Qualitative content analysis: theoretical foundation, basic procedures and software solution

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Qualitative Content Analysis

Theoretical Foundation, Basic Procedures and Software Solution

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Philipp Mayring: Qualitative Content Analysis. Theoretical Foundation, Basic Procedures and Software Solution

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1. Introduction: Research Methods Between Qualitative and Quantitative Paradigms

This introduction criticizes the methodological dichotomization of qualitative and quantitative research, defines Qualitative Content Analysis as a mixed methods approach (containing qualitative and quantitative steps of analysis) and advocates common research criteria for qualitative and quantitative research. Finally, a step-by-step model of the (qualitative-quantitative) research process is presented.

Perhaps, no issue in social sciences contains more differences of opinion than research methodology. And there is perhaps no topic with more importance for scientific work and valid research results than that of adequate research methods. The disagreement about methods between different social science disciplines becomes evident in different forms: In sociology, an interpretive field study orientated tradition and a quantitative survey oriented tradition coexist. In psychology, quantitative experiments for causal inferences are within mainstream whereas qualitative approaches only occur recently. In economics, case studies were predominant at the time when quantitative economics rose. “This plurality makes it difficult to establish criteria for evaluation or to design curricula for teaching research methods” (Packer, 2011, p. 2). More and more, method preferences seem to be individual and arbitrary decisions of researchers.

1.1 Science War: Conflicting Paradigms

In 1959, Snow diagnosed two cultures in sciences, working with different methods: a constructivist, postmodern position and a realistic position (Snow, 1959). In the nineties, after a parody on postmodern constructivism (the “Sokal hoax”) the situation exacerbates to a science war (Ross, 1996; Bucchi, 2004). On the one hand stands a rigid positivistic conception of research with a quantitative, experimental methodology, on the other hand an open, explorative, descriptive, interpretive conception using qualitative methods.

Two factors have recently intensified the methodological debate in social sciences: under the flag of “evidence basement” the requirement for experiments in the form of Randomized Controlled Trials (RCTs) has been formulated as the only valid scientific procedure. Not only within health studies (evidence based medicine) but as well in education, social work and other social sciences, RCTs are seen as gold standard and institutions have been founded to collect, to review and to meta-analyze such studies (Cochrane Collaboration, Campbell Collaboration, cf. www.campbellcollaboration.org). This development has mobilized qualitative researchers. Denzin (2010) published a qualitative manifesto (“A call to arms”), connecting the evidence-based movement with neoliberal politics, using a narrow model of objectivity, opposed against another form of science as tentative, interpretive (the researcher as bricoleur), as well as critical, empowerment-guided (the researcher as actor), following not only scientific criteria but also poetic and artistic criteria (embodied experience, narrative truth, research report as literary text).

If not coming from a position of radical constructivism (treating different positions as equivalent subjective constructions), this situation is extremely unsatisfying for experienced researchers and newcomers. Of course the question of adequate research methods needs a deeper discussion of positions in theory of science (e.g. realism versus constructivism) of course. This could hardly be done within the framework of this book.

Excurse: A Theory of a Science Framework for Qualitative Content Analysis

Guba and Lincoln (2005) are differentiating between four paradigms in the theory of science. The following table characterizes the basic beliefs of those approaches:

Table 1: Basic beliefs (metaphysics) of alternative inquiry paradigms (Guba & Lincoln, 2005, p. 193)

Item	*Positivism*	*Postpositivism*	*Critical Theory*	*Constructivism*
Ontology	Naïve realism – "real" reality but apprehendible	Critical realism – "real" reality but only imperfectly and probabilistically apprehendible	Historical realism – virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time	Relativism – local and specific constructed and co-constructed realities
Epistemology	Dualistic/objectivistic; findings true	Modified dualistic/objectivistic; critical tradition/community; findings probably true	Transactional/subjectivist; value-mediated findings	Transactional/subjectivist; created findings
Methodology	Experimental/manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogical/dialectical	Hermeneutical/dialectical

I will try to discuss those positions on the background of our context of content analysis. If we are looking at approaches to text analysis, we can differentiate between two extreme positions, coming from different epistemological backgrounds:

- The hermeneutical position, embedded within a constructivist theory, tries to understand the meaning of the text as interaction between the preconceptions of the reader and the intentions of the text producer. Within the hermeneutical circle (cf. chapter 3.2) the preconceptions are refined and further developed in confrontation with the text. The result of the analysis remains relative to the reading situation and the reader.

- The positivistic position tries to measure, to record and to quantify overt aspects of the text. Those aspects of the text can be detected automatically; their frequencies can be analyzed statistically. The results of the analysis claim objectivity.

A strict contraposition of those positions ignores the possible convergences: The social constructivist theory formulates the possibility of an agreement between different individual meaning constructions and allows by that the concept of a socially shared quasi-objective reality. Modern hermeneutical approaches try to formulate rules of interpretation. By this, the analysis gains objectivity. On the other hand, positivistic positions had been refined to post-positivism or critical rationalism (Popper). Here, only an approximation to reality, accompanied by critical efforts of researchers to falsify hypotheses, is held to be possible, representing again the notion of an agreement process in talking about reality instead of a naive copy of reality.

Another important approach to reconcile the conflicting paradigms results from a differentiation of phases of the research process. Hans Reichenbach has worked out the difference between the first phase of defining the research question and developing hypotheses (context of discovery) and a second phase of testing hypotheses (context of justification) (cf. Hoyningen-Huene, 1987). Later on, a third phase of deriving praxis consequences from the research results (context of application) was added. In my opinion, we can follow different paradigms in different phases. Within the context of discovery and the context of application, a critical position would be important. Good research in social sciences should reflect the relevance of the research question and the possible consequences; this is an important position especially within qualitative research. But in the context of justification, a postpositivistic or moderate constructivist position would be adequate to guarantee scientific rigor.

