systems, television ...

home video stelsels, televisie ...

Sub-units labelled PTME made up 15.8% of the total. Examples of words not translated by Google Translate are:

- *Standard (again)*
- *Photography*
- *Filmstrips*
- *Photomicrography*
- *Home video*
- *Cartoons*

Sub-units labelled FTEE made up 14.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| • <i>Do not use for apparatus, equipment, materials; green technology</i> | • Moenie vir <i>apparaat, toerusting, materiaal, groen tegnologie</i> |
| • <i>Not provided for elsewhere</i> | • Nie waarvoor elders |
| • <i>Class short-duration flash in high-speed photography in 778.3</i> | • <i>Klas kort duur flits in 'n hoë-spoed fotografie in 778.3</i> |

Sub-units labelled FTME made up 56.5% of the total with unnecessary use of or absence of articles.

Table 4.94 (page 280) and Figure 4.131 (page 280) indicate Level of comprehensiveness.

Table 4.94: Level of comprehensiveness in 770–779

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	13	17	16	61
%	0.9	12	15.8	14.8	56.5

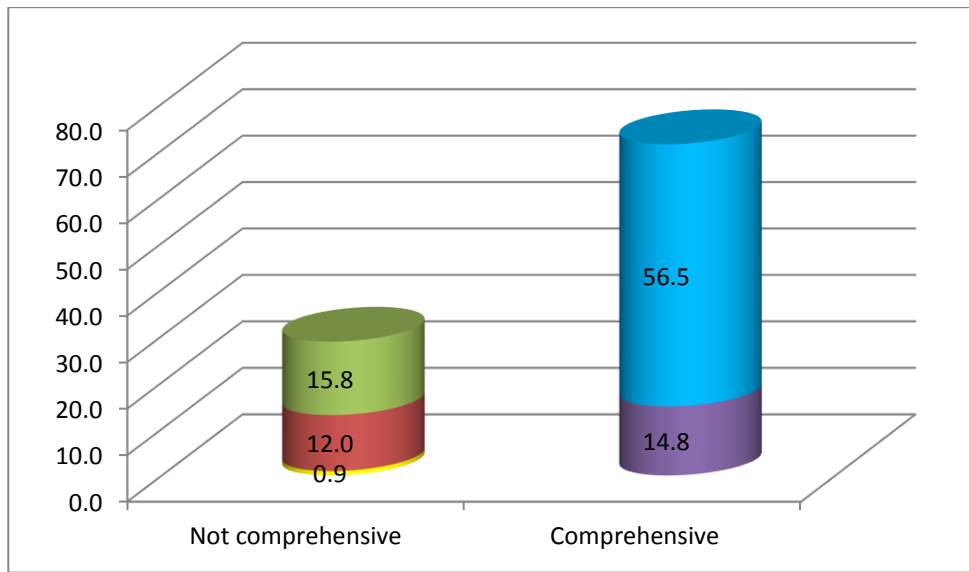


Figure 4.131: Level of comprehensiveness in 770–779

Google Translate translated 71.3% or 77 out of 108 sub-units.

Table 4.95 and Figure 4.132 (page 281) indicate Degree of editorial effort.

Table 4.95: Degree of editorial effort in 770–779

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	13	16	1	17	61
%	12	14.8	0.9	15.8	56.5

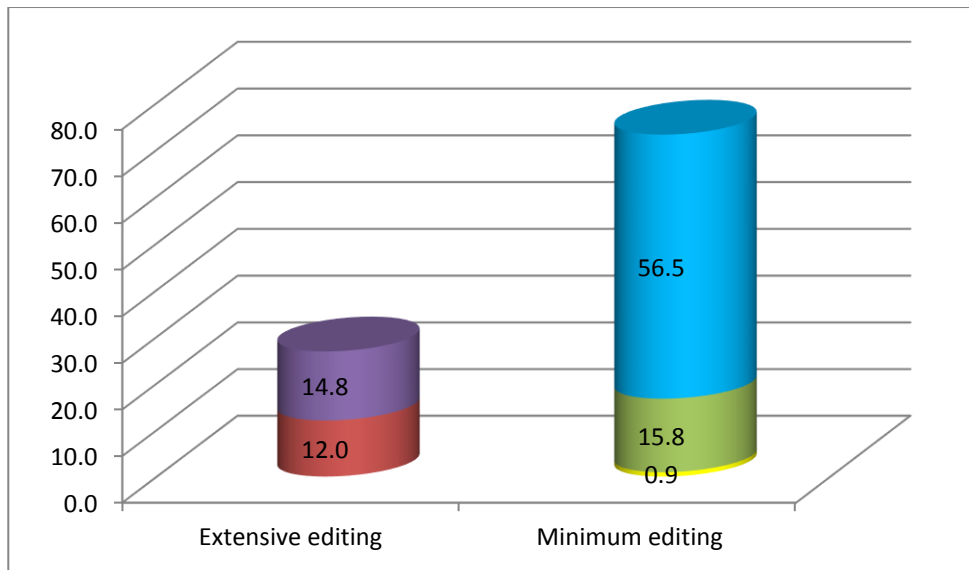


Figure 4.132: Degree of editorial effort in 770-779

73.2% (79 out of 108 sub-units) of the translation needs little or no editing.

4.9.5 Summary of the 700 main class

Table 4.96 presents a summary of this class.

Table 4.96: Summary of the 700 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
760-769	72	65.3	760-769	72	66.7
720-729	103	70.9	770-779	108	73.2
770-779	108	71.3	700-709	126	77.8
700-709	126	81.7	720-729	103	83.5
Average %		72.3	Average %		75.3

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

One of the four units has a comprehensiveness of 75% and two others are above 66.7% which indicates that the translations were comprehensive, averaging 72.3%.

In two of the four units 75% or more of the translation needs little or no editing; in the other two 66.7% or more of the translation needs little or no editing, averaging 75.3% which indicates minimum editorial effort.

4.10 The 800 main class

This main class does not have any unassigned divisions. The researcher used only two full divisions because of the repetitive nature of this class. It is necessary to look at the introductory 800–809. After that, 890–899 follows to establish if it imitates 490–499.

4.10.1 Literature (Belles-lettres) and rhetoric (800–809)

The researcher used the whole 800–809 division. It contains the summary for the whole main class and resembles Table 1 (Standard subdivisions) partially, although 808 and 809 differ. Section 804 is unassigned.

Figure 4.133 (page 283) gives an overview of each evaluation category, measured as a percentage.

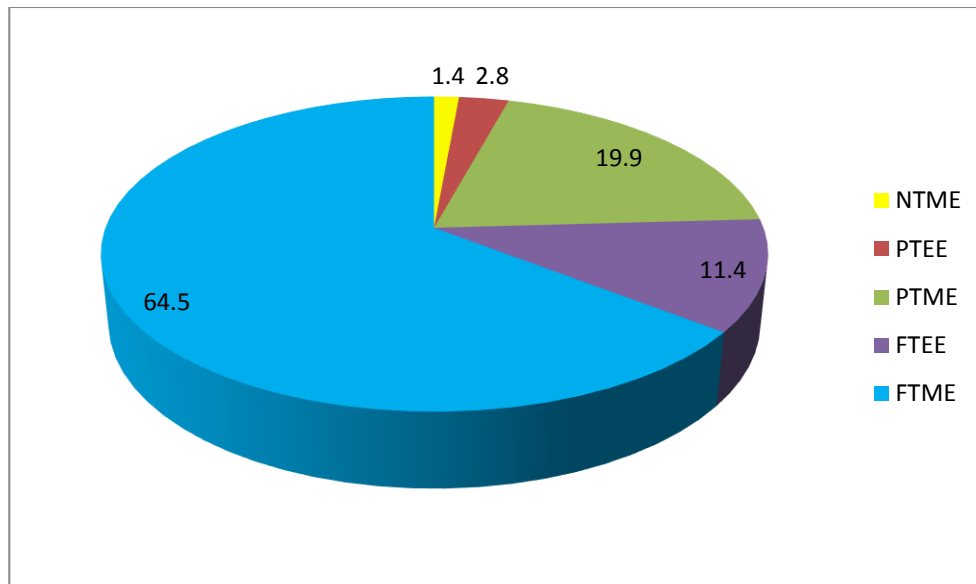


Figure 4.133: Literature (Belles-lettres) and rhetoric (800–809)

Sub-units labelled NTME made up 1.4% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Debating*

Sub-units labelled PTEE made up 2.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|---|--|
| <ul style="list-style-type: none"> • <i>After general topics (800–809) the basic arrangement is literature by language, ... More detailed instructions are given at the beginning of Table 3</i> | <ul style="list-style-type: none"> • <i>Na algemene onderwerpe (800–809) die basiese reëling is literatuur deur taal, ... Meer gedetailleerde instruksies gegee aan die begin van Table 3</i> |
| <ul style="list-style-type: none"> • <i>Class folk literature in 398.2; class librettos, poems, words written to be sung or recited with music in 780.26; class</i> | <ul style="list-style-type: none"> • <i>Klas folk letterkunde in 398.2; klas libretto, gedigte, woorde geskryf om gesing of opgesê met musiek in 780.26; klas interdisiplinêre werke</i> |

interdisciplinary works on language and literature in 400; class interdisciplinary works on the arts in 700

oor taal en letterkunde in 400; klas interdissiplinêre werk op die kunste in 700

Sub-units labelled PTME made up 19.9% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *Edition* (again)
- *Art* (again)
- *Serial* (again)
- *Letters*
- *Folk*
- *Nonliterary*
- *Jests*

Sub-units labelled FTEE made up 11.4% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Unless other instructions are given, observe the following table of preference, e.g., collections of drama written in poetry from more than two literatures 808.82*
- *Tensy ander instruksies gegee word, **in ag te neem** die volgende tabel van voorkeur, bv versamelings van drama geskryf in **die** poësie van meer as twee letterkundes 808.82*
- *Including comprehensive works consisting equally of literary texts and history, description, critical appraisal of literature with respect to groups of people*
- *Insluitend omvattende **werk ewe bestaande** uit literêre tekste en geskiedenis, beskrywing, kritiese evaluering van literatuur met betrekking tot groepe mense*
- *Klas **aanhaling styl**, omvattende*

- *Class citation style, comprehensive works in 808. Class authorship and editorial techniques for a specific kind of composition (e.g., academic theses and dissertations) in 808.06*
- *werke in 808. klas outeurskap en redaksionele tegnieke vir 'n spesifieke soort **samestelling** (bv akademiese proefskrifte en verhandelings) in 808.06*

Sub-units labelled FTME made up 64.5% of the total with unnecessary use of or absence of articles.

Table 4.97 and Figure 4.134 (page 286) indicate Level of comprehensiveness.

Table 4.97: Level of comprehensiveness in 800–809

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	2	4	28	16	91
%	1.4	2.8	19.9	11.4	64.5

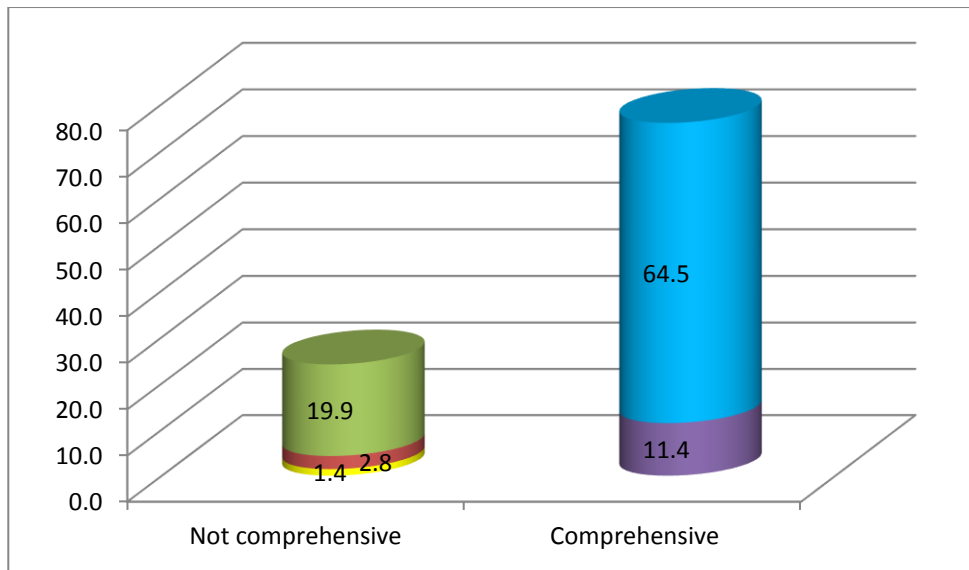


Figure 4.134: Level of comprehensiveness in 800-809

Google Translate translated 75.9% or 107 out of 141 sub-units.

Table 4.98 and Figure 4.135 (page 287) indicate Degree of editorial effort.

Table 4.98: Degree of editorial effort in 800-809

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	4	16	2	28	91
%	2.8	11.4	1.4	19.9	64.5

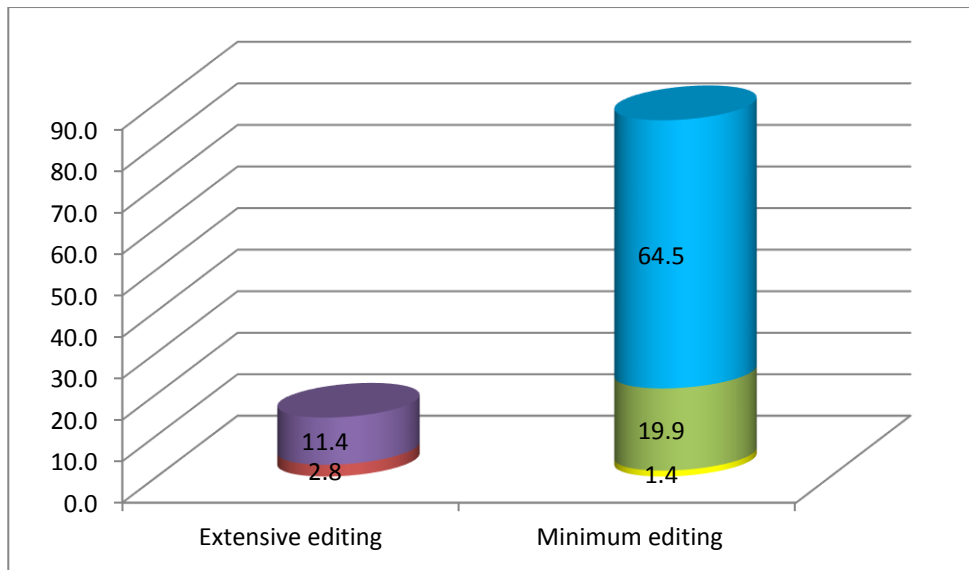


Figure 4.135: Degree of editorial effort in 800–809

85.8% (121 out of 141 sub-units) of the translation needs little or no editing.

4.10.2 Literatures of other specific languages and language families (890–899)

The researcher used the whole 890–899 division and it does not have unassigned sections.

Figure 4.136 (page 288) gives an overview of each evaluation category, measured as a percentage.

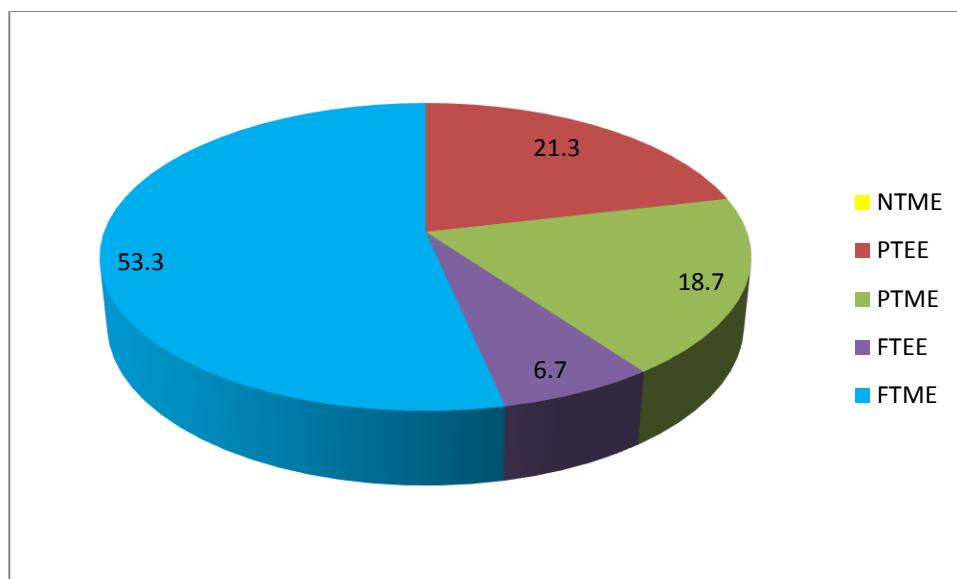


Figure 4.136: Literatures of other specific languages and language families (890–899)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 21.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *Add to base number 891.70 the numbers following —0 in notation 01–09 from Table 3, e.g., a collection of Russian literature 891.708*
- *Voeg by basis **getal 891.70 die getalle** volgende -0 in notasie 01–09 van **Table 3**, bv, 'n versameling van die Russiese letterkunde 891.708*
- *and lists of language names in the text of 890–899*

Sub-units labelled PTME made up 18.7% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *East* (again)
- *Modern Indic*
- *Celtic* (again)

Sub-units labelled FTEE made up 6.7% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Here are classed literatures of South Asian languages closely related to the languages of East and Southeast Asia*
- *Hier word **beskou** literatuur van Suid-Asiatiese tale nou verwant aan die tale van Oos-en Suidoos-Asië*

Sub-units labelled FTME made up 53.3% of the total with unnecessary use of or absence of articles.