1.2 Mixed Methods as a Solution?

In the last decades, the movement of mixed methods research has evolved as a new alternative, as a “third way” in social and behavioral science (Creswell & Plano Clark, 2010; Teddlie & Tashakkori, 2009). Models of a combination of qualitative and quantitative research approaches have been developed (Mayring, 2001; Mayring, Huber, Guertler & Kiegelmann, 2007). This movement, however, has not led to a new methodology; it puts together different steps of analysis with their different logics, mainly following a pragmatic theory of science (the methodology is adequate if it leads to the solution of the research question). Uwe Flick (1992) argues for a triangulation of qualitative and quantitative research, where each approach follows its own “method-appropriate criteria” (p. 175). But can we conduct research projects with different inherent quality criteria? Researchers looking for adequate methods are confronted with handbooks and textbooks representing the one or the other family using different criteria and sometimes including the permission to mix them up, but without a theory of integration.

Thus a methodological arbitrarism remains, best formulated in the textbook of Yin (2011), when he states,

- that the design has to be formulated at the beginning of the study **or not**;

- that you need much theory **or less**;
- that you have to plan your study **or not**;
- that the results have to be generalized **or not**.

These results are an „anything goes“-standpoint which is not satisfying.

1.3 Common Research Criteria for Qualitative and Quantitative Approaches

The best way to escape this (“postmodern”) methodological arbitrarism would be formulating obligatory quality criteria valuable for quantitative as well as qualitative (as well as mixed method) research. Some efforts have been made already in the direction of defining common obliging research criteria:

- King, Keohane & Verba (1994) suggested a unified approach following a logic of inference in qualitative and quantitative approaches, but did not work out concrete criteria.
- The Keystone of Science Project (Gauch, 2003) and the National Research Council (2002) formulated criteria for qualitative projects referring to common steps of analysis (Pose significant questions that can be investigated empirically! Link research to relevant theory! Use methods that permit direct investigation of the question! Provide coherent and explicit chain of reasoning! Replicate and generalize across studies! Disclose research to encourage professional scrutiny and critique!). But this advice remained unspecific as well, because it did not provide clear methodological procedures.
- The Cochrane Qualitative Research Methods Group (Noyes, Popey, Pearson, Hannes & Booth, 2008) has listed possibilities of qualitative studies to add evidence-based reviews (Informing, enhancing, extending and supplementing reviews), but leave the quantitative-experimental gold standard.
- The American Educational Research Association AERA (2006) has formulated standards for reporting on empirical social science research in its publications, especially for qualitative projects: clear description of procedures, presentation of evidence, reasoning of interpretations and critical verification, but it does not define procedures.

On such conceptions, a valid and fruitful understanding of scientific work could be built up, which overcomes the problematic dichotomization of the qualitative versus the quantitative approach.

1.4 Qualitative Content Analysis as Mixed Methods Approach, Following Common Research Standards

The central idea of Qualitative Content Analysis is to start from the methodological basis of Quantitative Content Analysis (cf. chapter 3.1) but to conceptualize the process of assigning categories to text passages as a qualitative-interpretive act, following content-analytical rules (will be further explained in chapter 4 and 6). In this respect, the Qualitative Content Analysis is a mixed methods approach: assignment of categories to text as qualitative step, working through many text passages and analysis of frequencies of categories as quantitative step.

Furthermore, we formulate strict content-analytical rules for the whole process and for the specific steps of analysis. In this respect, our approach is dedicated to the common research criteria approach formulated above. But the Qualitative Content Analysis itself is to be understood as a data analysis technique within a rule guided research process, and this research process is bound to common (qualitative and quantitative) research standards as shown in the next chapter.

1.5 Basic Research Steps

On this basis we try to develop a step-by-step model of the research process which is valuable for qualitative and quantitative (and mixed methods) research. The model starts from traditional research processes of quantitative approaches and reformulates and expands them for qualitative approaches. Seven steps are differentiated (cf. Mayring 2001; 2012).

Step 1: Concrete research question (relevance to praxis; eventually hypotheses; formulation and explication of the researcher's standpoint)

The research questions have to be specified, expressed in a real question, not only a topic (like some qualitative projects do). Even for explorative questions, a specification is important because the results can be directly related to them (cf. step 7). Without this specification, the research process remains arbitrary. A clear research question enables one to base the research process on praxis problems and makes the research praxis relevant, which is an asset of qualitatively oriented research. Quantitative methodology on the other hand requires at this point the formulation of hypotheses in a strictly deductive thinking manner. For qualitatively oriented explorative studies, even descriptive studies, often the formulation of hypotheses is not possible, so we have to soften this requirement ("eventually formulation of hypotheses"). On the other hand, qualitative thinking often implies the conception of a researcher–subject–interaction, which means that the researcher formulates his or her standpoint in advance, and this is a form of hypotheses as well.

In chapter 8 we have introduced a recently developed open access software for Qualitative Content Analysis (QCAmap). We will give hints and explanations to this software within text blocks during the book:

Link to QCAmap software (www.qcamap.org):

This means that each Qualitative Content Analysis needs a research question as starting point, and this is implemented in the software as an obligatory text field starting the project; if there are several runs through the text, e.g. with inductive category development and deductive category application or different inductive or deductive runs, they all need specific research questions. The software program demands this from you. They can be processed parallel (cf. chapter 6.5).

Step 2: Linking research question to theory (state of the art, theoretical approach, preconceptions for interpretations)

This is a necessary step to frame research question and research results within theory, as the sum of all relevant research approaches and research results in relation to research question and subject area. Again, this is not self-evident regarding qualitative research. For example, some advocates of Grounded Theory demand not to block the open sight on the subject by theories. On the other hand, every research process is influenced by (hidden or formulated) preconceptions and only by linking research to theory a scientific progress is possible. This is especially true for interpretations. The "hermeneutical circle" (Schleiermacher) as basic procedure for interpretations means the formulation of preconceptions in advance and the stepwise modification of those preconceptions in confrontation with the material (cf. chapter 3.2).