The results are similar to 490–499, where the translation of lists of language names in the text was not good. See also 305 in Section 4.5.1 Social sciences (300–309) for lists of ethnic groups and 630 in Section 4.8.2 Agriculture and related technologies (630–639) for lists of plants and animals. These lists refer to lists in the text of Abridged Edition 15.

Table 4.99 and Figure 4.137 (page 290) indicate Level of comprehensiveness.

Table 4.99: Level of comprehensiveness in 890–899

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	16	14	5	40
%	0	21.3	18.7	6.7	53.3

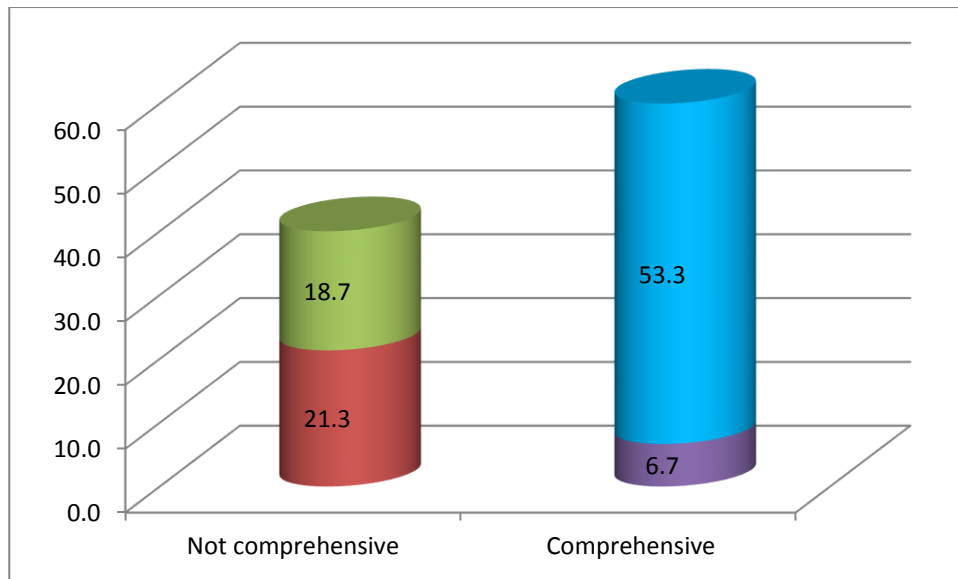


Figure 4.137: Level of comprehensiveness in 890-899

Google Translate translated 60% or 45 out of 75 sub-units.

Table 4.100 and Figure 4.138 (page 291) indicate Degree of editorial effort.

Table 4.100: Degree of editorial effort in 890-899

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	16	5	0	14	40
%	21.3	6.7	0	18.7	53.3

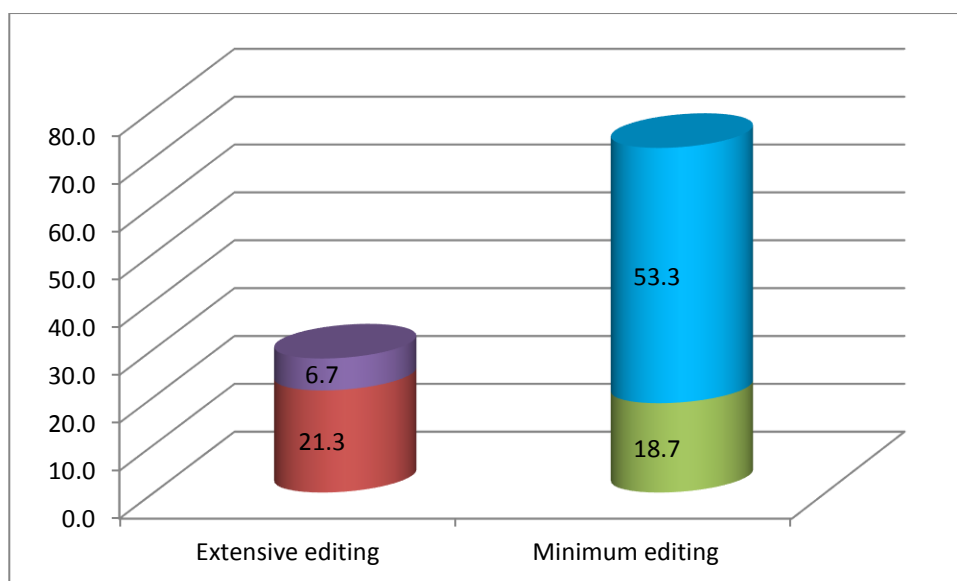


Figure 4.138: Degree of editorial effort in 890–899

72% (54 out of 75 sub-units) of the translation needs little or no editing.

4.10.3 Summary of the 800 main class

Table 4.101 presents a summary of this class.

Table 4.101: Summary of the 800 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
890–899	75	60	890–899	75	72
800–809	141	75.9	800–809	141	85.8
Average %		68	Average %		78.9

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

One of the two units has a comprehensiveness of 75.9% which indicates that the translations were comprehensive, averaging 68%.

In one of the two units 85.8% of the translation needs little or no editing; in the other one 72% of the translation needs little or no editing, averaging 78.9% which indicates minimum editorial effort.

4.11 The 900 main class

This main class does not have any unassigned divisions. The researcher used four full divisions. The divisions from 930–990 consist mostly of country names and dates so only one of these divisions was used. It is necessary to look at the introductory 900–909. After that 910–919, 920–929 and 960–969 follow.

4.11.1 History, geography, and auxiliary disciplines (900–909)

The researcher used the whole 900–909 division. It does not have unassigned sections. It contains the summary of the whole main class and resembles Table 1 (Standard subdivisions) partially, although 904 and 909 differ.

Figure 4.139 (page 293) gives an overview of each evaluation category, measured as a percentage.

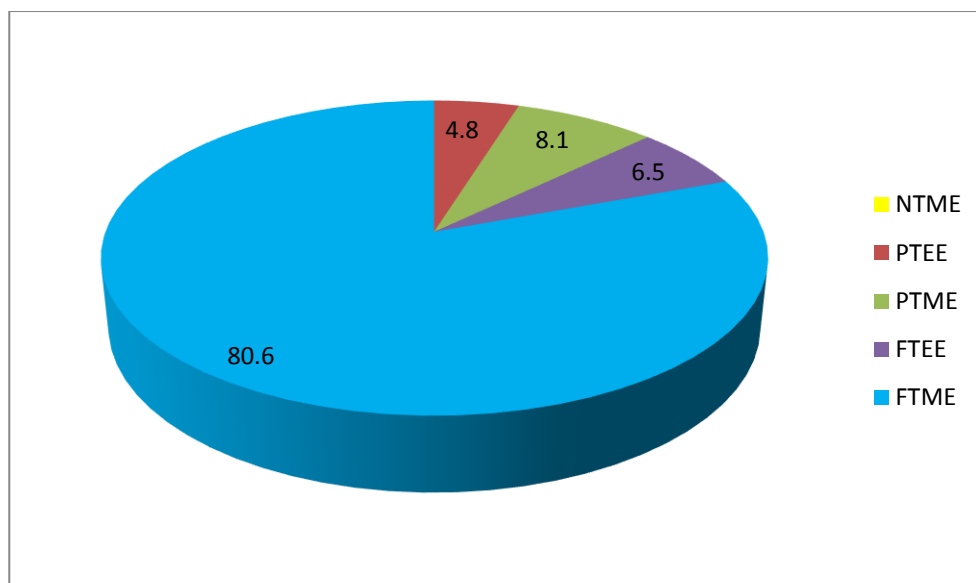


Figure 4.139: History, geography, and auxiliary disciplines (900–909)

Sub-units labelled NTME made up 0% of the total.

Sub-units labelled PTEE made up 4.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *901–909 Standard subdivisions of history, collected accounts of events, world history*
- *901–909 **Standard** onderafdelings van die geskiedenis, **ingesamel rekeninge** van die gebeure, geskiedenis van die wêreld*

Sub-units labelled PTME made up 8.1% of the total. Examples of words not translated by Google Translate are:

- *Miscellany (again)*
- *Standard (again)*
- *Serial (again)*
- *Nonhistorical*

Sub-units labelled FTEE made up 6.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *Class collected accounts of events not limited by period, area, region, subject in*
- *Class here general histories covering three or more continents (or three or more countries if not on the same continent)*
- *.2 Illustrations, models, miniatures*
- *Klas **ingesamel rekeninge** van die gebeure nie beperk deur tyd, area, streek, vak in*
- *Klas hier algemene geskiedenis **wat drie of meer kontinente (of drie of meer lande as dit nie op dieselfde kontinent)***
- *.2 illustrasies, modelle, **duimnaels***

Sub-units labelled FTME made up 80.6% of the total with unnecessary use of or absence of articles.

Table 4.102 and Figure 4.140 (page 295) indicate Level of comprehensiveness.

Table 4.102: Level of comprehensiveness in 900–909

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	0	3	5	4	50
%	0	4.8	8.1	6.5	80.6

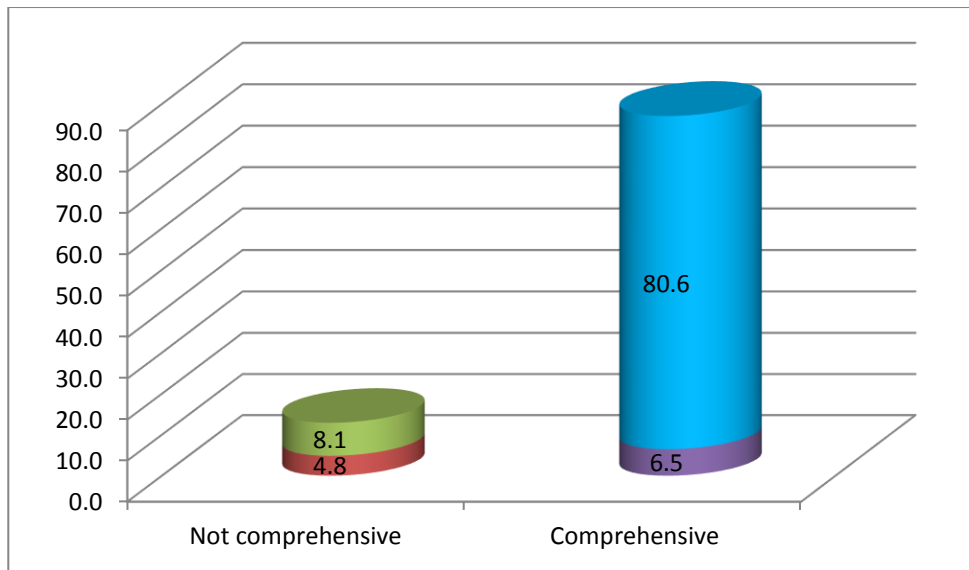


Figure 4.140: Level of comprehensiveness in 900-909

Google Translate translated 87.1% or 54 out of 62 sub-units.

Table 4.103 and Figure 4.141 (page 296) indicate Degree of editorial effort.

Table 4.103: Degree of editorial effort in 900-909

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	3	4	0	5	50
%	4.8	6.5	0	8.1	80.6

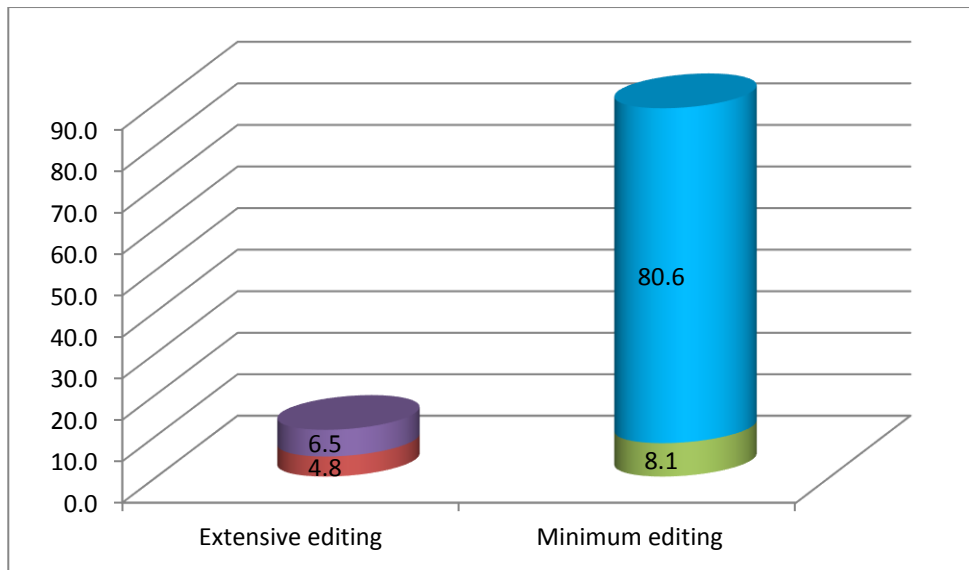


Figure 4.141: Degree of editorial effort in 900–909

88.7% (55 out of 62 sub-units) of the translation needs little or no editing.

4.11.2 Geography and travel (910–919)

The researcher used the whole 910–919 division and it does not have unassigned sections.

Figure 4.142 (page 297) gives an overview of each evaluation category, measured as a percentage.

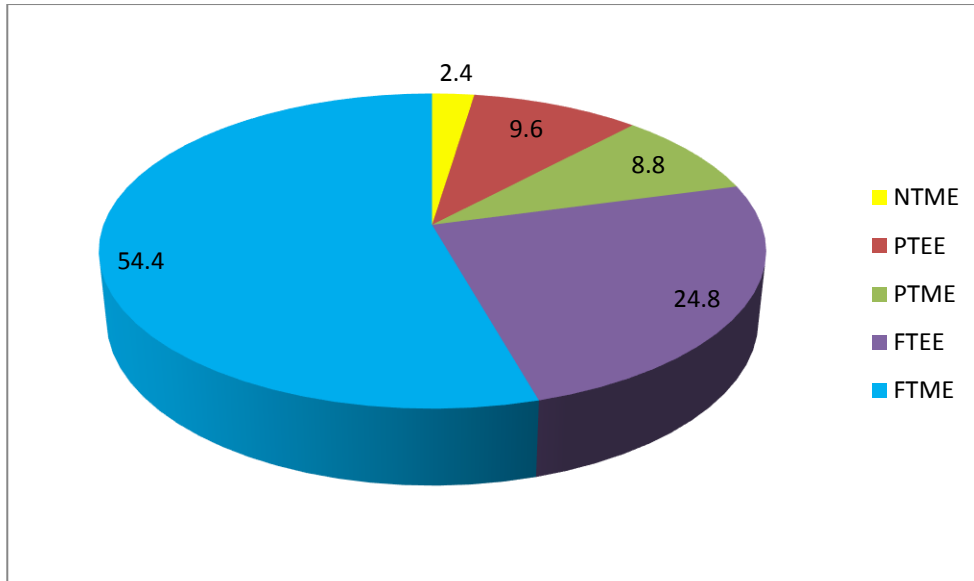


Figure 4.142: Geography and travel (910–919)

Sub-units labelled NTME made up 2.4% of the total. Examples of words not translated by Google Translate are:

- *Miscellany* (again)
- *Travel*

Sub-units labelled PTEE made up 9.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>910.133; then add 0* and to the result add notation 1–9 from Table 2, e.g.,</i> | <ul style="list-style-type: none"> • <i>910.133; voeg dan 0 * en om die resultaat te voeg notasie 1–9 van Table 2, bv</i> |
| <ul style="list-style-type: none"> • <i>For travel accounts that emphasize civilization of places visited, see 909 ... shipwrecks of Alaskan waters ...</i> | <ul style="list-style-type: none"> • <i>Vir reis rekening wat beskawing van plekke besoek het, sien 909 beklemtoon ... skeepswrakke van Alaskan waters ...</i> |

Sub-units labelled PTME made up 8.8% of the total. Examples of words not translated by Google Translate are:

- *Real-time*
- *Cruise*
- *Table* (again)
- *Standard* (again)
- *Discovery*
- *Geographic* (again)
- *Maps*

Sub-units labelled FTEE made up 24.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|--|
| • <i>Class here accounts of projected flights</i> | • <i>Klas hier rekeninge van die geprojekteerde vlugte</i> |
| • <i>Class here land atlases of countries, tax maps that provide general descriptions of assessed land and structures</i> | • <i>Klas hier land atlasse lande, belasting kaarte wat algemene beskrywings van geassesseer land en strukture</i> |
| • <i>Class here city directories, telephone books</i> | • <i>Klas hier stad dopgehou, telefoon boeke</i> |

Sub-units labelled FTME made up 54.4% of the total with unnecessary use of or absence of articles.

Table 4.104 and Figure 4.143 (page 299) indicate Level of comprehensiveness.

Table 4.104: Level of comprehensiveness in 910–919

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	3	12	11	31	68
%	2.4	9.6	8.8	24.8	54.4

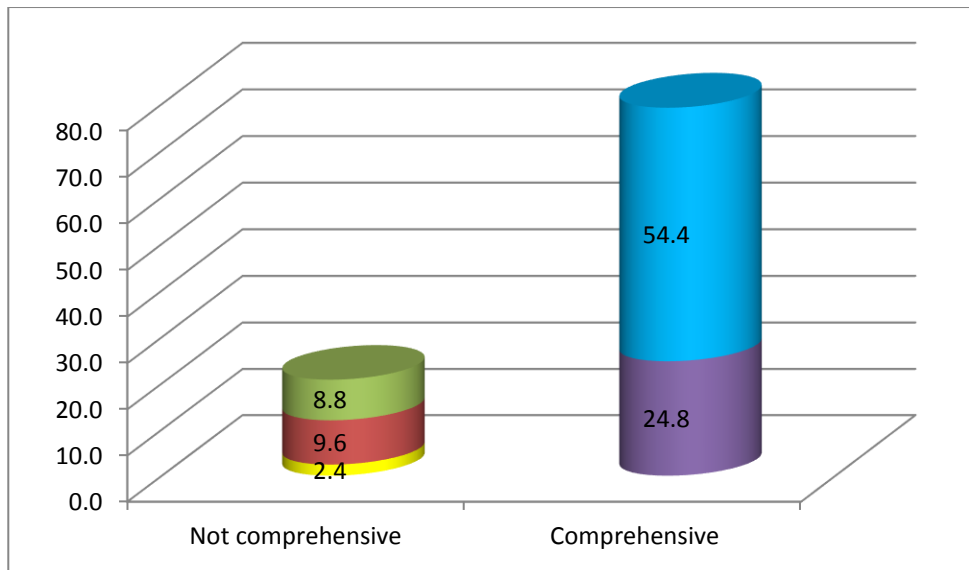


Figure 4.143: Level of comprehensiveness in 910-919

Google Translate translated 79.2% or 99 out of 125 sub-units.

Table 4.105 and Figure 4.144 (page 300) indicate Degree of editorial effort.

Table 4.105: Degree of editorial effort in 910-919

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	12	31	3	11	68
%	9.6	24.8	2.4	8.8	54.4

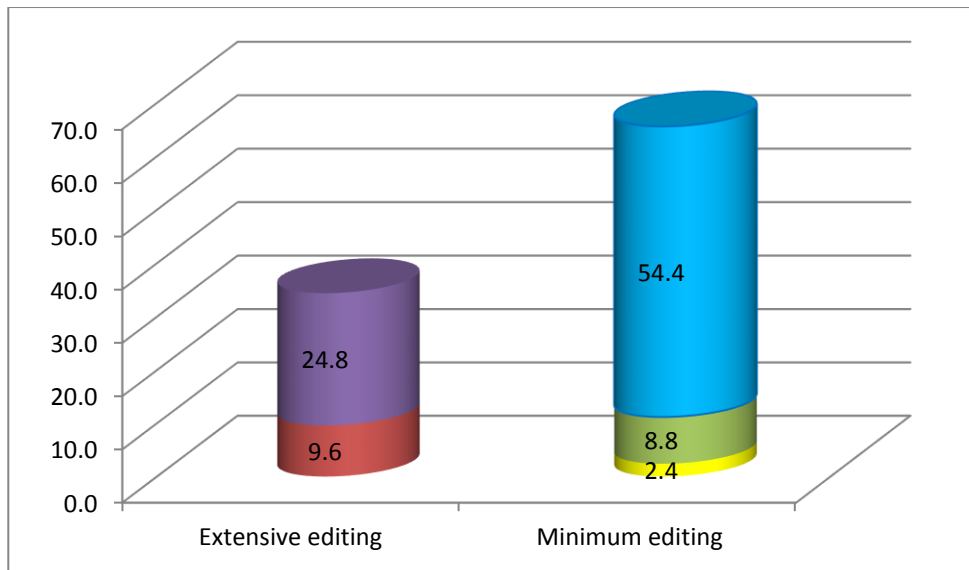


Figure 4.144: Degree of editorial effort in 910–919

65.6% (82 out of 125 sub-units) of the translation needs little or no editing.

4.11.3 Biography, genealogy, insignia (920–929)

The researcher used the whole 920–929 division and it does not have unassigned sections.

Figure 4.145 (page 301) gives an overview of each evaluation category, measured as a percentage.

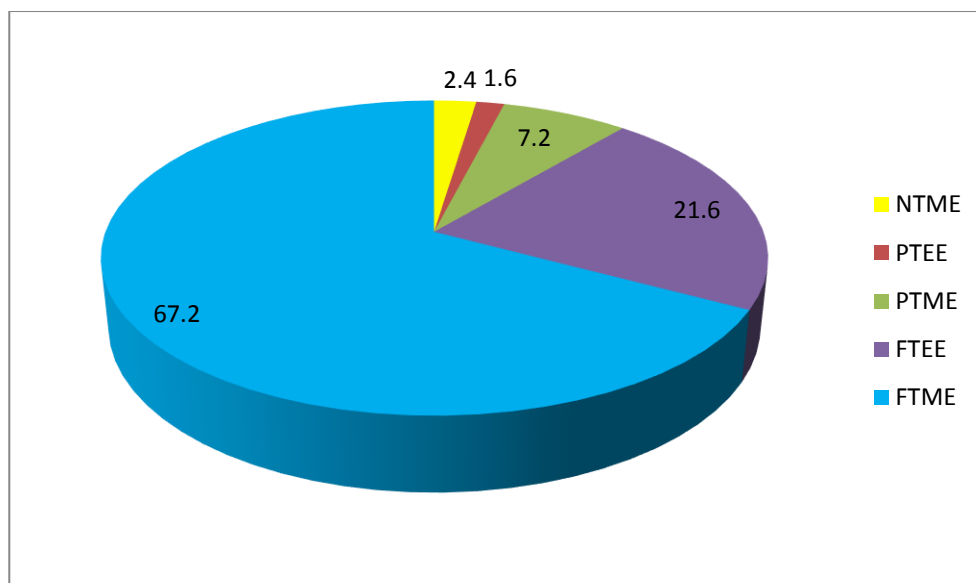


Figure 4.145: Biography, genealogy, insignia (920–929)

Sub-units labelled NTME made up 2.4% of the total. Examples of words not translated or incorrectly translated into Dutch by Google Translate are:

- *Men* (again)
- *Verzamelaars*
- *Encyclopedisten*

Sub-units labelled PTEE made up 1.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- *.7 Royal houses, peerage, orders of knighthood*
- *.7 **Royal** huise, adelstand, **bevele van ridder***

Sub-units labelled PTME made up 7.2% of the total. Examples of words not translated by Google Translate are:

- *Table* (again)
- *Standard* (again)

Sub-units labelled FTEE made up 21.6% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- See also 737 for artistic aspects of seals
- *insignia and identification not provided for here with the form, e.g., coats of arms 929.6*
- *Class Christian orders of knighthood in 255; class Christian orders of knighthood in church history in 271; class histories of a royal family that include general historical events or biographies of members of the royal family in 930–990. Class family histories of a prominent person that emphasize the person’s life with the biography number for the person, e.g., forebears, family, and life of Winston Churchill 941.084092*
- *[.008 1] People by gender or sex*
- *Sien ook 737 vir artistieke aspekte van **robbe***
- *kentekens en identifikasie **nie voorsien hier** met die vorm, bv **rokke van arms** 929.6*
- *Klas Christelike **bevele van ridder** in 255; klas Christelike **bevele van ridder** in die kerk se geskiedenis in 271; klas geskiedenis van 'n koninklike familie wat algemene historiese gebeure of biografieë van die lede van die koninklike familie **in 930–990 sluit**. Klas familiegeskiedenis van 'n vooraanstaande persoon wat die persoon se lewe te beklemtoon met die biografie nommer vir die persoon, bv voorvaders, familie en die lewe van Winston Churchill 941.084092*
- *[.008 1] Mense **geslag of geslag***

Sub-units labelled FTME made up 67.2% of the total with unnecessary use of or absence of articles.

Table 4.106 (page 303) and Figure 4.146 (page 303) indicate Level of comprehensiveness.

Table 4.106: Level of comprehensiveness in 920–929

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	3	2	9	27	84
%	2.4	1.6	7.2	21.6	67.2

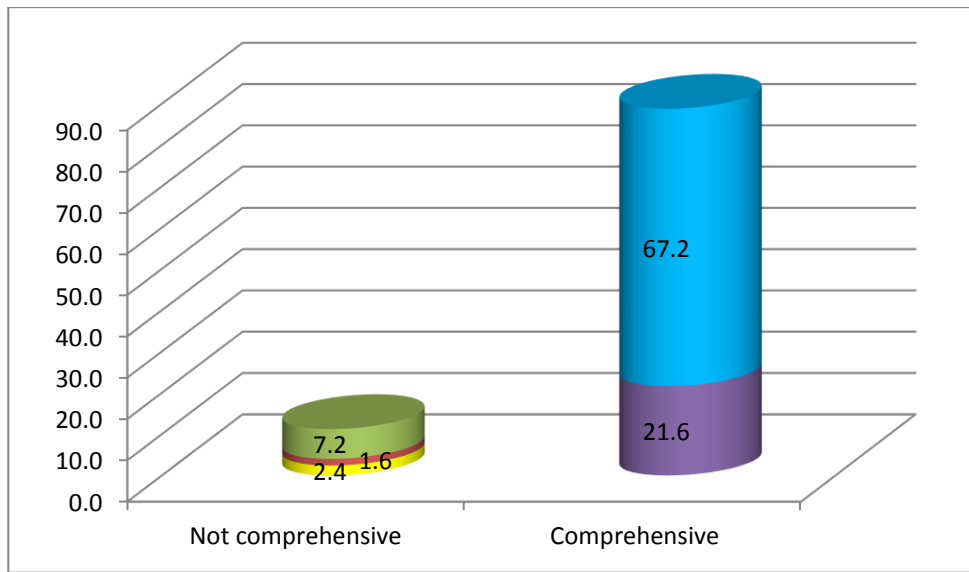


Figure 4.146: Level of comprehensiveness in 920–929

Google Translate translated 88.8% or 111 out of 125 sub-units.

Table 4.107 and Figure 4.147 (page 304) indicate Degree of editorial effort.

Table 4.107: Degree of editorial effort in 920–929

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	2	27	3	9	84
%	1.6	21.6	2.4	7.2	67.2

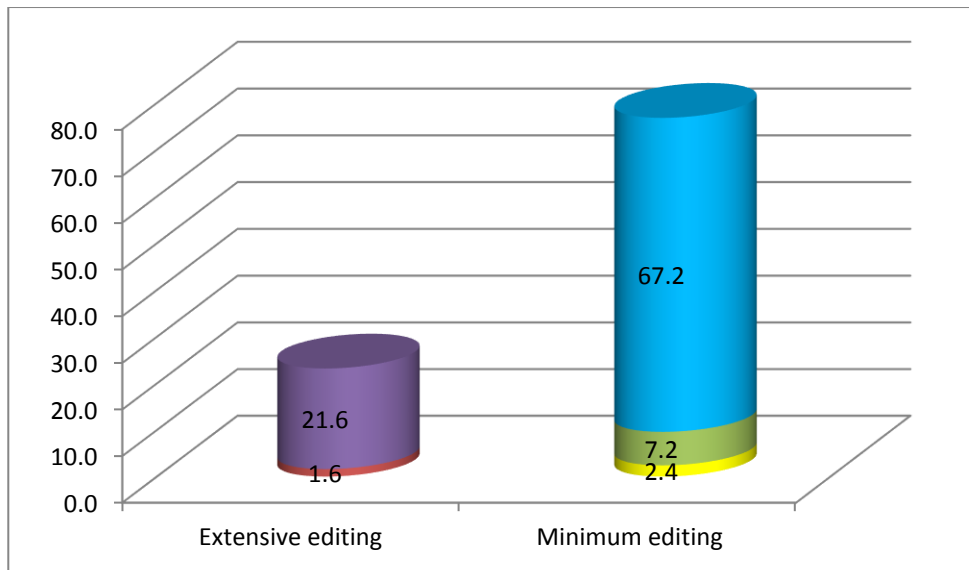


Figure 4.147: Degree of editorial effort in 920–929

76.8% (96 out of 125 sub-units) of the translation needs little or no editing.

4.11.4 History of Africa (960–969)

The researcher used the whole 960–969 division and it does not have unassigned sections. Sub-units in 960–969, consisting only of numeral dates (no words) and place names where the Afrikaans does not differ from the English were not evaluated.

Figure 4.148 (page 305) gives an overview of each evaluation category, measured as a percentage.

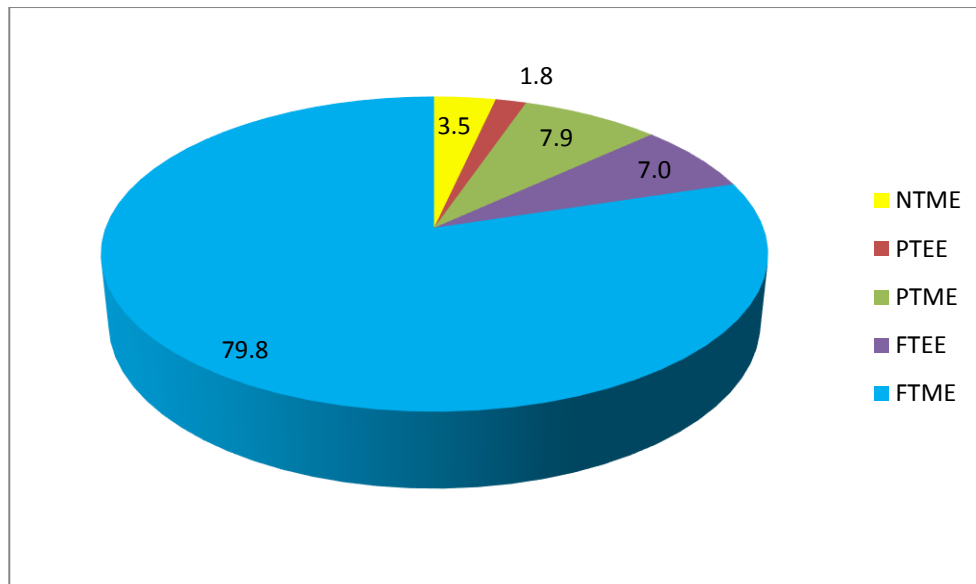


Figure 4.148: History of Africa (1960–1969)

Sub-units labelled NTME made up 3.5% of the total. Examples of words not translated by Google Translate are:

- *Gambia*
- *Chad*
- *Djibouti*
- *Namibia*

Sub-units labelled PTEE made up 1.8% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| • 960.01–.09 <i>Standard subdivisions</i> | • 960.01–0.09 Standard onderafdelings |
| 964 <i>Morocco, Ceuta, Melilla, Western Sahara, Canary Islands</i> | 964 <i>Marokko Ceuta, Melilla, Western Sahara, Kanariese Eilande</i> |
| 966 <i>West Africa and offshore islands</i> | 966 <i>Wes-Afrika en in die buiteland eilande</i> |

967 *Central Africa and offshore islands*

967 *Sentraal-Afrika en in die buiteland eilande*

Sub-units labelled PTME made up 7.9% of the total. Examples of words not translated by Google Translate are:

- *Canary*
- *Cape Verde*

Sub-units labelled FTEE made up 7% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- *For early history to ca. 640, see 939*
- *Vir 'n vroeë geskiedenis ca. 640, 939 te sien*

Sub-units labelled FTME made up 79.8% of the total with no major errors.

Table 4.108 and Figure 4.149 (page 307) indicate Level of comprehensiveness.