Step 3: Definition of the research design (explorative, descriptive, relational, causal, mixed)

Following the specified research question, the adaptive research design, as the basic logic of the study, can be defined. I have shown (Mayring, 2007a; 2010) that four basic research designs can be differentiated: explorative, descriptive, correlational or causal designs. In contrast to some narrow-focused quantitative researchers, we do not believe that only causal design (experimental studies) or relational designs (correlation studies) are scientifically valuable. If explorative or descriptive studies are well formulated, they can contribute as well to important results. Furthermore, mixed designs, as just mentioned in chapter 1.2, are gaining more and more importance. Only if we accept those qualitatively oriented designs, we can apply scientific rules and rigor to them. This corresponds to the fourth claim of the National Research Council: "Provide coherent and explicit chain of reasoning!" (National Research Council, 2002).

In respect to content analysis, which is characterized by working with categories or systems of categories, the research designs have the following forms:

- Explorative design: Formulating new categories out of the material (inductive category development, cf. chapter 6.2)
- Descriptive design: Working through the texts with a deductively formulated category system (cf. chapter 6.4) and registering the occurrence of those categories, in a nominal way (category X has been found in the material) or in category frequencies.
- Relational design: Cross-tabulation of categories with person variables (e.g. comparison of category frequencies between women and men i.e. cross-tabulation category occurrences by gender), correlation (usually non-parametric) of ordinal category systems (cf. chapter 6.4)
- Causal design: A Content-analytical variable (i.e. nominal or ordinal deductive category system) within an experimental design; longitudinal analysis of category systems e.g. with biographical material. It is important to mention that causal analysis is as well possible outside a quantitative experimental design (cf. Mayring, 2007a).
- Mixed design: In chapter 6.5 several mixed content-analytical methods like typification or content structuring are described.

Step 4: Defining of the (even small) sample or material and the sampling strategy

Even if qualitatively oriented studies often work with small samples, with single case studies, they have to describe and give arguments for the sample size and sampling strategy. The sample, as the empirical basis of the research project, can consist of documents (different files, web-pages), persons (interviews e.g.), situations (field notes) or broader entities (e.g. groups, cities). In any case, a sampling strategy has to be developed. Random sampling is only one of those strategies (even sometimes relevant in Qualitative Content Analysis, e.g. newspaper analysis); cluster samples, stratified samples, grouped in respect of theoretical considerations, or stepwise explorative sampling in the form of “Theoretical Sampling” (Glaser & Strauss, 1967) are possible procedures. Convenient samples or ad-hoc-samples, i.e. the researcher taking what he gets without any argumentation, should be avoided. If it is the only solution, then the possibilities of generalization of the results are widely restricted.

Link to QCAmap software (www.qcamap.org):

Within the software package the “cases” of the sample consist in documents. For each research question those documents (interview transcripts of different persons, field notes, files …) the relevant documents have to be divided into different text files and converted in Unicode (txt).

Step 5: Methods of data collection and analysis, pilot tested

Clear methodological procedures in data collection and data analysis are basic within quantitative and qualitative approaches. A good argumentation for a specific technique often consists of a comparison to an alternative technique. So projects working with Qualitative Content Analysis have to give arguments why they do not use another text analysis procedure, e.g. quantitative content analysis or Grounded Theory Coding (cf. for an overview chapter 2). Within quantitative approaches usually standardized procedures, for example test instruments, are used. On the other hand, within qualitative approaches the instruments (interview agenda) are developed for the specific study and they have to be pilot tested.

In Qualitative Content Analysis the category systems are developed inductively out of the concrete material or deductively put together individually for the specific study. Therefore, those elements have to be pilot tested as well for gaining methodological strength. This is possibly very easy because the textual material can be processed several times. In the step-by-step models of inductive and deductive categorization (cf. chapters 6.3 and 6.5) a pilot study element is always formulated to test and modify the category systems.

Link to QCAmap software (www.qcamap.org):

After the first coding, the software program automatically gives a hint, that the category system needs a pilot test phase. You can decide, whether it is too early or you can proceed with this pilot phase following the step-by-step model. If the category system or the central content-analytical rules (category definitions, level of abstraction, coding agenda) are changed as a result of the pilot test, the material has to be coded again from the beginning.

Step 6: Processing of the study, presentation of results in respect to the research question

So we have seen, that any changes of the instruments, and of course changes of the research question have the consequence of a new process of the step-by-step model. Qualitative researchers often characterize the research process as cyclic (in contrast to the linear quantitative research process, moving from research question to results). We consider the possibilities of changing instruments and even the research question within the project as sometimes important, but then we put the same rigor to the new instruments or research question.

At the end of processing the study it is important for quantitative and for qualitative studies to present the results in a broad descriptive sense and in the more specific sense of answering the research question.

Step 7: Discussion in respect to quality criteria

A critical discussion of the own research results seems to be crucial for a scientific approach. The classical criteria, deriving from the test theory (objectivity, reliability and validity) cannot be simply transferred to qualitative approaches (cf. Steinke, 2000). But an introduction of totally different criteria seems to be problematic as well. A position, influenced by a constructivist theory of science, that qualitative and quantitative approaches, each following their own quality criteria, can be combined by triangulation (e.g. Flick, 2007) is not compatible with our intention of a unified scientific process. I think, validity in a broader sense is usually less of a problem within qualitative approaches, because they seek to be subject centered, close to everyday life (naturalistic perspective, field research), especially when the research process remains theory driven (construct validity). In qualitative research, efforts have to be made to enhance reliability in a broader sense. Within Qualitative Content Analysis, the rule guided procedures can strengthen this criterion. Objectivity, defined as total independence of the research results from the researcher, is held to be difficult within qualitative approaches. But on the other side, they discuss the interaction researcher–subject and strengthen objectivity in a broader sense.

Link to QCAmap software (www.qcamap.org):

For Content Analysis in particular, several specific quality criteria have been developed like inter-coder and intra-coder agreement, which will be discussed in chapter 6. Both criteria are implemented in the software program: on the project page an agreement button opens the possibility to share the project with a second coder or coding process and to compare the results (cf. chapter 7).

An overview of theses seven steps, which make up a general step-by-step model of the research process, is given in the following figure (for specific content-analytical step-by-step models see chapter 4.6 and the example in chapter 5).

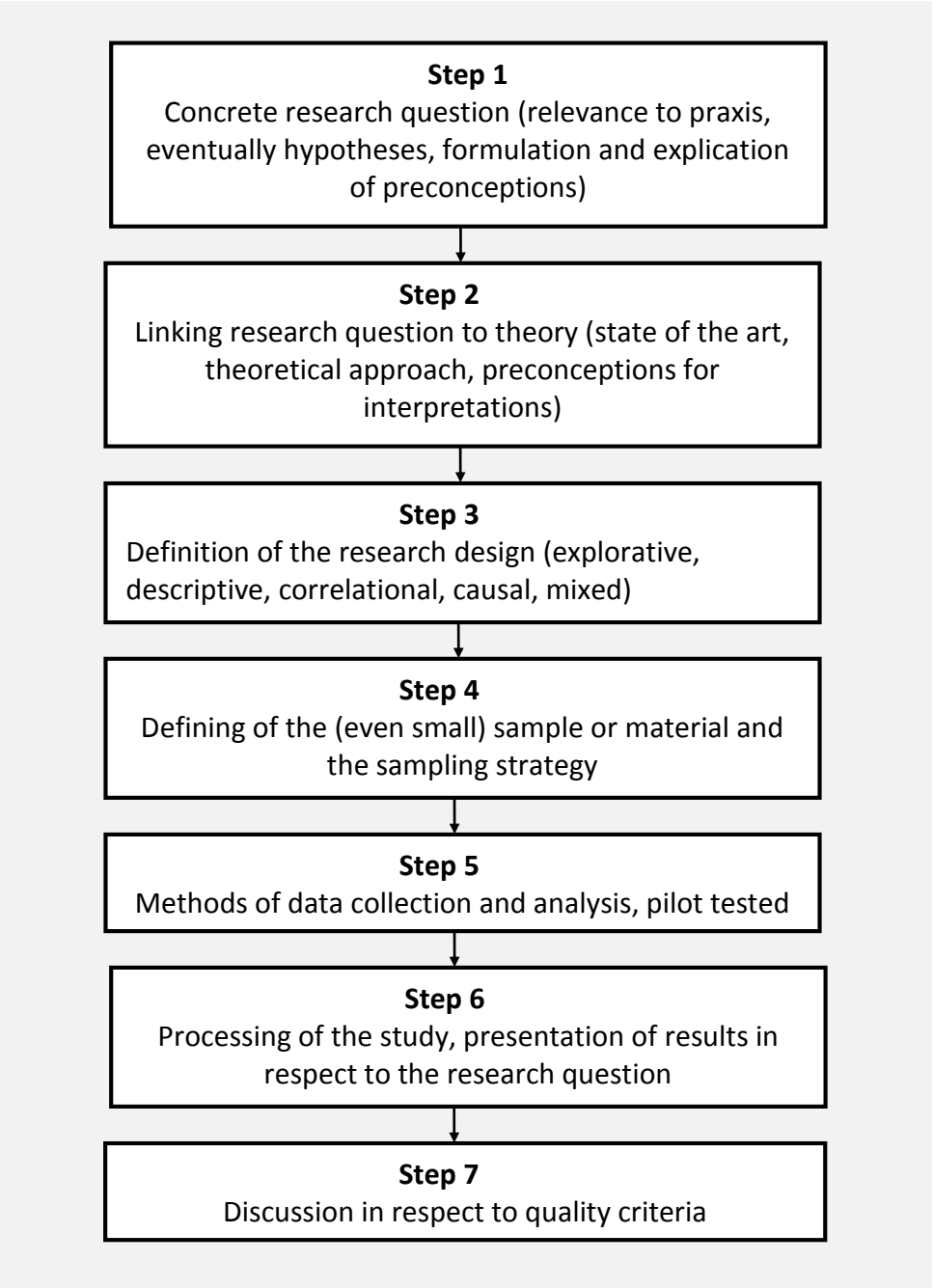


Figure 1: Step-by-step model for the research process

Such a step-by-step model can be a point of reference for quantitative, qualitative and of course for mixed methods research. And in this way perhaps the unfruitful “science war” in social science methodology can be overcome.

2. Overview on Approaches to Text Analysis in Social Sciences

We have just mentioned that working with Qualitative Content Analysis needs an argumentation in respect of its adequateness. For this reason it is useful to look at alternative text analysis procedures in social sciences. Perhaps we can differentiate between three traditions that modern text analysis techniques are coming from:

For hermeneutic approaches, coming from a background of humanities ("Geisteswissenschaften") background, the text has to be interpreted by the formulation of the own preconceptions (hermeneutical circle); the intensions of the text author have to be found out and an additional explaining text has to be formulated. The tradition originates from theology (interpretation of bible texts) and jurisprudence (interpretation of law texts). In the figure below (Fig. 1) we have listed six modern hermeneutical approaches:

- Objective hermeneutics has been developed in Germany by sociologist Klaus Oevermann (Reichertz, 2000) with the aim of drawing inferences to objective social structures behind the text. An elaborated technique of sequence analysis has been formulated even if the interpreter has broad degrees of freedom in his interpretation (interpretation as art).
- Grounded Theory (Corbin & Strauss, 1998) describes a procedure of coding textual materials (e.g. a more inductive open coding process and a more deductive axial coding process) and defining the codes with memos. The aim is to come to a concrete theoretical model by means of an explorative process.
- Psychoanalytical text interpretation (Koenig, 2004) was developed to draw inferences from the text to a deep structure of defended contents. By logical analysis, fractures or inconsistencies in the text are discovered which can be a sign for a defense mechanism in the author.
- Phenomenological analysis has been developed in psychology (Giorgi, 2009) originating from philosophy (Husserl, Heidegger). The phenomenon is analyzed through variation and reduced to its core concept.
- Biographical analysis (Miller, 2005) interprets open-ended textual materials on individual life courses. If those approaches analyze the formal structure of the biographical text as narration (narrative structure), they take in linguistic consideration, which is expressed in figure 2 by a link.