Table 4.108: Level of comprehensiveness in 960–969

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	4	2	9	8	91
%	3.5	1.8	7.9	7	79.8

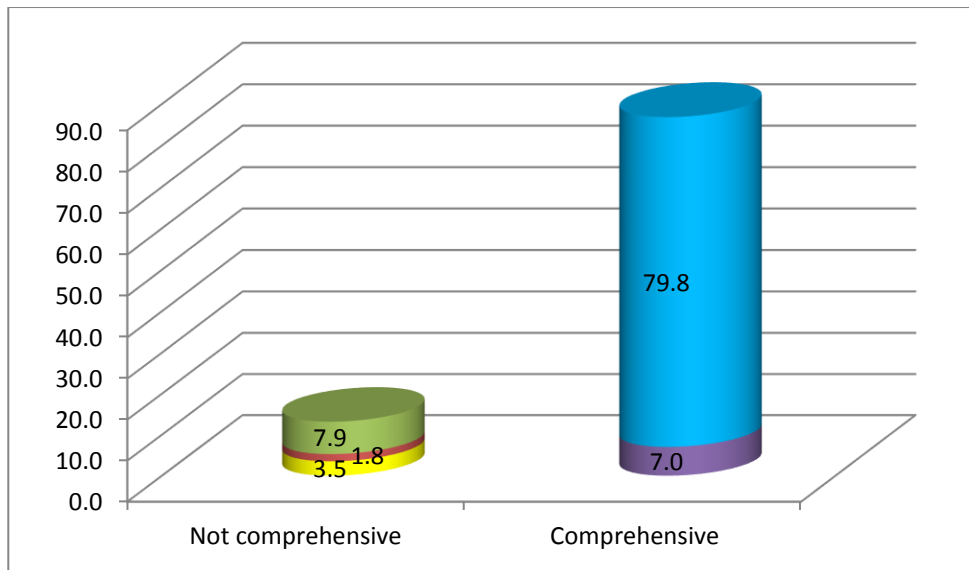


Figure 4.149: Level of comprehensiveness in 960-969

Google Translate translated 86.8% or 99 out of 114 sub-units.

Table 4.109 and Figure 4.150 (page 308) indicate Degree of editorial effort.

Table 4.109: Degree of editorial effort in 960-969

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	2	8	4	9	91
%	1.8	7	3.5	7.9	79.8

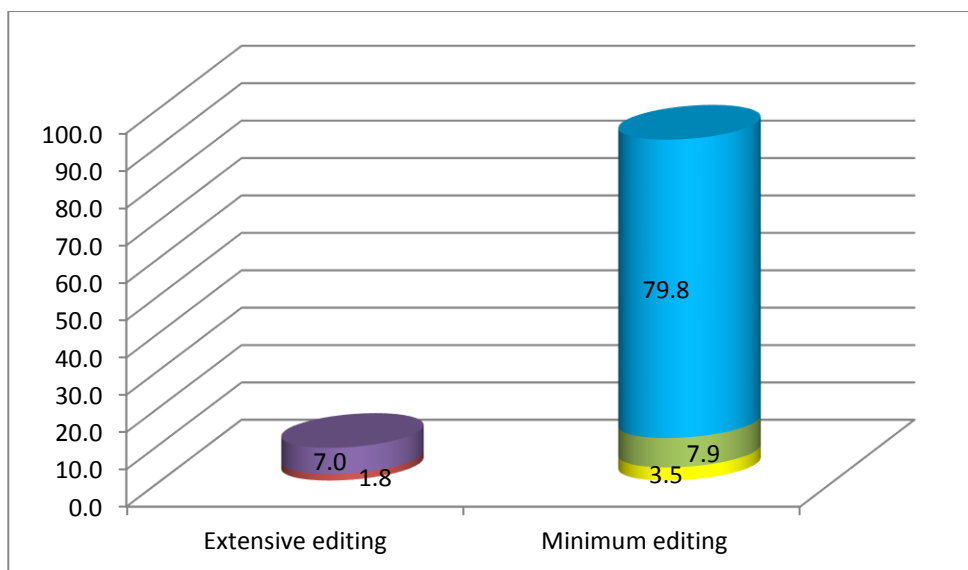


Figure 4.150: Degree of editorial effort in 960-969

91.2% (104 out of 114 sub-units) of the translation needs little or no editing.

4.11.5 Summary of the 900 main class

Table 4.110 presents a summary of this class.

Table 4.110: Summary of the 900 main class

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
910-919	125	79.2	910-919	125	65.6
960-969	114	86.8	920-929	125	76.8
900-909	62	87.1	900-909	62	88.7
920-929	125	88.8	960-969	114	91.2
Average %		85.5	Average %		80.6

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

All four units have a comprehensiveness of 75% which indicates that the translations were comprehensive, averaging 85.5%.

In three of the four units 75% or more of the translation needs little or no editing, averaging 80.6% which indicates minimum editorial effort.

4.12 The Tables

The researcher used Tables 1 and 4, thus half of the four tables in Abridged Edition 15. Tables 5 and 6 are not available in Abridged Edition 15.

Table 2 (Geographic subdivisions) would probably follow the pattern of 900 divisions (such as 968 above) because it consists mainly of geographic area names.

Table 3 (Literature) would probably follow the pattern of 800–809, and especially 809 which it resembles in contents.

Most tables begin with one introductory page, consisting mainly of text, so there is more text in the tables than in individual sections in the schedules.

4.12.1 Table 1

The researcher used Table 1 because it is probably the most important, because Table 1 notations can be added to almost any DDC number.

Figure 4.151 (page 310) gives an overview of each evaluation category, measured as a percentage.

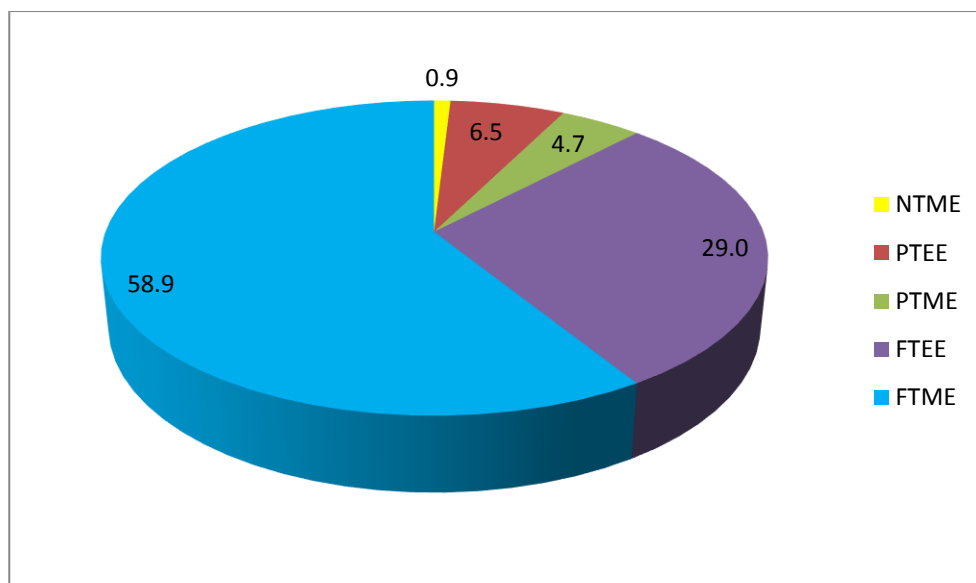


Figure 4.151: Table 1

Sub-units labelled NTME made up 0.9% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 6.5% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>The following notation is never used alone, but may be used as required with any regular ... the terminal zeros in a main class or division number should be dropped before adding ... Standard subdivisions should be added only ...</i> | <ul style="list-style-type: none"> • <i>Die volgende notasie is nooit alleen gebruik, maar kan gebruik word as wat nodig is met 'n gewone ... die terminale nulle in 'n groot klas of afdeling nommer moet laat val voor die byvoeging van ... Standard onderafdelings moet bygevoeg word net ...</i> |
|--|---|

Sub-units labelled PTME made up 4.7% of the total. Examples of words not translated by Google Translate are:

- *Standard* (again)
- *On-the-job*
- *Review*

Sub-units labelled FTEE made up 29% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|---|---|
| <ul style="list-style-type: none"> • <i>trends for collectors in —075; class works called synopses and outlines that are regular treatises or introductions to a subject in 001–999 without use of ...</i> | <ul style="list-style-type: none"> • <i>tendense vir versamelaars in —075; klas werke genoem opsommings en gee 'n uiteensetting wat gereelde verhandelings of inleiding tot 'n onderwerp in 001—999 sonder die gebruik ...</i> |
| <ul style="list-style-type: none"> • <i>Class directories of persons and organizations in —025; class lists and</i> | <ul style="list-style-type: none"> • <i>Klas dopgehou van persone en organisasies in —025; klaslyste en</i> |
| <ul style="list-style-type: none"> • <i>Class here house organs, magazines, newspapers, yearbooks</i> | <ul style="list-style-type: none"> • <i>Klas hier huis organe, tydskrifte, koerante, jaarboeke</i> |

Sub-units labelled FTME made up 58.9% of the total with unnecessary use of or absence of articles.

The fact that there is more text has an influence on the level of editorial effort of translation. There are many word order errors or wrong translations on the first page. This should be indicative for the other tables with more text as well.

Table 4.111 (page 312) and Figure 4.152 (page 312) indicate Level of comprehensiveness.

Table 4.111: Level of comprehensiveness in Table 1

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	7	5	31	63
%	0.9	6.5	4.7	29	58.9

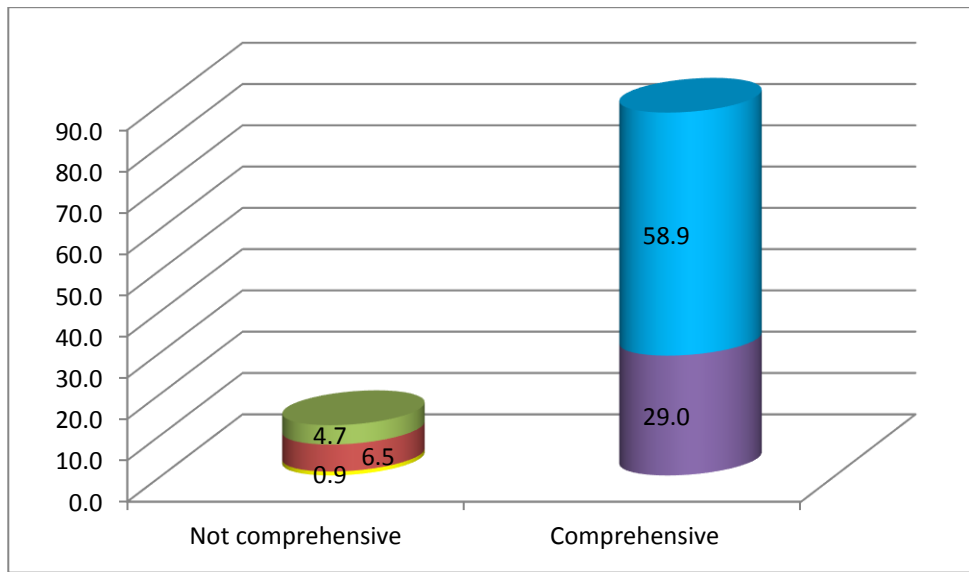


Figure 4.152: Level of comprehensiveness in Table 1

Google Translate translated 87.9% or 94 out of 107 sub-units.

Table 4.112 and Figure 4.153 (page 313) indicate Degree of editorial effort.

Table 4.112: Degree of editorial effort in Table 1

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	7	31	1	5	63
%	6.5	29	0.9	4.7	58.9

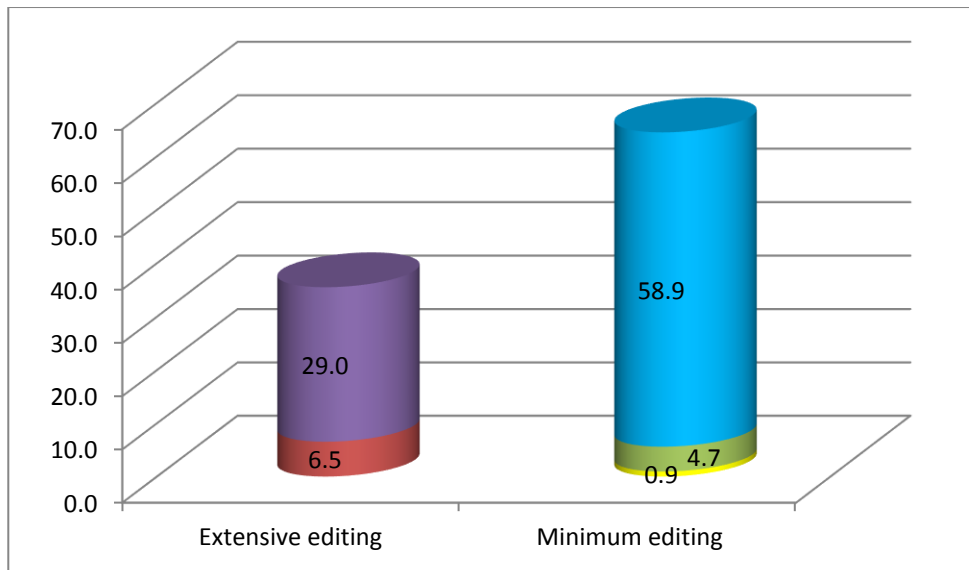


Figure 4.153: Degree of editorial effort in Table 1

64.5% (69 out of 107 sub-units) of the translation needs little or no editing.

4.12.2 Table 4

The researcher used the whole Table 4. This table can be added to language numbers of the 400 main class. It does not have the longer textual part at the beginning as in Table 1.

Figure 4.154 (page 314) gives an overview of each evaluation category, measured as a percentage.

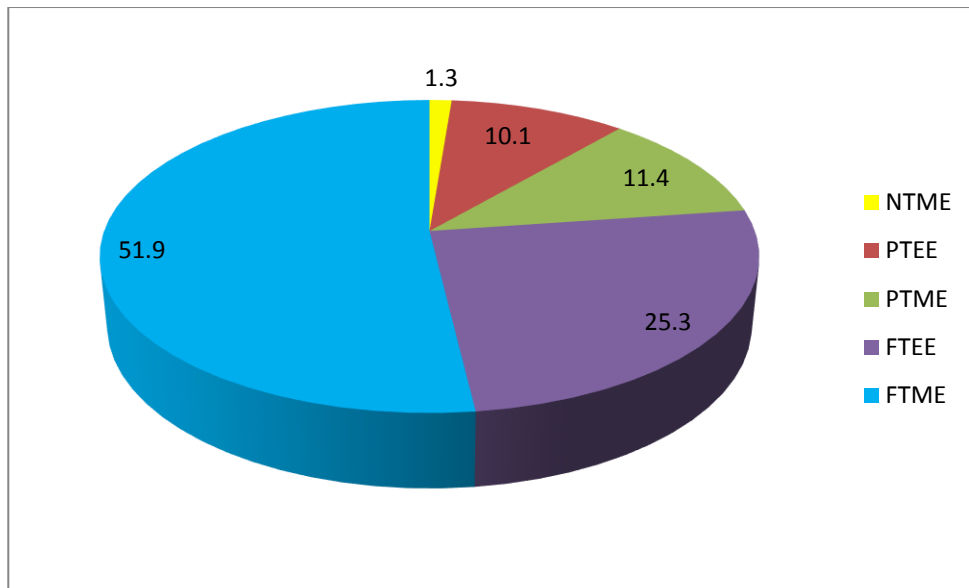


Figure 4.154: Table 4

Sub-units labelled NTME made up 1.3% of the total. An example of a word not translated by Google Translate is:

- *Miscellany* (again)

Sub-units labelled PTEE made up 10.1% of the total with incorrect or incomplete translation (phrases) and/or word order errors, combined with word/s not translated by Google Translate – for example:

- | | |
|--|--|
| <ul style="list-style-type: none"> • <i>class writing systems, phonology, phonetics of historical and geographic variations, of modern nongeographic variations of languages, paleography of historical ...</i> | <ul style="list-style-type: none"> • <i>klas skryfstelsels, fonologie, fonetiek van historiese en geografiese verskille, van moderne nongeographic variasies tale, boek— van historiese</i> |
| <ul style="list-style-type: none"> • <i>... grammar, applied linguistics are classed here when applied to historical and geographic variations, to modern</i> | <ul style="list-style-type: none"> • <i>... grammatika, is toegepaste linguistiek hier beskou wanneer dit toegepas word om historiese en geografiese verskille, om moderne</i> |

*nongeographic variations, e.g.,
paleography*

***nongeographic variasies, bv
boek—***

Sub-units labelled PTME made up 11.4% of the total. Examples of words not translated by Google Translate are:

- *Literates*
- *Eponyms*
- *Standard* (again)
- *Nongeographic* (again)

Sub-units labelled FTEE made up 25.3% of the total with incorrect or incomplete translation (phrases) and/or word order errors – for example:

- | | |
|--|---|
| • <i>third digit of any number thus constructed that is longer than three digits</i> | • <i>derde syfer van 'n aantal dus gebou wat langer as drie syfers</i> |
| • <i>class audio-lingual presentation of vocabulary for those whose native language is different in —83; class comprehensive works on terminology in —01</i> | • <i>klas klank—linguale aanbieding van woordeskat vir diegene wie se moedertaal is anders in —83; klas omvattende werke op terminologie in —01</i> |
| • <i>—83 Audio-lingual approach to expression</i> | • <i>—83 Audio—linguale benadering tot uitdrukking</i> |

Sub-units labelled FTME made up 51.9% of the total with unnecessary use of or absence of articles.

Table 4.113 (page 316) and Figure 4.155 (page 316) indicate Level of comprehensiveness.