Linguistic considerations have inspired several approaches especially within cultural studies under the label of the Discourse Analysis (Gee & Handford, 2013). Usually, the first step of those approaches follows a linguistic criterion (in metaphor analysis the identification of metaphors in the text, in conversational analysis the reconstruction of the interaction process) and then interprets the result in a more hermeneutical way. Discourse Analysis in a narrower sense embeds the textual material in the discursive situation in which it is located. Text mining procedures include more explorative strategies of quantitative text analysis, which sometimes includes content-analytical procedures.

Content Analysis (cf. chapter 3.1) has been developed within communication science to analyze huge textual corpuses (e.g. newspapers) in a first quantitative way. There are connections to linguistics (text mining). In the second half of the 20th century qualitative approaches, like ours, have been formulated.

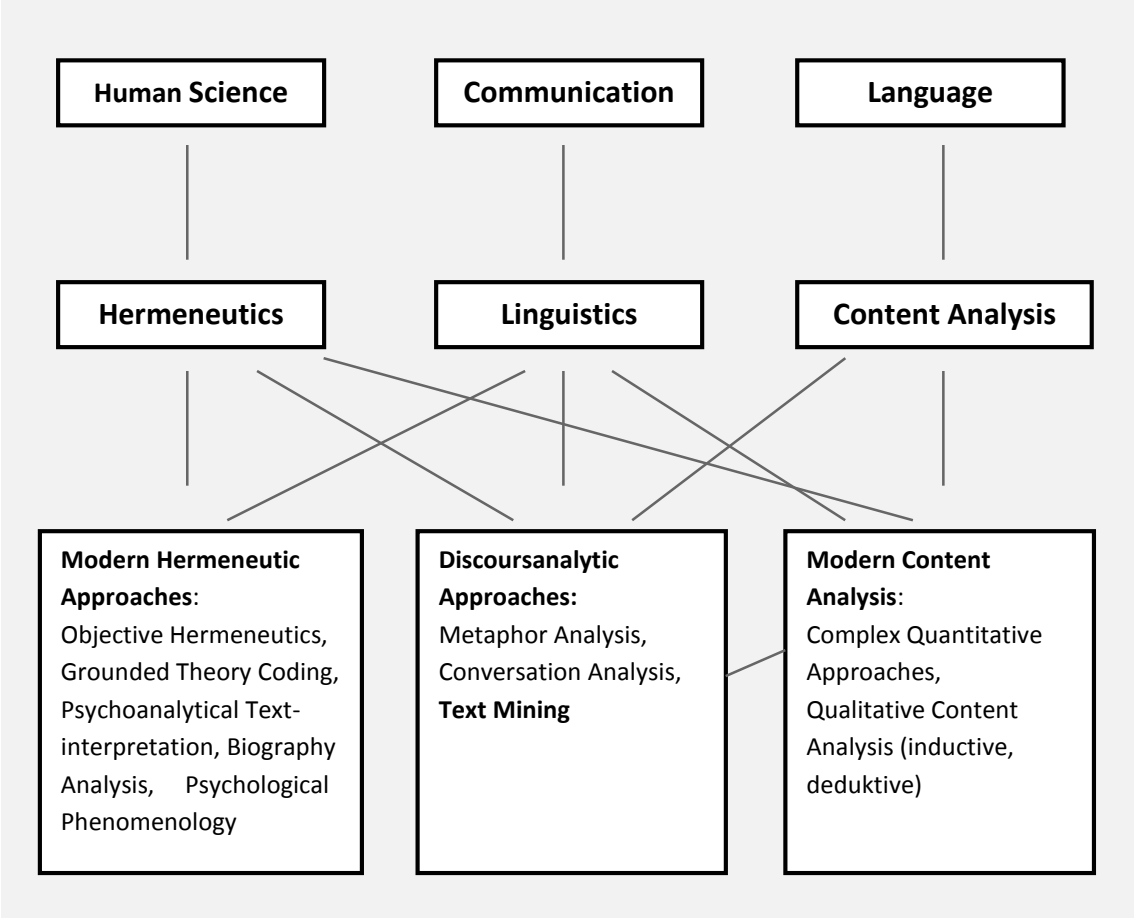


Figure 2: Approaches to Social Science Text Analysis

Working with one of those text analytical procedures does not mean that the scientist has to come from the underlying discipline, but we have to take into account the background. Like in quantitative data analysis, we have to choose the adequate statistical operation, we have to determine the preferred text analysis technique within qualitative approaches and to give arguments for this decision.

The advantages and limitations of Qualitative Content Analysis are discussed in chapter 9.

3. Theoretical Background for a Qualitative Content Analysis

The theoretical foundation for the development of procedures for a qualitative content analysis can be found in different areas:

3.1 Communication Science: Quantitative Content Analysis

It is possible to distinguish between three phases in the development of content-analytical techniques and approaches (cf. on this point Berelson, 1952; Merten, 1983; Franzosi, 2004):

3.1.1 Preliminary Phase

Content analysis certainly has a relatively short history, but it may as well have a long past. For attempts to analyse communication material systematically can be traced back through the centuries. In the 7th century, for instance, word-frequency analyses of Old Testament texts were carried out (Yule, 1944). During the doctrinal controversy between Lutherans and Pietists in the 18th century their texts were subjected to a comparative content analysis. It was shown that certain key concepts (God, Kingdom of Heaven) occurred with the same frequency and that therefore no fundamental deviation from orthodoxy on the part of the Pietists could be proven (cf. Dovring, 1954).
Around the turn to the 20th century we find less quantitative approaches in the analysis of language material as well, like the dream analyses of Sigmund Freud.
The first systematic newspaper analysis, one of the main fields of early content analysis, dates from as early as 1893 (Speed, 1893). Here the news articles were assigned to certain thematic categories and compared across different papers (Tribune, World, Times, Sun).