Table 4.113: Level of comprehensiveness in Table 4

	NTME	PTEE	PTME	FTEE	FTME
	Not comprehensive			Comprehensive	
Number of	1	8	9	20	41
%	1.3	10.1	11.4	25.3	51.9

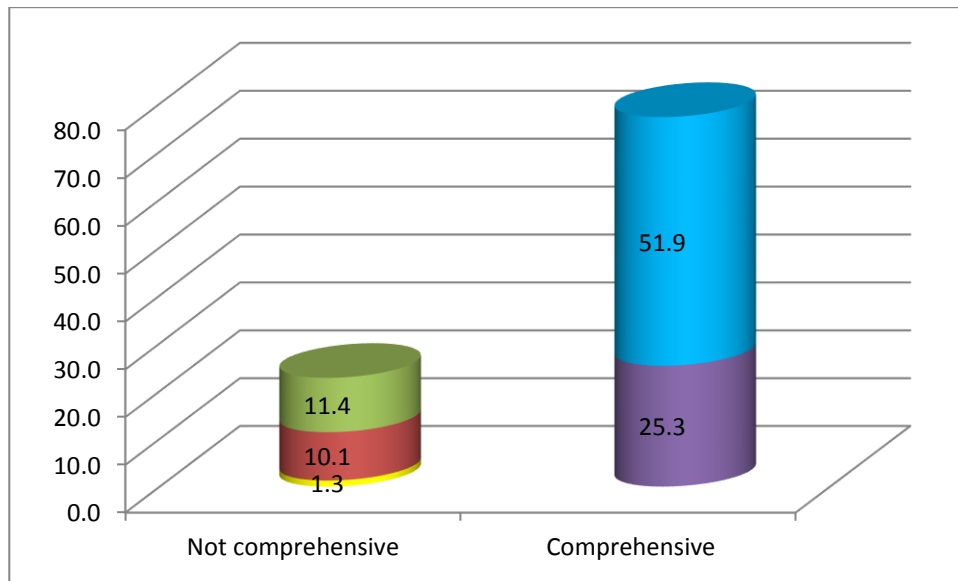


Figure 4.155: Level of comprehensiveness in Table 4

Google Translate translated 77.2% or 61 out of 79 sub-units.

Table 4.114 and Figure 4.156 (page 317) indicate Degree of editorial effort.

Table 4.114: Degree of editorial effort in Table 4

	PTEE	FTEE	NTME	PTME	FTME
	Extensive editing		Minimum editing		
Number of	8	20	1	9	41
%	10.1	25.3	1.3	11.4	51.9

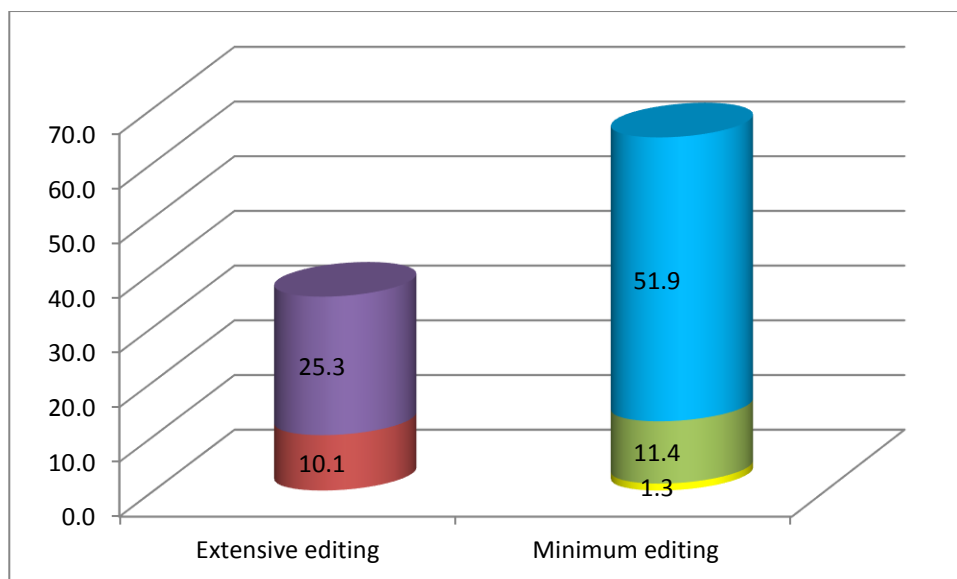


Figure 4.156: Degree of editorial effort in Table 4

64.6% (51 out of 79 sub-units) of the translation needs little or no editing.

4.12.3 Summary of the Tables

Table 4.115 presents a summary of this class.

Table 4.115: Summary of the Tables

Units	Number of sub-units	Comprehensiveness (%)	Units	Number of sub-units	Minimum editorial effort (%)
T4	79	77.2	T1	107	64.5
T1	107	87.9	T4	79	64.6
Average %		82.6	Average %		64.6

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

Both units have a comprehensiveness of 75% which indicates that the translations were comprehensive, averaging 82.6%.

In none of the units 66.7% or more of the translation needs little or no editing, averaging 64.6%, mainly due to the fact that Table 1 in particular included parts containing more text than in sections in the schedules. However, it still indicates minimum editorial effort.

4.13 Conclusion

Table 4.116 presents a summary of the average scores from all main classes and the tables.

Table 4.116: Summary of all main classes and tables

Main class/Tables	Number of sub-units	Comprehensiveness (%)	Main class/Tables	Number of sub-units	Minimum editorial effort (%)
800	216	68	Tables	186	64.6
400	233	69.1	200	457	71.4
700	409	72.3	100	351	72.1
500	399	73.1	300	1850	74
600	600	74.3	600	600	74.7
100	351	77.5	000	728	75
000	728	78.8	700	409	75.3
300	1850	80	800	216	78.9
Tables	186	82.6	400	233	79.1
900	426	85.5	500	399	79.4
200	457	87.5	900	426	80.6
Average %		77.1	Average %		75

The table consists of two parts which shows comprehensiveness on the left and (minimum) editorial effort on the right. It is sorted from lowest to highest percentages on both sides.

Six of the eleven main classes/tables have a comprehensiveness of 75%, with the other five more than 66.7% which indicates that the translations were comprehensive, averaging 77.1% which is above the two-thirds majority alluded to in the two-thirds rule mentioned previously in Chapter 3 Section 3.8.2.2.3 Development of the translation evaluation instrument.

Six of the eleven main classes/tables have an accuracy level of 75% or more, with another four more than 66.7%, averaging 75% which indicates minimum editorial effort of translations.

It is clear that, in terms of both level of editorial effort and level of comprehensiveness, Google translations are good (more than three quarters were translated and three quarters were translated well with minimum editorial effort needed). Both averages are also above the benchmark of 66.7%, discussed in Chapter 3 Section 3.8.2.2.3 Development of the translation evaluation instrument. Of all main classes and tables only the tables were below the two-thirds majority in the degree of editorial effort column.

Only eight of the 52 units used were below 66.7% in comprehensiveness and only six were below 66.7% in degree of editorial effort.

In the first column, the order from low to high also indicates the ranking of the main classes/tables in terms of level of comprehensiveness, with the 200 main class ranking the highest. This ranking is significant only for indicating an order of translation as described in Chapter 5 Section 5.2.3.2 Step 2: The sequence of translations. The comprehensiveness ranking is used for this, as it does not make sense to settle on an average between the two rankings in Table 4.116 (page 318) therefore comprehensiveness gives a clear indication of which parts to start with.

The mnemonic nature of DDC indicates that similar results should occur with the remainder of the text. Words not translated by Google Translate tended to be

repetitive, again due to DDC's mnemonic nature, for example "miscellany", "commercial miscellany", "standard", "table", "management", words starting with the prefix "non" and so on. Some single words that were not translated were sometimes translated in phrases. Discrepancies in the translation/non-translation of single and plural forms of the same word were also observed.

Google Translate initially followed a statistical translation approach where it explored patterns in already translated texts (Van Rensburg, Snyman & Lotz 2012:515). It changed to a neural machine translation approach in November 2016 (Turovsky 2016). Neural systems translate whole sentences instead of pieces of sentences and use a broader context (Turovsky 2016). The researcher used Google Translate from January to May 2016 when Google Translate was still using the statistical approach, and Afrikaans is not yet included in the more than 20 languages mentioned by Yushkina (2017) using the new approach.

Statistical matching often results in nonsensical and obvious errors (Sfetcu 2014) as opposed to a rule-based approach. Google Translate uses already translated texts that often contain incorrect translations and this explains some errors, including the use of words of languages related to Afrikaans, such as Dutch and German. Statistical matching systems also lack a broader context only possible with neural systems (Agapiev 2016). This explains why Google Translate sometimes did not translate a single word occurrence, but translated it in a phrase.

4.14 Chapter summary

The questions of comprehensiveness and editorial effort in respect of the samples of Abridged Edition 15 have been answered. It has been established that Google Translate performed well in translating the chosen parts. Chapter 5 South African translations: a workflow and a model builds on these results by describing a proposed workflow for the process of South African translations, including the extent to which Google translations can be used for more translations, and a proposed model of translation.

Chapter 5 South African translations: a workflow and a model

5.1 Introduction

In Chapter 4 Data analysis, presentation and interpretation, an analysis of the data showed that the Google translations were comprehensive and needed minimum editorial effort. This indicates that Google Translate completed the translations of chosen parts of Abridged Edition 15 well. With these results in mind, Chapter 5 attempts to answer the following research questions to indicate the feasibility of South African translations of DDC, based mostly on original observations:

- Is it possible to simplify the translation process?
- To what extent can South African translators use Google Translate for the translation process?
- How can Google translations assist with minimising time, effort and human input?
- Which model of translation, pertaining to the Pansoft translation software, can assist in the simplification of the process?

The researcher begins by proposing a possible workflow, consisting of five steps, for the South African translation process. The proposed workflow is a suggestion and is intended to establish how such a workflow might support the feasibility of these translations.

The researcher then discusses three possible scenarios for choosing a translation model for the South African environment, based on the discussion of the Pansoft translation software in terms of the number of translation instances in Chapter 1 Section 1.1.2.5.4 Pansoft translation software. The researcher indicates the advantages and disadvantages inherent in the scenarios and, using the pricing information in Werling's e-mails (e-mail, 17 September 2014 and 18 July 2016), details the financial implications of each.

Although the data analysis in Chapter 4 Data analysis, presentation and interpretation covered only Afrikaans, the possibilities for the other languages

feature in Section 5.2 Workflow for South African translations and Section 5.3 Scenarios for a South African translation model. These scenarios include the mixed translation model which the researcher discussed in Chapter 2 Section 2.11 Norwegian and Swedish.

Figure 5.1 summarises the content of this chapter.

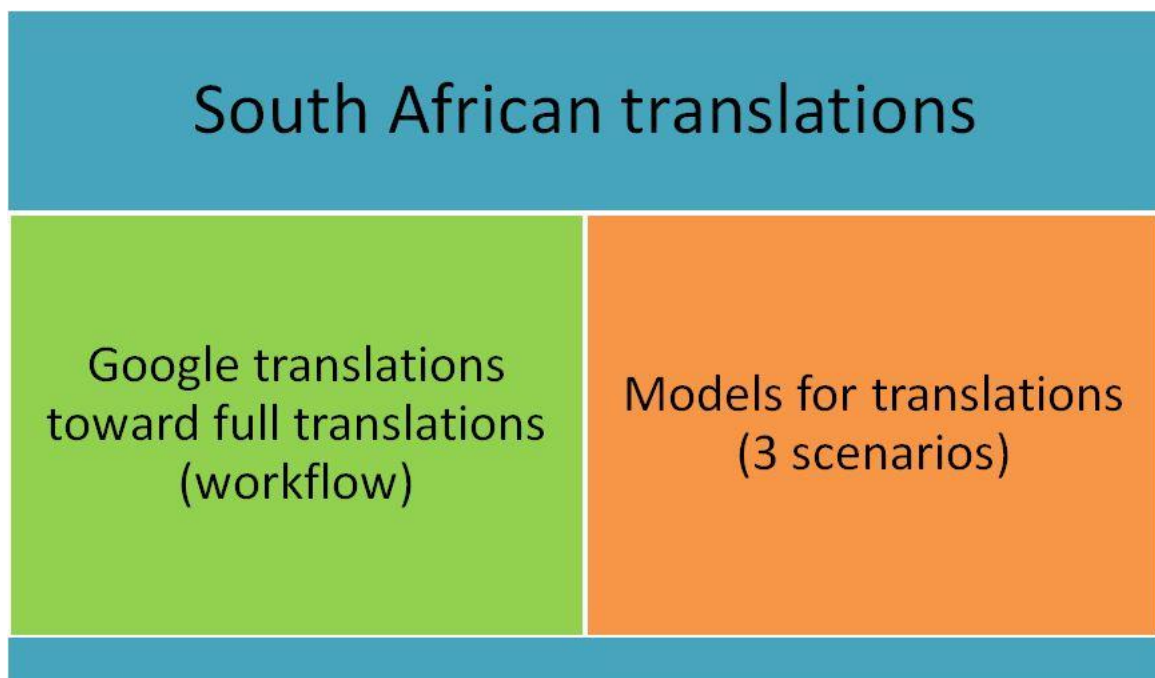


Figure 5.1: Summary of the chapter

5.2 Workflow for South African translations

This section describes a possible workflow for moving forward with South African translations to answer the following research questions:

- Is it possible to simplify the translation process?
- To what extent can South African translators use Google Translate for the translation process?
- How can Google translations help with minimising time, effort and human input?

The discussion precedes Section 5.3 Scenarios for a South African translation model to link with the results of the data analysis in Chapter 4 Data analysis,

presentation and interpretation. It indicates how to use the parts already translated by Google Translate as building blocks for further South African translations and looks at the choice between an abridged or a full translation, as well as at the stakeholders and the process for additional translations.

5.2.1 Abridged edition versus full edition

Parts of Abridged Edition 15 were used to measure the level of comprehensiveness and editorial effort of Google translations as presented in Chapter 4 Data analysis, presentation and interpretation. Hence, a substantial translation for Afrikaans already exists. Abridged Edition 15 was used because it was easier to copy from the PDFs and paste the content into Google Translate. With WebDewey, only one page of the hierarchy can be copied at a time. This means that 968 can be copied and translated, then the first hierarchical level below that and so on. This is more time consuming, as described in more detail in Chapter 3 Section 3.8.2.1 Sample size and procedure.

Separate instances of the Pansoft translation software support both the abridged and full translations. Hence, translators have a choice between software for an abridged edition or software for a full edition. Abridged Edition 15 however is not a straightforward shortening of the full DDC. It has certain unique characteristics – for example: “Including notes may also contain topics from subclasses in the full edition that are not part in the notational framework of the abridged edition” (Introduction to the Dewey Decimal Classification (Abridged) 2017:xl–xli).

Table 5.1 (page 324) shows an example of this from Abridged Edition 15 versus WebDewey.

Table 5.1: 636 Abridged Edition 15 versus WebDewey

Abridged Edition 15	WebDewey
636 Animal husbandry	636 Animal husbandry
Including ranches and farms; young of animals	636.01 Ranches and farms
	636.07 Young of animals

Two numbers, 636.01 and 636.07, do not appear in Abridged Edition 15 which mentions them only in an including note. At 636 in the Pansoft translation software for the full edition there is no including note for translation and one cannot be added. It will be necessary to choose between abridged and full editions as soon as possible in the translation process.

The logical option seems to be translation of the full edition, but in Section 5.2.3.2 Step 2: The sequence of translations and Section 5.2.3.5 Step 5: Use of the Pansoft translation software this view will be challenged.

5.2.2 Stakeholders in a DDC translation

Authorised DDC translations cannot be undertaken by just anyone. Heiner-Freiling (2003:7) mentions the translators and experts who worked on the German translations. Beall (e-mail, 8 March 2013) indicates the following mandatory stakeholders in the translation process:

- An authoritative national body, thus either a national library or the national library association or both, to negotiate and sign the contract with OCLC
- A technical team consisting of translators and subject specialists to do the translation work
- A head of the technical team/s who gets special training at the Library of Congress
- A board of librarians to review the translations

- OCLC and their language experts, to answer questions and review the final translation

5.2.3 Steps in the translation process

This section describes the proposed steps to follow in the translation process. This is, however, only a suggestion and is not cast in stone, as indicated in Section 5.1 Introduction.

5.2.3.1 Step 1: Involving the South African library community

It is necessary to get the National Library of South Africa and/or LIASA involved in the translation process because OCLC will negotiate only with an authoritative body. The authoritative bodies of Lesotho for Southern Sotho, Botswana for Tswana and Swaziland for Swazi will also have to be consulted (Beall e-mail, 9 March 2013). It is also necessary to recruit librarians, translators and subject experts to help with the actual translation work and to find sponsors for funding.

Although this is the first step, it could take some time. Steps 2 and 3, below, can take place simultaneously with step 1.

5.2.3.2 Step 2: The sequence of translations

Even if a full edition is the ideal outcome, continuing to translate Abridged Edition 15 seems to be relevant at the beginning of the process for the following reasons:

- It is easier to work with the PDFs of Abridged Edition 15 in Google Translate. Whole PDFs can be imported (meaning one PDF containing a whole class can be inserted into Google Translate and translated immediately). The results can be added to the existing Excel files of Afrikaans translations, and the other languages available can be translated as well. Google Translate also contains a “suggest an edit” facility. This

implies that the translation of one PDF or a part of it can be edited and submitted as a suggestion to enhance the quality of successive translations

- Abridged Edition 15 covers a substantial part of the full edition in any event, so a great deal of WebDewey's content will already be translated

The *Guidelines for Preparations of Translations and Adaption, Edition 21* mentioned by Knutsen advises translators about the sequence to be followed (Knutsen 2003:2–3), and the researcher proposes the sequence below simply as a possible alternative based on the outcomes of the Google translations reported on in Chapter 4 Data analysis, presentation and interpretation:

- **Glossary:** This gives definitions of key DDC concepts
- **Relative Index:** The only up-to-date version is in WebDewey. There are approximately 104 605 entries in the Relative Index (Green 2017) which total approximately 3 487 screens in WebDewey; there are 30 entries per screen. It is easy to copy a screen which includes the index terms and numbers, and paste into Google Translate. It is impossible to separate the number from its index term though, so the resulting file cannot be sorted according to DDC numbers. This process could be time consuming and could, perhaps, be forfeited. The translation of Abridged Edition 15 would result in the creation of a substantial pool of Relative Index terms given that the Relative Index already includes most of the terms used in the schedules and tables of Abridged Edition 15. There is also an existing PDF version of the Relative Index which can be used for the translations, but this would be possible only after a contract has been signed with OCLC
- **Table 2 and the 900 class:** The 900 class translations scored very high in level of comprehensiveness (85.5%) and minimum editorial effort (80.6%) in the empirical study reported in Chapter 4 Data analysis, presentation and interpretation. Table 2 closely resembles this class in terms of geographic (country) names
- **The introduction:** The introduction is very important because it contains, among other things, instructions on how to use DDC. Northern Sotho and Zulu translations of the introduction already exist

- **Table 1:** A Google translation of Abridged Edition 15 Table 1 in Afrikaans already exists. This is the most important table because its notations can be added to almost any DDC number, so a translation of the full Table 1 at this stage could be beneficial if a decision in favour of the full edition is made
- **The rest of the schedules and tables,** keeping in mind the results of Table 4.116 Summary of all main classes. Hence, those main classes with higher levels of comprehensiveness appear before the others, resulting in the following sequence: 200; 300; 000; 100; 600; 500; 700; 400 with Table 4; 800 with Table 3; Tables 5 and 6 (full edition only)

One, or at most two people per language could suffice for this initial process because of the simplicity of adding PDFs to Google Translate, pasting the results into Excel files, evaluating translations with the evaluation tool described in Chapter 3 Research methodology and Chapter 4 Data analysis, presentation and interpretation and sorting the translations according to the extent of editing needed.

5.2.3.3 Step 3: Editing of the Google Translations

This step can take place in conjunction with step 2. As the translations are added, evaluated and sorted in the Excel files, the editing can be done. There could be two teams, a small team for the translations needing minimum editing and a larger team for the parts needing extensive editing. The term “teams” used here, refer to the technical team mentioned in Section 5.2.2 Stakeholders in a DDC translation, but the South African technical team would consist of a number of smaller teams for each language.

Table 5.2 (page 328) gives an indication of some of the problems experienced by translators of other language translations of DDC discussed in Chapter 2 Critical analysis of reported research which should be considered by South African translators. Problems in the Google (machine) translations cannot be compared to the problems of human translators in Table 5.2. Problems in Google translations will, in any event, be edited out by humans. Although people translated the DDC

summaries into South African languages, no record exists of problems experienced by these translators.

Table 5.2: Problems relating to translation

Language problems/Un-translatable terms	Rare terms	Cultural differences	Specific DDC subjects
No equivalent for DDC terms in German (Heiner-Freiling 2006:149)	Hindi terms not in regular use (Guha 1976:284)	Religion: Roman Catholic versus Protestant bias in DDC (Danesi 1991:60). This may be relevant for South African religions.	Norwegian language, literature and history (Knutsen 2003:3)
New technologies – for example, computer science (Danesi 1991:61)		Awkwardness for non-Christians (Kwasnik & Chun 2004:194)	Philosophy, religion, law, Table 2 (Heiner-Freiling 2003:3)
Passive voice, no Spanish equivalent for computer science, English proper names (Rojas L.1997:81–82)		Little knowledge of English (Rype & Svanberg 2009:28)	
Complex diacritics, inconsistent treatment of foreign names, difficulty to translate esoteric and technical terms (Vu Van Son & Robinson 2006:3)		Racial expressions in terms of humans cannot be translated into Italian (Cavaleri e-mail, 2 December 2014)	
Informatics, Geomorphological tracers, Massage therapists, Cave theaters, Stag harborers difficult to translate into Italian (Cavaleri e-mail, 2 December 2014)			
Community schools, Colleges (Aagaard e-mail, 3 December 2014)			

5.2.3.4 Step 4: Negotiating and signing the contract

At this time, when the majority of Abridged Edition 15 has been translated and the National Library of South Africa and/or LIASA have been convinced of the merits of South African translations, these two bodies can negotiate with OCLC and sign the contract for the translations.

5.2.3.5 Step 5: Use of the Pansoft translation software

After the contract has been signed, the following steps can be implemented to move toward full translations:

- Decide on how many levels of the hierarchy to translate, on whether to incorporate options in the translated text or not, and on the main languages of the three instances or physical manifestations of the Pansoft translation software, as discussed in Section 5.3 Scenarios for a South African translation model.
- Abridged translation: Add the translations to the Pansoft translation software. It is possible that a translation of Abridged Edition 15, with expansions at certain parts, will suffice (as in the Indonesian translation described by Beall (2012:4)) – for example:
 - Table 2 (full edition): Either just South Africa (-68) or South Africa and Africa (-6), with further expansions of South African numbers, including local municipalities, depending on local literary warrant – for example, West Rand District Municipality at -68222 can be expanded as follows: Merafong City Local Municipality (-68222X), Mogale City Local Municipality (-68222Y) and Rand West City Local Municipality (-68222Z), where X, Y and Z resembles different numbers in the hierarchy as prescribed in the guidelines
 - Tables 5 and 6: Additionally, because they do not feature in Abridged Edition 15, with further expansions for South African and possibly African entries, depending on local literary warrant
- Full translation: Translate parts (which have not been covered by the Google translations of Abridged Edition 15) with Google Translate, using the English text in the Pansoft translation software. The translation software allows for moving to the next level of the hierarchy, either up or down, by clicking on arrows and for inserting comments for the next group of editors indicated with arrows in Figure 5.2 (page 330). Entire pages of text cannot be copied, only parts of text for instance:

- copy untranslated part
 - paste into Google Translate
 - copy translation and paste into software
 - repeat with next untranslated part
- Edit the whole translation and send to OCLC for review

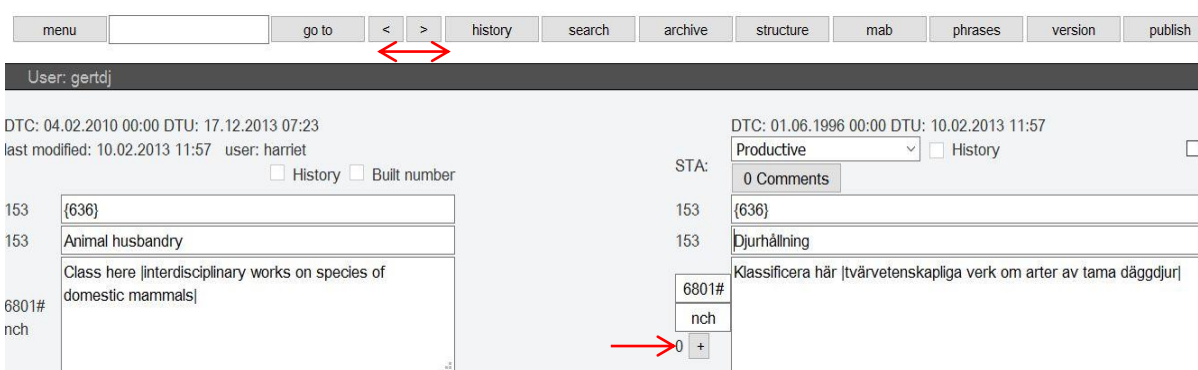


Figure 5.2: Hierarchical movement and comments in the translation software

5.2.4 Summary of the workflow

The steps described above are only preliminary indications of how to proceed and are not by any means comprehensive. Section 5.2.1 Abridged edition versus full edition indicated that existing Google translations can be used as the foundation for further translations and that more Google translations can be added, showing the extent to which translators can use Google Translate. Existing translations of summaries can also facilitate editing – for example, “Miscellany” not translated by Google Translate have been translated as “Diverse werke” in the Afrikaans summaries. It further shows that the use of Google Translate can simplify the translation process after the contract has been signed, as fewer translators would be needed. Feasibility of South African translations now seems likely; however, many presently unknown variables will dictate practical execution. Figure 5.3 (page 331) compares the proposed workflow (left) to the usual translation workflow (right) and gives an indication that most of the translation work can be

dealt with at the beginning of the process, before the contract is signed. The workflow on the left indicates most effort at the beginning with Google translations (wide) ending with less effort (narrow), with the workflow on the right indicating the opposite.

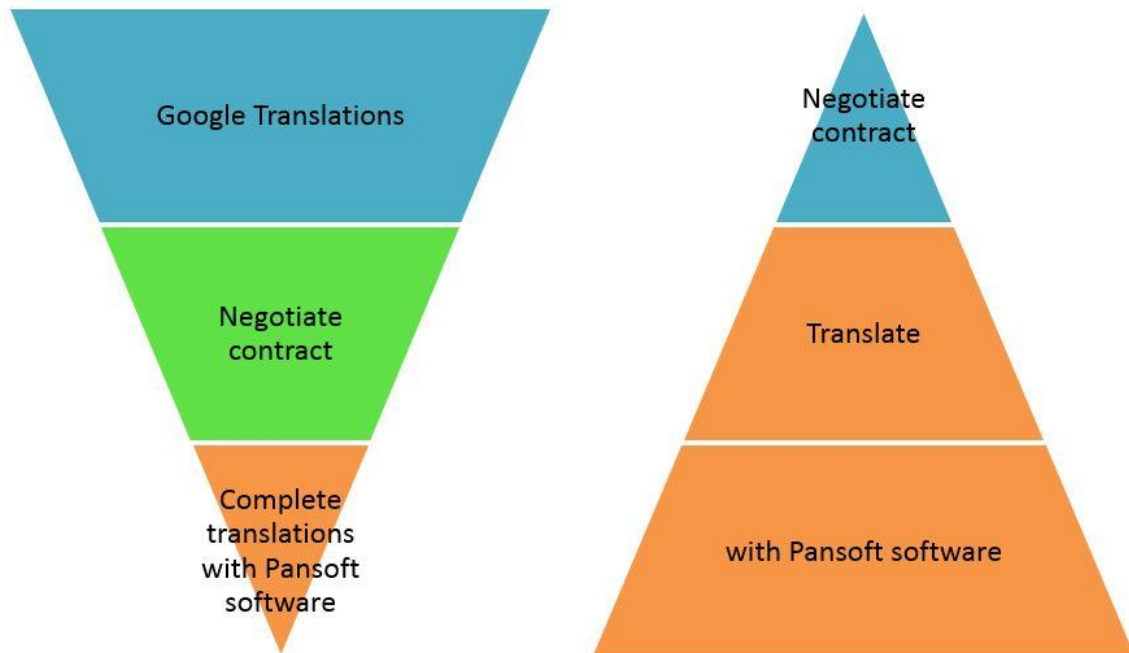


Figure 5.3: Simplified comparison of workflows

Step 5 mentions the use of the Pansoft translation software and it is necessary to give a detailed description of possible scenarios for the South African environment to enable an informed choice about financial feasibility.

5.3 Scenarios for a South African translation model

A discussion on three possible scenarios for South African translations using the Pansoft translation software follows to answer the following research question:

- Which model of translation, pertaining to the Pansoft translation software, can assist in the simplification of the process?

All scenarios assume an electronic edition as stated in Chapter 1 Section 1.1.2.5.4 Pansoft translation software because the print edition of DDC has

become almost redundant. There will possibly be no print edition 24 in English (Decimal Classification Editorial Policy Committee Minutes of meeting 138 2015). An electronic edition is also less expensive than a combination of print and electronic editions. These scenarios are based solely on the pricing information of the Pansoft translation software in Chapter 1 Section 1.1.2.5.4 Pansoft translation software. This is an original idea of the researcher, because there is no existing literature about multilingual translation scenarios, to indicate two extreme options (scenarios 1 and 2) with scenario 3 as a possible compromise. Other costs in terms of human resources, equipment and so on are not discussed because these can be calculated only by the authoritative body which signs the contract in conjunction with OCLC. A choice of scenario will, in fact, guide the decisions on how many people and other requisites will be necessary. It is only after such decisions have been made that the full cost can be calculated, as already mentioned in Chapter 1 Section 1.7 Delimitations of the study.

5.3.1 Scenario 1

This scenario consists of a separate Pansoft translation software instance or physical manifestation for each of the South African languages, hence ten instances as shown in Figure 5.4 (page 333), where the cost in Euros is indicated. The amount includes the cost of the ten Pansoft translation software instances or physical manifestations as well as the one WebDewey edition, as discussed in Chapter 1 Section 1.1.2.5.4 Pansoft translation software.



Figure 5.4: Ten instances scenario

The cost for this scenario (ten software instances and one WebDewey edition as stated before the figure) equals EUR 287 500. The running cost of the WebDewey edition will be an additional EUR 6 000 per year.

Table 5.3 (page 334) shows the advantages and disadvantages of scenario 1.

Table 5.3: Advantages and disadvantages of scenario 1

Advantages	Disadvantages
All languages receive equal treatment (full translation)	Expensive (cost of translation software)
	Higher number of human resources (translators and experts) needed, adding to costs
	Longer period to finish translations, adding to costs

It is highly unlikely that this option is manageable for a developing country such as South Africa and it can therefore be ruled out.

5.3.2 Scenario 2

The second scenario involves one Pansoft translation software instance or physical manifestation, with Afrikaans as language for tables, schedules and Relative Index terms, with additional Relative Index terms for the other nine languages as shown in Figure 5.5. The amount includes the cost of the one Pansoft translation software instance or physical manifestation as well as the one WebDewey edition as discussed in Chapter 1 Section 1.1.2.5.4 Pansoft translation software.



Figure 5.5: One instance scenario

The cost for this scenario (one software instance and one WebDewey edition as stated before the figure) equals EUR 40 000. The running cost of the WebDewey edition will be an additional EUR 6 000 per year.

Table 5.4 shows the advantages and disadvantages of scenario 2.

Table 5.4: Advantages and disadvantages of scenario 2

Advantages	Disadvantages
Inexpensive (cost of translation software)	Not all languages receive equal treatment
Lower number of human resources needed, thus lower costs	Negativity towards the preferential treatment of Afrikaans could mean little or no usage
Shorter period to finish translations, thus lower costs	

This option (even though it is inexpensive) is not desirable given the political sensitivity and controversy of Afrikaans, understood by many people as the language of Apartheid. The possible use of Afrikaans as main language can be justified to a certain extent by the fact that the Google translations into Afrikaans give better results than for the other languages as discussed in Section 5.3.4 Comprehensiveness of Relative Index terms translations.

5.3.3 Scenario 3

The third scenario involves three instances or physical manifestations of the Pansoft translation software. The translation team will have to decide on the languages. In Figure 5.6 (page 336) Afrikaans, Zulu and Southern Sotho feature as the main languages, but this is simply to illustrate the idea of main language with Relative Index terms in other languages and is not necessarily how the scenario will manifest itself in reality.

This scenario follows a mixed translation approach similar to the Swedish translation discussed in Chapter 2 Section 2.11 Norwegian and Swedish.