Table 2: Newspaper analysis of Speed, 1893 (Merten, 1983, p.36)

Subject	Tribune 1881	Tribune 1893	World 1881	World 1893	Times 1881	Times 1893	Sun 1881	Sun 1893
Editorial	5.00	5.00	4.75	4.00	6.00	5.00	4.00	4.00
Religious	2.00	0.00	0.75	0.00	1.00	0.00	0.50	1.00
Scientific	1.00	0.75	0.00	2.00	1.00	0.00	0.00	2.50
Political	3.00	3.75	0.00	10.50	1.00	4.00	1.00	3.50
Literary	15.00	5.00	1.00	2.00	18.00	12.00	5.75	6.00
Gossip	1.00	23.00	1.00	63.50	.50	16.75	2.00	13.00
Scandals	0.00	1.50	0.00	1.50	1.00	2.50	0.00	2.00
Sporting	1.00	6.50	2.50	16.00	3.00	10.00	0.50	17.50
Fiction	0.00	7.00	1.50	6.50	1.00	1.50	0.00	11.50
Historical	2.50	2.50	2.75	4.00	2.50	1.50	4.25	14.00
Music and Drama	2.50	4.00	1.50	11.00	4.00	7.00	0.00	3.50
Crimes and Criminals	0.00	0.50	0.00	6.00	0.00	1.00	0.00	0.00
Art	1.00	1.00	3.00	3.00	2.00	0.00	0.25	1.25

The illustration shows an index (deviation from average according to article and photo sizes) for the treatment of individual topics in the four newspapers, compared on two randomly selected publication dates. It demonstrates that religious, scientific and literary topics are losing ground, whereas gossip, scandal and crime are increasing.

3.1.2 Consolidation Phase

On the basis of such studies, content analysis consolidated itself into a standard instrument of empirical social research. In the initial decades of the last century, content analysis was developed first of all in publishing and journalism as a systematic method of analyzing news articles. A decisive contribution was made in this respect by the Columbia University School of Journalism (cf. Willey, 1926). In the late thirties the method received great impetus. Responsible for this were the following factors:

- Mass media such as radio and newspapers were becoming increasingly important. Analyzing them was part of the attempt to discover “public opinion”. It was in this connection that the Bureau of Applied Social Research at Columbia University was set up under the chairmanship of Paul F. Lazarsfeld.
- During Second World War the Experimental Division for the Study of Wartime Communications had been instituted by Congress to assess precision propaganda under the chairmanship of Harold D. Lasswell.
- The Department of Justice commissioned content analyses for domestic intelligence purposes.
- Commercial contractors (e.g. the press, General Motors) also discovered that it was a method they could use.

Against this background the first monograph was written on content analysis by Berelson (1952), who developed it as an objective, systematic and quantitative analysis of the manifest content of communication.

3.1.3 Fine Developments and Interdisciplinary Expansion

Following this development, content analysis was also taken up by other disciplines (e.g. psychology, sociology, educational science, historical science, fine arts studies). The method received new impetus through the conference on content analysis held by the Committee on Linguistics and Psychology of the Social Sciences Research Council in 1955 at Allerton House, University of Illinois, Monticello (Allerton House Conference) (cf. Pool, 1959). It was established on this occasion that:

- not only the summarizing of verbal material (description) was important, but also the conclusion (inference) to be drawn from the material on the circumstances of its origin and effects;
- in the material not only symbol frequencies but also symbol connections are measurable (contingency analyses);
- qualitative procedures can also be useful: A. L. George criticized quantitative content analysis and demanded that it be complemented by a "non-frequency approach" (cf. George, 1959);

- the problem of the meaning of symbols must also be discussed; one cannot simply start from the lexical meaning of terms but should also take into account their context, their circumstances of origin and the intentions behind them (cf. Mahl, 1959).

A good ten years later the second important conference on content analysis was held at the University of Pennsylvania´s Annenberg School of Communication in Philadelphia (Annenberg School Conference of 1966). The most important further developments here were as follows (cf. Gerbner, Holsti, Krippendorff, Paisley & Stone, 1969):

- an attempt was made to analyze the analytical procedure itself more precisely (the "content-analytical situation", cf. Krippendorff 1969a).
- the demand was made that the theoretical model of communication on which the analysis is founded (cf. Ch. 4.4) should be explained (Krippendorff 1969b).
- compromise positions emerged in the controversy between qualitative and quantitative analysis (Holsti and Gerbner in Gerbner et al., 1969).
- quantification techniques were made more accurate. Extensive computer programs were developed (cf. Gerbner et al. 1969, Part IV).

3.1.4 The Present-day Situation: “Discontent” Analysis?

Discussion of content analysis as an instrument of the communication theory did not essentially pass beyond this point (cf. Krippendorff, 1980). The method was also applied outside the United States (cf. e.g. Lagerberg, 1975, d'Unrug, 1974). It was used in Germany, for instance, from the end of the 1950s onwards (cf. Silbermann, 1967; Rust, 1981; Merten, 1983). Quantitatively oriented content analysis became the standard instrument of the empirical communication science.

However, one can say that at this point the methodology discussion has reached a point of stagnation. An increasing number of critical voices described the technique as inadequate and unable to fulfil requirements. The joke about “discontent analysis” was to be heard with increasing frequency. Koch, Witte & Witte (1974), for example, tested six fairly recent journalistic content analyses from German-speaking countries according to customary standards of quality. In their opinion content analysis gets a bad report: “If conclusions are drawn on the basis of the work reviewed here, then it must be stated that up to now no one has succeeded in developing a handy instrument for describing and analyzing news publications with the help of content analysis” (Koch, Witte & Witte, 1974, p. 83, translation P.M.).