It is important to to consider the following aspects for choosing the main language of each instance:

- Number of speakers of a language
- Availability on Google Translate (at the time of writing, only Afrikaans, Zulu, Xhosa and Southern Sotho were available)

SouthAfrica.info (2016) gives the following statistics according to the 2011 census:

- Afrikaans: approximately 6.8 million speakers
- Zulu: approximately 11.6 million speakers (Xhosa has approximately 8.1 million speakers)
- Southern Sotho: approximately 3.8 million speakers (Northern Sotho has approximately 4.6 million speakers and Tswana 4 million)

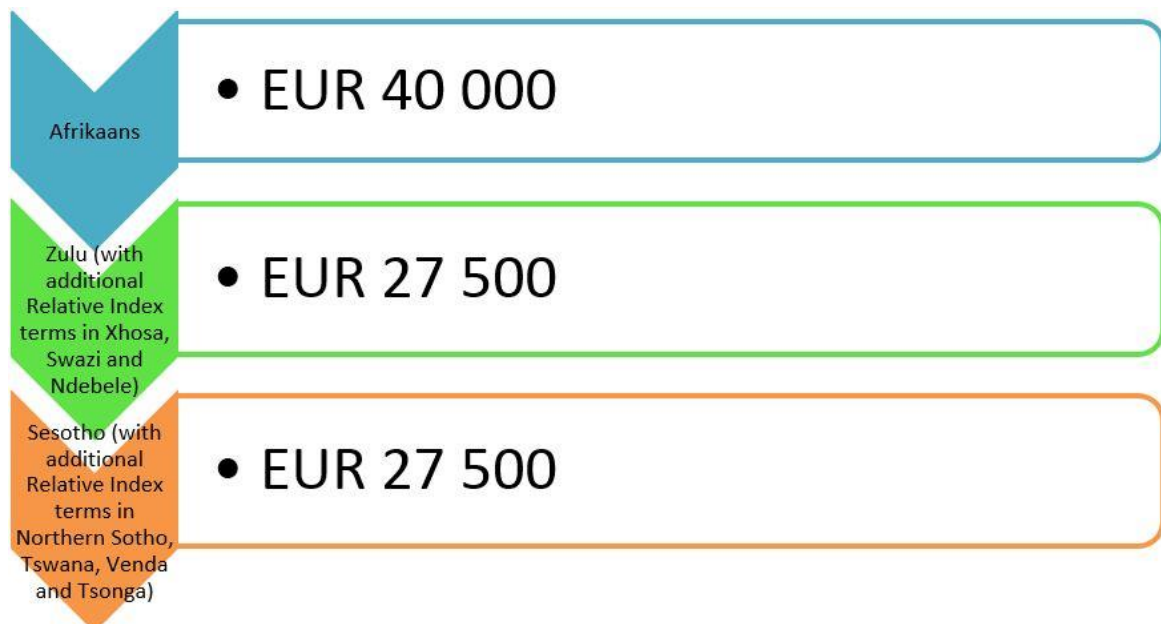


Figure 5.6: Three instances scenario

The cost for this scenario (three Pansoft translation software instances or physical manifestations and one WebDewey edition) equals EUR 95 000. The amounts in Euros include the cost of the Pansoft translation software instances or physical manifestations and the one WebDewey edition. The running cost of the WebDewey edition will be an additional EUR 6 000 per year.

Table 5.5 (page 337) shows the advantages and disadvantages of scenario 3.

Table 5.5: Advantages and disadvantages of scenario 3

Advantages	Disadvantages
Less expensive (cost of translation software)	Not all languages receive equal treatment
Lower number of human resources needed, thus lower costs	Negativity toward the preferential treatment of Afrikaans (if chosen as a main language) could mean little or no usage
Shorter period to finish translations, thus lower costs	

This option seems to be the most feasible. The possible use of Afrikaans as one of the main languages can be justified to a certain extent by the fact that the Google translations give better results for translations into Afrikaans than into the other languages, as discussed in Section 5.3.4 Comprehensiveness of Relative Index terms translations. English Relative Index terms could be added to the Afrikaans as a remedy. The placement of the Relative Index terms for Tsonga and Venda with any of the main languages could also be problematic. These two languages are not part of the Nguni or Sotho language families and speakers could resist the placement of them with Afrikaans – if Afrikaans is used at all – because of the existing negative attitude toward Afrikaans.

To justify the claim in Section 5.3.2 Scenario 2 and Section 5.3.3 Scenario 3 that Afrikaans achieves better translation results with Google Translate the following section discusses this in more depth.

5.3.4 Comprehensiveness of Relative Index terms translations

To get an indication of how Google Translate translates Relative Index terms of the languages in the third scenario and Xhosa, twenty terms were chosen (two from each main class). Presently, only Afrikaans, Zulu, Xhosa and Southern Sotho are available in Google Translate. The comprehensiveness categories (NT, PT and FT) of the scale used in Chapter 4 Data analysis, presentation and

interpretation have been used again. The researcher cannot judge if the Zulu, Xhosa and Southern Sotho terms which seem to have been fully translated are indeed correct, but given the absence of English words, they are deemed to have been fully translated.

Table 5.6 (page 339) shows the resulting Google translations.

Table 5.6: Google translations of Relative Index terms

DDC Relative Index terms	Afrikaans	Zulu	Xhosa	Southern Sotho
Computer networks	Rekenaarnetwerke	Amanethiwekhi Computer	Uthungelwano Iwekhompyutha	Marangrang Computer
Sensor networks	Sensor netwerke	Inzwa amanethiwekhi	Uthungelwano woluvo	Marangrang Sensor
Psychometrics-- tests	Psigometrika - toetse	Psychometrics - uvivinyo	Psychometrics - iimvavanyo	Psychometrics - ua ngola lithahlobo
Ethical problems	Etiese probleme	Izinkinga Ethical	lingxaki yenqobo	Mathata boitshwaro
Goodness of God	Goedheid van God	Ubuhle bukankulunkulu	Ukulunga kukathixo	Molemo oa Molimo
Witness bearing	Getuie peiling	Ukunikeza Ubufakazi	Kukunikela ubungqina	Paki e reheletsoeng ka
Intergovernmental fiscal relations	Interregerings- fiskale betrekkinge	Ubudlelwane tetemnotfo tabohulumende	Unxulumano phakathi koorhulumente	Dikamano tsa ho batla lekgetho a
Curriculums	Kurrikulums	Ezizofundwa	Kwiikharityhulam	Curriculums
Applied linguistics	Toegepaste taalkunde	Yezilimi Applied	Elwimi Applied	Sebelisoa ka linako e dipuo
Lipreading	Liplees	Lipreading	Kunzima ukuba	Lipreading
Liquid mechanics	Liquid meganika	Mechanics liquid	Ubuchwephetshe ulwelo	Mokelikeli nyenyenyane
Microbiology	Mikrobiologie	Microbiology	Ngeentsholongwane	Maekoroboiloji
Military engineering	Militêre ingenieurswese	Engineering Military	Zobunjinelu Military	Itokolla sesoleng boenjiniere
Roofing	Roofing	Zophahla	Zokuxhoma	Ho rulela
Pencil drawing	Potloodskets	Ipensela umdwebo	Ipensile umzobo	Pentšele setsoantsong
Games of chance	Gelukspele	Imidlalo of chance	Imidlalo yokuzonwabisa angasuka	Games sa monyetla
Literary criticism-- theory	Literêre kritiek - teorie	Kwemibhalo - theory	Hlalutya uncwadi - ithiyori	Bongoli ba libuka linaheng nyatsua - khopolo
Portuguese literature	Portugese letterkunde	Izincwadi Portuguese	Uncwadi Portuguese	Lingoliloeng Mapotoketsi
Historical geography	Historiese geografie	Geography Historical	Geography historical	Historical jeokrafi
Archaeology-- ancient places	Argeologie - antieke plekke	Imivubukulo - izindawo zasendulo	Archaeology - kwiindawo zamadulo	Archaeology - libaka tsa bohoho- holo

Table 5.7 gives an overview of the comprehensiveness based on the Google translations in Table 5.6 (page 339).

Table 5.7: Comprehensiveness of Relative Index terms translations

	NT	PT	FT
Afrikaans	1	1	18
Zulu	5	7	8
Xhosa	1	5	14
Southern Sotho	2	6	12

It is clear that Google Translate translates better into Afrikaans than into the other three languages examined, with 18 out of 20 terms fully translated. The Zulu result is lower than that of Xhosa and based on that, Xhosa can be the main language of the Nguni group instance. The indication of comprehensiveness is sufficient to justify Afrikaans as a choice for one translation instance as indicated in Section 5.3.2 Scenario 2 and Section 5.3.3 Scenario 3.

5.3.5 Summary of the scenarios

The fact that scenario 3 gives a less costly option which involves all languages is a positive confirmation of the feasibility of South African translations. However, cost is relative and it is possible to generate any amount of money for a worthy cause (“where there is a will, there is a way”). This being said, scenario 3 still seems to be the best option in terms of using available financial resources.

5.4 Chapter summary

This chapter shows that South African translations are feasible by using Google Translate to enable early translations and the mixed translation model for cutting

software costs. South African translations would be useful as well for local expansions of Table 2.

Chapter 6 Findings, recommendations and suggestions for further research follows with a summary of the findings and a general recommendation on how to proceed. It also gives suggestions for further research.

Chapter 6 Findings, recommendations and suggestions for further research

6.1 Introduction

In Chapter 5 South African translations: a workflow and a model the researcher presented different scenarios for using the Pansoft translation software and showed how a mixed translation approach can ease the financial burden of a translation project. The role of Google Translate in expediting the translation process was discussed.

This chapter reiterates the findings of the previous chapters to indicate how it links to the research questions in Chapter 1 Introduction, and how it supports the indication of feasibility of South African translations, thus solving the research problem.

A recommendation for the road ahead follows and the research concludes with some remarks on possible further studies to either supplement the findings and recommendation or point to more possibilities.

6.2 Findings

The researcher presents the findings based on the research questions presented in Chapter 1 Introduction. Each research question is presented in a separate section and is answered at the end of the section, after the answers of sub-questions. The main research question, *To what extent are South African translations feasible?* is answered in Section 6.5 Chapter summary.

6.2.1 Directions from the literature

To what extent do articles on DDC translations give direction pertaining to the matter of feasibility of translations?

- *What are the main themes in these articles?*

The main themes can be summarised as follows:

- A growing awareness about the needs of international users and changes to DDC to achieve harmony with these needs, described as internationalisation
 - Translations in many languages of the world were mentioned in earlier literature, but there were no detailed discussions about these translations
 - Adaptations caused confusion and did not promote the cause of bibliographic control as discussed in Chapter 2 Critical analysis of reported research
 - Later articles on specific translations, such as German, Icelandic, Italian, Norwegian, Swedish and Spanish gave valuable information about the translation software, the translation process, problems encountered with translations and local literary warrant
- *What challenges do translations present and how do translators deal with these challenges in terms of?*

- *The translation process and sequence of translating contents*

Articles on the German and Norwegian translations gave useful information on the translation process and the Norwegians mentioned the sequence of translation.

- *Problems with translation of DDC terminology*

Articles on German, Hindi, Italian, Norwegian, Swedish and Spanish gave information on translation problems, but had to be supplemented by information from e-mails as discussed in Chapter 5 Section 5.2.3.5 Step 5: Use of the Pansoft translation software and specifically in Table 5.2 Problems relating to translations.

- *Cost of translations*

The feasibility study of the Italians was not helpful because their situation was one of changing from DDC 22 (already available in Italian) to DDC 23, whereas there are no existing South African translations of any of the full or abridged editions.

- *Do these articles give insight into how translations deal with apparent shortcomings in DDC?*

The use of local literary warrant to expand mainly geographic areas, groups of people, groups of languages and historical periods are discussed in articles about the German, Icelandic, Italian, Norwegian, Swedish and Vietnamese translations. The Icelandic and Persian translations also indicate the use of options in DDC for language, literature and other subjects.

- *Do these articles show how translators should handle multiple languages?*

None of the consulted articles gave any information on multiple language translations in one country, but the idea of mixed translations in the Icelandic, Norwegian and Swedish articles helped in formulating a mixed translation model for South African translations in Chapter 5 Section 5.3.3 Scenario 3.

Although none of the articles gave any direct indication of feasibility of multiple language translations, there was helpful information about the process, sequence of translation, problems experienced and using the mixed translation model.

6.2.2 Google translations

How does Google Translate perform in translating parts of Abridged Edition 15?

- *How comprehensive are Google translations?*

The evaluation of the Google translations of Abridged Edition 15 into Afrikaans showed a high percentage of level of comprehensiveness; 77.1%.

- *What is the degree of editorial effort?*

The evaluation also indicated a high percentage of the translation needing little or no editing; 75%. The evaluation was limited to Afrikaans because the researcher could not make qualitative assumptions about the other languages. More pilot studies should be conducted for other South African languages. In Chapter 5 Section 5.3.4 Comprehensiveness of Relative Index terms translations there is, however, an indication of comprehensiveness of Relative Index terms translations for Southern Sotho, Zulu and Xhosa.

This gives an indication that Google Translate executed the translations of Abridged Edition 15 well enough for it to be used for more translations, as shown in Chapter 5 Section 5.2 Workflow for South African translations.

6.2.3 Simplifying the translation process

Is it possible to simplify the translation process?

- *To what extent can South African translators use Google Translate for the translation process?*

Existing Google translations can be used as a base for further translations and more Google translations can be added, showing the extent to which translators can use Google Translate.

- *How can Google translations assist with minimising time, effort and human input?*

The Google translations are good enough to reduce the number of people involved in the translation process because the translations need only to be edited. This will also save time. The suggested workflow as discussed in Chapter 5 Section 5.2 Workflow for South African translations indicates a first part of unofficial Google translations and a second part of officially editing and using the Pansoft translation software.

- *Which model of translation, pertaining to the Pansoft translation software, can assist in the simplification of the process?*

A mixed translation model, using three South African languages as main languages, was suggested in Chapter 5 Section 5.3 Scenarios for a South African translation model. The suggested model is the most cost-effective in terms of the Pansoft software cost, but also leaves the door open for more translations of WebDewey

It is possible to simplify the translation process by using Google Translate for more translations before a contract is signed. In this case, fewer people will be needed to work on the translations.

6.3 Recommendation

The researcher recommends the formation of a workgroup for South African translations of DDC. This workgroup can be localised at the beginning – for example, librarians from the Unisa Library and lecturers from the Departments of Information Science, Afrikaans and Theory of Literature and African Languages. After initial discussions, it should expand to the wider South African library community through LIASA, and specifically IGBIS.

The workgroup should look at the following:

- Utilising the current research to plan a translation strategy
- Initiating and encouraging discussions on South African translations via the mailing lists of LIASA, IGBIS, DDC South Africa and Sabinet
- Conducting a survey on librarians' attitudes towards South African translations
- Piloting and/or promoting further research, as suggested in Section 6.4
Suggestions for further research, for expanding the translation strategy
- Developing and executing the process for translations
- Investigating sources of funding
- Involving stakeholders from outside the library community, that is cultural organisations involved with promoting South African languages, including but not limited to:
 - Afrikaanse Taal- en Kultuurvereniging (ATKV)

- Amandebele kaMusi.com
- National Heritage Council
- Pan South African Language Board (PANSALB)
- The Heritage Foundation
- Department of Arts and Culture

6.4 Suggestions for further research

This section suggests topics for further research, indicating a vast range of possibilities.

6.4.1 Pure translation versus adaptation

The researcher investigated the feasibility of translations and suggested some possible expansions and the use of options in Chapter 1 Section 1.1.3.2 Areas for possible expansion and suitable options and Chapter 5 Section 5.2.3.5 Step 5: Use of the Pansoft translation software. Options could be incorporated in translations as described in Chapter 2 Section 2.7 Icelandic. It is also possible for translators to adapt DDC to reflect South African or African culture more extensively. Further research can investigate this possibility, keeping in mind local and international literary warrant.

6.4.2 Aspects of translation about South African languages other than Afrikaans

A study similar to the current research, but investigating how Google Translate deals with DDC translations of the other nine South African languages could also be useful. In Chapter 5 Section 5.3.4 Comprehensiveness of Relative Index terms translations the researcher has already mentioned that only Zulu, Xhosa and Southern Sotho were available at the time of writing. This can also lead to the following:

A study of conceptualism could be useful to decide:

- How English words in DDC differ from words in South African languages
- What is the impact of these differences on translation of these words?
- Are there English terms in DDC which cannot be translated into certain South African languages, similar to the experiences of other translations as discussed in Chapter 5 Section 5.2.3.3 Step 3: Editing of the Google translations?

More research about multilingual aspects of South African translations, including possible barriers (as observed by the researcher as cataloguer in the South African environment) is also necessary. What is the impact of the following on translations?

- The situation in South Africa in terms of language planning and non-compliance to government policy
- The government's attitude towards multilingualism, especially in terms of the preferential treatment of English
- People's attitude towards their own languages. Do they care enough to promote the use of these languages in the library community?
- English as cataloguing language in South Africa and its impact on the attitude towards translations of DDC
- Development of languages, especially in terms of availability in Google Translate

Figure 6.1 (page 349) depicts some barriers.

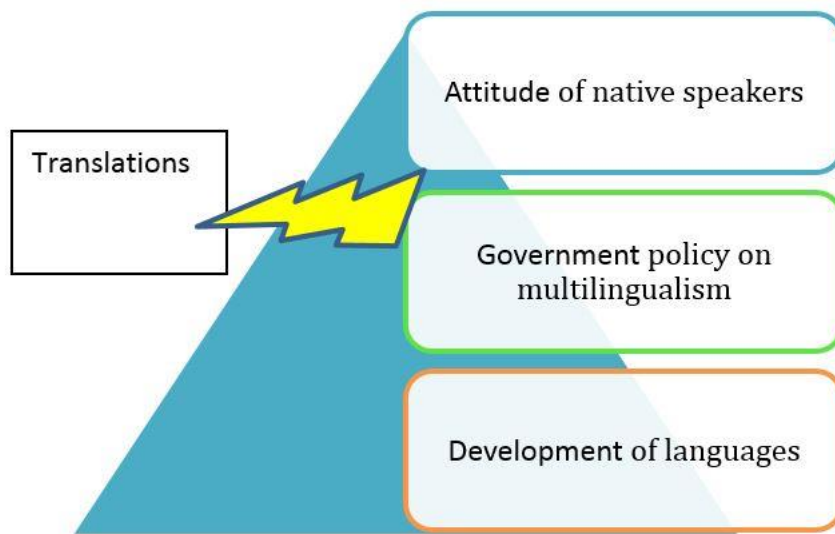


Figure 6.1: Barriers to translations

6.4.3 End user tools

A study in information storage and retrieval systems can assess the need for an end user tool similar to the German MelvilSearch as discussed in Chapter 2 Section 2.5 German and the Swedish WebDeweySearch as discussed in Chapter 2 Section 2.11 Norwegian and Swedish, also taking into account how to develop it for a South African union catalogue.

The possibility of using the South African translations of DDC summaries in mobile applications should also be investigated. There are at this time no licensed mobile applications of DDC so any such application would be a new and unique end user tool.

The possible educational use of such applications could be considered by researchers. The applications could be used to teach school learners about DDC and to enhance their general knowledge. Information science students can use a DDC application to learn number building principles.

6.4.4 Attitude towards South African translations

Detailed research into motivating librarians about translations, or a usability study, could be helpful before such a translation project is launched:

- How can librarians be motivated to accept that translations are useful in the South African context (in terms of expansions for South African history and geographic numbers, indigenous knowledge and so on)?
- How can librarians be encouraged to use existing translations of the summaries?
- How can existing translations be marketed?

6.4.5 Machine translation studies

Further machine translation studies can investigate additional aspects in terms of the following:

- Comparison between different machine translation applications using samples from Abridged Edition 15
- Comparison between one or more applications and a manual translation of Abridged Edition 15
- How typography (in Abridged Edition 15 and/or WebDewey) influences machine translations

6.5 Chapter summary

This chapter reiterated that South African translations are feasible, showing that the consulted literature yielded helpful information about the translation process, problems in translations and similar matters. It also showed how the results of the Google translations in terms of level of comprehensiveness and a low degree of editorial effort needed, indicated feasibility. Google translations can expedite translations for South Africa and help to simplify the process of multilingual translations. The South African translations of DDC can assist in promoting multilingualism and, in that way, deepen a South African cultural identity as mentioned in Chapter 1 Section 1.5 Motivation for the study.

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ANNEXURES

Annexure A EXAMPLES OF EVALUATION

080 General collections

080 Algemene versamelings

FTME

Class here abstracts, addresses, lectures, essays, interviews, graffiti, quotations

Klas hier abstrakte, **adresse**, lesings, essays, onderhoude, graffiti, kwotasies

FTEE

Class collections of brief bibliographic abstracts in 011; class essays as literary form, collections gathered for their literary quality in 800

Klas **versamelings kort** bibliografiese abstrakte in 011; klas essays as literêre vorm, versamelings versamel vir hul literêre gehalte in 800

FTME

See Manual at 080 vs. 800

Sien Handleiding by 080 800 teen

FTEE

.9 History, geographic treatment, biography

0,9 Geskiedenis, geografiese behandeling, biografie

FTME

Class history, geographic treatment, biography of collections in specific languages and language families in 081–

Klas geskiedenis, geografiese behandeling, biografie van versamelings in spesifieke tale en taal families in 081-089

089

FTME

> 081–089 General collections in specific languages and language families

> 081-089 Algemene versamelings in spesifieke tale en taal families

FTME

Class comprehensive works in 080

Klas omvattende werke in 080

FTME

See Manual at 081–089

Sien Handleiding by 081-089

FTME

Arrange collections alphabetically under 080

Reël versamelings alfabeties onder 080

FTEE

081 General collections in American English

081 Algemene versamelings in Amerikaanse Engels

FTME

English-language collections of Western Hemisphere

Engelse **versamelings** **Westelike** Halfrond

FTME

Number of NTME

0

% of total	0
Number of PTEE	0
% of total	0
Number of PTME	0
% of total	0
Number of FTEE	3
% of total	25
Number of FTME	9
% of total	75
Total measures	12
Test of total measures	12
Blank spaces	12

430 German and related languages

430 Duitse en verwante tale

FTME

Including special topics of Germanic languages (e.g., writing systems, phonology, phonetics of the standard form of the language; etymology of the standard form

Insluitend spesiale onderwerpe van Germaanse tale (bv, skryf stelsels, fonologie, fonetiek van die standaard vorm van die taal; etimologie van die standaard vorm

<p>of the language; dictionaries of the standard form of the language; grammar of the standard form of the language; historical and geographic variations, modern nongeographic variations; standard usage of the language [prescriptive linguistics])</p>	<p>van die taal; woordeboeke van die standaard vorm van die taal; grammatika van die standaard vorm van die taal; historiese en geografiese verskille, moderne non geografiese variasies; standaard gebruik van die taal [voorskriftelik linguistiek])</p>
--	---

PTME

Class here Germanic languages

Klas hier Germaanse tale

FTME

For English and Old English (Anglo-Saxon), see 420

Vir **die** Engelse en Ou Engels (Anglo-Saksiese), sien 420

FTME

*Add to base number as instructed under 420–490

* Voeg by basis nommer **as opdrag** onder 420-490

FTEE

.01 Philosophy and theory of Germanic languages

0,01 Filosofie en teorie van Germaanse tale

FTME

Including semantics, pragmatics, languages for special purposes; lexicology; psycholinguistics

Insluitend semantiek, pragmatiek, tale vir spesiale doeleindes; leksikologie; psigolinguistiek

FTME

Class dictionaries; lexicography; discursive works on terminology intended

Klas woordeboeke; leksikografie; diskursiewe werke oor terminologie
bedoel

to teach vocabulary, spelling and pronunciation in applied linguistics; history

woordeskat, spelling en uitspraak leer in Toegepaste Linguistiek; geskiedenis

of word meanings; teaching of languages for special purposes; translation of

van woordbetekenis; onderrig van tale vir spesiale doeleindes; vertaling van

languages for special purposes; works on schools, theories, methodologies

tale vir spesiale doeleindes; werk op skole, teorieë, metodes

that stress syntax, or syntax and phonology; psycholinguistics of a specific

wat stres sintaksis, of sintaksis en fonologie; psigolinguistiek van 'n spesifieke

topic (e.g., reading) in 430. Class dictionaries of languages for special

onderwerp (bv lees) in 430. Klas woordeboeke tale vir spesiale

purposes with the purpose, plus notation 03 from Table 1, e.g., medical

doeleindes met die doel, plus notasie 03 van Tabel 1, bv, mediese

dictionaries 610.3

woordeboeke 610,3

FTEE

.02 Miscellany of Germanic languages

0,02 **Miscellany** van Germaanse tale

PTME

.028 5 Computer applications of Germanic languages

0,028 5 Rekenaartoeappings van Germaanse tale

	FTME
Class computer applications in corpus linguistics in 430.01	Klas rekenaartoeappings in korpuslinguistiek in 430,01
	FTME
.03 Encyclopedias and concordances of Germanic languages	0,03 Ensiklopedieë en konkordansies van Germaanse tale
	FTME
Do not use for dictionaries; class in 430	Moet nie gebruik vir woordeboeke; klas 430
	FTME
.05–.09 Standard subdivisions of Germanic languages	0,05-0,09 Standard onderafdelings van Germaanse tale
	PTME
.1–.9 Standard subdivisions of German	0,1-0,9 Standard onderafdelings van die Duitse
	PTME
Notation from Table 1 as modified under — 01–09 in Table 4, e.g., semantics of German 430.1	Notasie van Table 1 soos gewysig onder - 01-09 in Tabel 4, bv semantiek van Duitse 430,1
	PTME

439 Other Germanic languages

439 Ander Germaanse tale

FTME

Including Yiddish; West Germanic languages; Frisian, Low German (Plattdeutsch); North Germanic languages (Nordic languages); comprehensive works on east Scandinavian languages, comprehensive works on west Scandinavian languages, comprehensive works on modern west Scandinavian languages; comprehensive works on languages in the Nordic countries; Old Norse [Old Icelandic], Icelandic, Faroese; East Germanic languages

Insluitend **Yiddish**; Wes-Germaanse tale; **Fries, Low German** (Nederduits); Noord-Germaanse tale (Nordiese tale); omvattende werke op die **oostekant** Skandinawiese tale, omvattende werke **op weste** Skandinawiese tale, omvattende werke op moderne **weste** Skandinawiese tale; omvattende werke op tale in die Nordiese lande; **Old Norse** [ou Yslands], Yslands, Faroëes; Oos-Germaanse tale

PTEE

For Finnish, Sámi, see 494

Vir Finse, Sámi, sien 494

FTME

.3 Netherlandish languages

0,3 Nederlandse tale

FTME

Including Afrikaans

Insluitend Afrikaans

FTME

.31 *Dutch

0,31 * Nederlandse

	FTME
Including Old Low Franconian	Insluitend Ou Lae Frankiese
	FTME
Class here Flemish	Klas hier Vlaamse
	FTME
.7 *Swedish	0,7 * Sweedse
	FTME
Including historical and geographic variations, modern nongeographic variations	Insluitend historiese en geografiese verskille, moderne nongeographic variasies
	PTME
.8 Danish and Norwegian	0,8 Deense en Noorse
	FTME
Including Bokmål, Dano-Norwegian, Riksmål; New Norse, Landsmål	Insluitend Bokmål, Dano-Noors, Riksmål; New Norse, Landsmål
	PTEE
*Add to base number as instructed under 420–490	* Voeg by basis nommer as opdrag onder 420-490
	FTEE

Number of NTME	0
% of total	0
Number of PTEE	2
% of total	6.896551724
Number of PTME	6
% of total	20.68965517
Number of FTEE	3
% of total	10.34482759
Number of FTME	18
% of total	62.06896552
Total measures	29
Test of total measures	29
Blank spaces	29

Annexure B MASTER STATISTICS OF EVALUATION

The statistics below were derived from the Excel sheets of each unit used.

	# of NTME	% of NTME	# of PTEE	% of PTEE	# of PTME	% of PTME	# of FTEE	% of FTEE	# of FTME	% of FTME
001	1	2.2	3	6.5	6	13	8	17.4	28	60.9
002	2	16.7	0	0	2	16.7	1	8.3	7	58.3
003	1	12.5	1	12.5	1	12.5	2	25	3	37.5
004-006	8	3.2	31	12.4	26	10.4	67	27	117	47
010,011	2	3.6	2	3.6	5	8.9	7	12.5	40	71.4
020,025,027,028	5	2.5	18	8.9	18	8.9	40	19.8	121	59.9
030-033	0	0	0	0	2	9.1	4	18.2	16	72.7
050-051	0	0	1	7.1	0	0	3	21.4	10	71.5
060,069	1	3	2	5.9	3	8.8	4	11.8	24	70.5
070	2	3.9	6	11.8	2	3.9	9	17.6	32	62.8
080-081	0	0	0	0	0	0	3	25	9	75
090-099	1	4.5	4	18.2	5	22.7	2	9.1	10	45.5
SUB TOTALS	23	4.3	68	7.2	70	9.6	150	17.8	417	61.1
100-109	0	0	2	9.5	4	19.1	2	9.5	13	61.9
140-149	0	0	9	29	3	9.7	4	12.9	15	48.4
150-159	1	0.4	8	2.9	31	11.3	65	23.7	169	61.7
170-173	0	0	1	4	1	4	5	20	18	72
SUB TOTALS	1	0.1	20	11.4	39	11	76	16.5	215	61
200-209	0	0	4	5.3	4	5.3	15	20	52	69.4
230-239	0	0	9	8.7	12	11.5	23	22.1	60	57.7

260-262	0	0	1	1.9	3	5.7	13	24.5	36	67.9
290-299	0	0	12	5.3	14	6.2	60	26.7	139	61.8
SUB TOTALS	0	0	26	5.3	33	7.2	111	23.3	287	64.2
300-307	14	2.4	60	10.2	58	9.8	116	19.6	342	58
320,323	0	0	8	5	24	15	25	15.6	103	64.4
330,336	2	1.9	8	7.5	13	12.1	9	8.4	75	70.1
340-342	5	3.2	9	5.8	15	9.6	41	26.3	86	55.1
350-353	3	1.1	12	4.5	30	11.3	62	23.3	159	59.8
360,361,364	2	1.7	8	6.7	6	5	25	21	78	65.6
370,371,378	10	3.2	11	3.4	34	10.8	51	16.1	210	66.5
380,381,384	3	4.5	6	9	9	13.4	12	17.9	37	55.2
390,391,392	2	3	5	7.2	9	13	18	26.1	35	50.7
SUB TOTALS	41	2.3	127	6.6	198	11.1	359	19.4	1125	60.6
400-409	1	3.1	1	3.1	6	18.8	4	12.5	20	62.5
410-419	1	1.4	10	14.1	14	19.7	10	14.1	36	50.7
430,439	0	0	2	6.9	6	20.7	3	10.3	18	62.1
490-499	2	2	13	12.9	21	20.8	10	9.9	55	54.4
SUB TOTALS	4	1.6	26	9.3	47	20	27	11.7	129	57.4
500-509	1	2	5	9.8	6	11.7	5	9.8	34	66.7
510-519	0	0	11	10.1	23	21.1	20	18.3	55	50.5
530-539	5	3.5	7	5	24	17	17	12.1	88	62.4
570-571	3	3.1	5	5.1	19	19.4	12	12.2	59	60.2
SUB TOTALS	9	2.2	28	7.5	72	17.3	54	13.1	236	60
600-609	3	4.7	6	9.4	2	3.1	6	9.4	47	73.4

630-639	5	1.7	32	11.3	61	21.5	59	20.8	127	44.7
640-649	8	3.2	21	8.3	35	13.9	42	16.7	146	57.9
SUB TOTALS	16	3.2	59	9.7	98	12.8	107	15.6	320	58.7
700-709	2	1.6	6	4.8	15	11.9	22	17.4	81	64.3
720-729	2	1.9	9	8.7	19	18.5	8	7.8	65	63.1
760-769	1	1.4	9	12.5	15	20.8	15	20.8	32	44.5
770-779	1	0.9	13	12	17	15.8	16	14.8	61	56.5
SUB TOTALS	6	1.5	37	9.5	66	16.8	61	15.2	239	57.1
800-809	2	1.4	4	2.8	28	19.9	16	11.4	91	64.5
890-899	0	0	16	21.3	14	18.7	5	6.7	40	53.3
SUB TOTALS	2	0.7	20	12.1	42	19.3	21	9	131	58.9
900-909	0	0	3	4.8	5	8.1	4	6.5	50	80.6
910-919	3	2.4	12	9.6	11	8.8	31	24.8	68	54.4
920-929	3	2.4	2	1.6	9	7.2	27	21.6	84	67.2
960-969	4	3.5	2	1.8	9	7.9	8	7	91	79.8
SUB TOTALS	10	2.1	19	4.5	34	8	70	15	293	70.5
Table 1	1	0.9	7	6.5	5	4.7	31	29	63	58.9
Table 4	1	1.3	8	10.1	9	11.4	20	25.3	41	51.9
SUB TOTALS	2	1.1	15	8.3	14	8.1	51	27.2	104	55.4
TOTALS	114	1.7	445	8.3	713	12.8	1087	16.7	3496	60.4

Annexure C PERMISSION LETTER FROM OCLC

June 17, 2014

Gert de Jager
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DDC as subject of Doctoral Thesis

OCLC as owner of the Dewey Decimal Classification system, hereby authorizes Gert de Jager to use for doctoral thesis research entitled *An exploratory study of translations of the Dewey Decimal Classification system into South African languages* at the University of South Africa the following items:

1. Worldwide usage information of the DDC
2. Use of dewey.info
3. Use of a selection of DDC numbers and captions as examples of translations
4. Permission to study and use the Pansoft translation software to indicate how it is used in DDC translations
5. Limited access to the current version of the DDC 23 database in MARCXML

Yours sincerely,

A handwritten signature in black ink that reads "Michael Panzer".

Michael Panzer
Editor in Chief, Dewey Decimal Classification

Annexure D LETTER FROM LANGUAGE EDITOR

PO Box 1439
Wingate Park
0153

19 February 2017

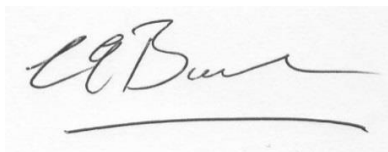
Editing of thesis: Mr Gert de Jager: Student Number: 6908020

This letter serves to confirm that I have performed the English language editing on the thesis to be submitted by Mr Gert Johannes Jacobus de Jager in accordance with the requirements for the degree of Doctor of Literature and Philosophy in the subject Information Science and entitled:

*An exploratory study of translations of the Dewey Decimal
Classification system into South African languages*

While I am a permanent employee of the Directorate: Language Services at the University of South Africa in Pretoria – where I serve as an editor and translator – the editing of Mr de Jager’s thesis was undertaken in my personal capacity.

Yours faithfully

A handwritten signature in black ink, appearing to read 'CE Baudin', with a horizontal line underneath.

CE Baudin
082 803 333