Manfred Ruehl also denied that content analysis has a chance of achieving “social-scientific status capable of gaining general acceptability” (Ruehl, 1976, p.377). It achieves only superficial polish through quantitative techniques, and has pushed the problem of sense and meaning to one side, he argues. “The results of content analysis remain highly pseudo- and parascientific, as long as content analysts do not know how to equip their scientific criteria better for methodological testing” (Ruehl, 1976, p. 376/377).

The fact, that the quantification approach and orientation to manifest content tends to sidestep the problem of what language symbols actually mean, was reason enough, also for Ingunde Fuehlau, to declare that content analysis is a failure. “This is why content analysis, if pursued strictly according to its own tenets, must inevitably lead to distorted results. If the method was stringently applied - which actually is almost never really the case - it must either produce irrelevant descriptions of the

subject - albeit in a very ‘objective manner’ - or on the other hand meaningful descriptions of communication content, to which, however, if judged according to its own criteria, it can only assign a highly subjective value. In either case, therefore, it fails as a method” (Fuehlau, 1978, p. 15/16, cf. also Fuehlau, 1982).

Certainly, communication sciences have made positive attempts to overcome the shortcomings of the classical content analysis. Hitherto, however, these have remained on the level of theoretical programmes and have been unable to suggest concrete techniques (e.g. Kracauer, 1972). One thrust in this direction is Holger Rust’s conception of qualitative content analysis (Rust 1980a, 1980b, 1981). He conceives of qualitative content analysis as a qualification, as “classifying and determining the contours of the object under examination within its context, delineating it relative to other objects and generally characterizing its inner consistency” (Rust 1981, p. 196). In other words, it includes everything for which any form of quantification prepares the groundwork. Qualitative content analysis must take the structure and meaning of the material to be analyzed (i.e. the text) as its starting point. The construction of a text, according to Rust, is therefore the basis of the method.

1. Any text entails the stylizing of information.
2. In stylizing certain information the text gives relevance to certain meaning relationships.
3. Through this semantic units are built up, the size of which must be determined and varied in order to disclose inner principles of construction and external relations.
4. The subordinate units of text are marked and delineated.
5. The relationship of the subordinate units to other areas of content or the behavior behind it is characterized.
6. These relationships can be expressed through certain patterns, which can vary in size.
7. The divisions between subordinate semantic units can be overcome again on the basis of the particular cultural background involved.
8. For the recipient certain subordinated semantic fields are recognizable as stylizations of his or her everyday life (cf. Rust, 1980a, p. 12/23).

“Qualitative analysis therefore pursues a double strategy: it forces the object of analysis to reveal its structure in a de-totalizing approach which inquires into the relationship between individual aspects and general appearance, but does this with the aim of achieving a conscious re-totalization, so as not to lose sight of the overall social core content of every statement” (Rust 1980a, p. 21). Rust himself calls this a theoretical outline, and admits that concrete procedures are missing entirely (Rust, 1981, p. 201). This is characteristic of the situation in which qualitative content analysis finds itself.
Other approaches had been developed in the area of content analysis, like codebook analysis (Neuendorf, 2002). Here a non-automatically, manual (interpretative?) coding is used, following a codebook with explicit code definitions and sometimes examples. It seems to be similar to deductive category assignment (cf. chapter 6.5), but in codebooks it is not described and worked out systematically and theoretically founded (cf. chapter 9 for further content analytical approaches).

3.1.5 Basic Techniques of Quantitative Content Analyses

It is **frequency analyses** and techniques derived from them that should be mentioned primarily here. The simplest method of a content-analytical procedure is to count certain elements in the material and compare them in their frequency with the occurrence of other elements. Here is a simple example: In 1946 B. Berleson and P. Salter (Berelson, 1952) carried out an inquiry into the ethnic origins of the main figures in American magazine stories, comparing the percentage distribution with the actual ethnic distribution in American society:

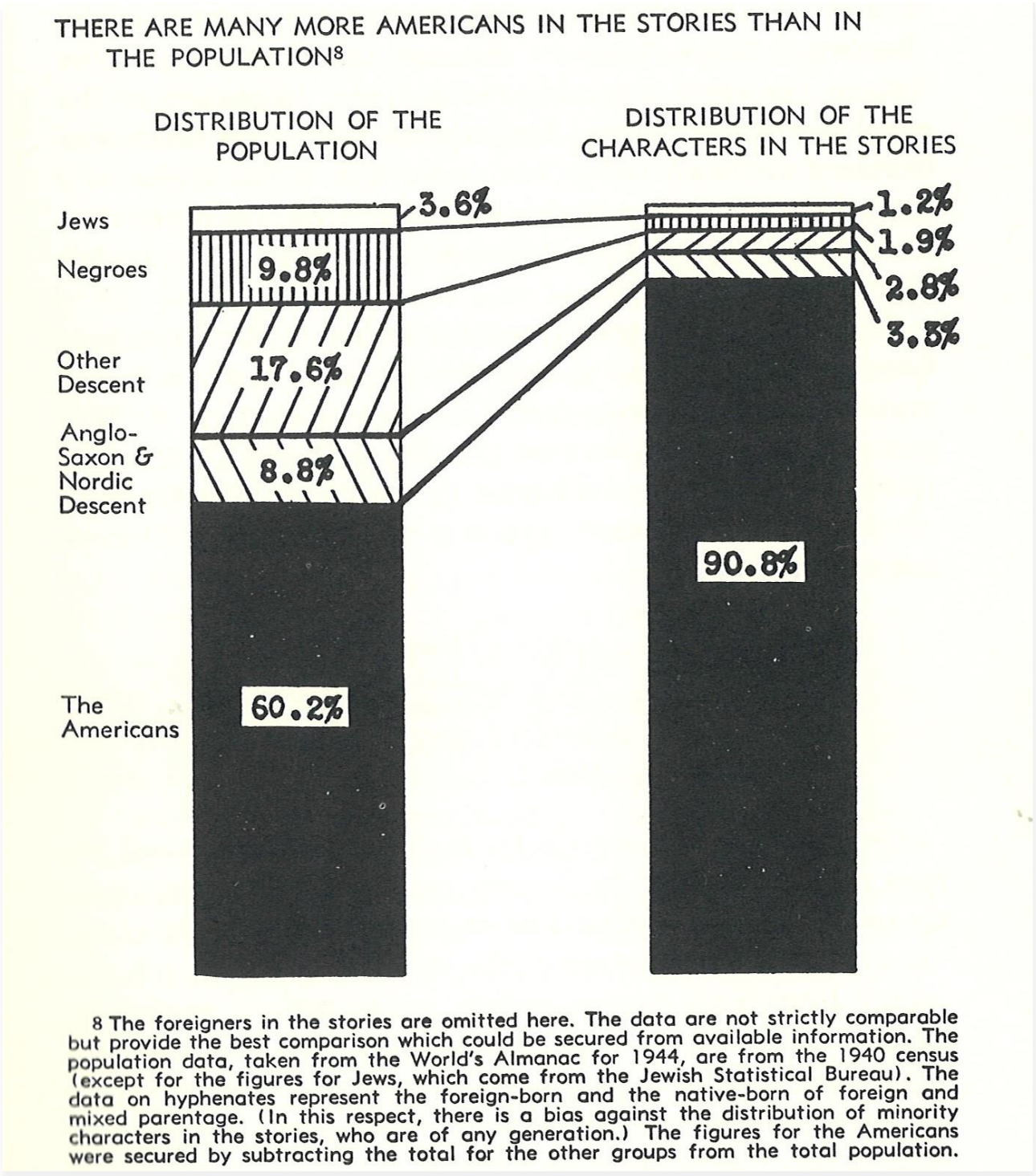


Figure 3: Content Analysis "American Majorities and Minorities" from Berelson 1952, p. 51

Of special importance here is the use of comprehensive category systems (so-called "dictionaries"), which are supposed to include all aspects of a text and form the basis for a computer count of language material. The General Inquirer (Stone, Dunphy, Smith and Ogilvie, 1966) seems to have been the first attempt in this direction. Dictionaries now exist, for instance, for psychologically relevant issues (e.g. Harvard Psychological Dictionary), the latest editions of which can be conveniently used on a PC (cf. Weber, 1990; http://www.wjh.harvard.edu/~inquirer/). Figure 4 shows the encoding of two sentences from speeches of candidates for the US Presidency in 1980 (left-hand column) and the categories assigned on a word-for-word basis (right-hand column).

Table 3: Computer-aided quantitative content analysis of two sentences with Harvard IV Psychological Dictionary; Weber, 1990, p. 33

```
   Word             Categories
SENTENCE7**DOCUMENT1**IDENTIFICATION AD1980
   THE              ARTICLE
   EFFECT#1         ABSTRACT CAUSAL PSV
   ON               SPACE
   OUR              AFFILIATION OUR
   ECONOMY          DOCTRINE ECONOMIC
   MUST#1           OUGHT
   BE#1             BE
   ONE#2            INDEF OTHER
   WHICH            INDEF INT RLTV1
   ENCOURAGE#1S     INTERRELATEL AFFILIATION PSTV ACTV
   JOB              MEANS ECONOMIC
   FORMATION        MEANS STRNG
   AND              CONJ1
   BUSINESS#1       DOCTRINE ECONOMIC
   GROWTH           STRNG INCR PSV
***START NEWX DOCUMENT..
SENTENCE8**DOCUMENT2**IDENTIFICATION AR1980
   TAX#1ES          MEANS POLIT ECONOMIC
SENTENCE9**DOCUMENT2**IDENTIFICATION AR1980
   ELSEWHERE        SPACE
   IN               SPACE
   THIS#1           DEM DEM1
   PLATFORM#1       DOCTRINE POLITICAL
   WE               PLRLP OUR
   DISCUSS          PSTV COMFORM
   THE              ARTICLE
   BENEFIT#35       GOAL PSTV STRNG
   FOR              CONJ CONJ2
   SOCIETY          COLL POLITICAL
   AS#1             CONJ2 CAUSAL
   A                ARTICLE
   WHOLE#2          QUAN STRNG OVRST
   OF               PREP
   REDUCED          DECR STRNG
   TAXTATION,       MEANS POLIT ECONOMIC
   PARTICULAR#4LY OVRST
   IN               SPACE
   TERM#1S          COM COMFORM
   OF               PREP
   ECONOMIC         POLIT DOCTRINE ECONOMIC
   GROWTH.          STRNG INCR PSV
```

On this basis frequencies are computed and analyzed statistically. Of course the dictionary must also be able to recognize different grammatical forms of a word within the context of a sentence. This, however, can cause problems:

- multiplicity of meaning (e.g. "madly" in the colloquial meaning, say, of "very"; or "madly" as pertaining to psychological disturbance);
- the nuances and connotations conferred on terms by the context;
- contextual modification of meaning (for instance in the case of "no anxiety", "little anxiety" and "a lot of anxiety", "anxiety" will be counted once in each case);
- the contextual relationship of the term counted (e.g. with "I am afraid of X" or "X is afraid of me", "afraid" is counted once in each case);
- the problem of pro-forms (e.g. with "I didn't notice any of that" the computer does not know what "of that" refers to);
- dialect expressions (which occur in interview scripts regularly) need a great deal of re-working.

And several more problems could be added to the list. Attempts have in fact been made to check and control contextual influences of this kind (KWIC Keyword-in-Context-Program, cf. Weber, 1990). For this purpose a list of the points of appearance of a category, that is, the category in its different contexts is drawn up for each concept or term counted. Figure 5 shows a section from it on the category "rights" in the above-mentioned example (speeches of candidates for US presidency).

Table 4: Key-word-in-context list for the category ‘rights’; Weber, 1990, p. 45

1980 Reagen Republican Platform

YOUNG PEOPLE WANT THE OPPORTUNITY TO EXERCISE THE	RIGHTS AND RESPONSIBILITIES OF ADULTS. THE REPUBLICAN PA	AR 1980	372
ACTERIZED BY THE HIGHEST REGARD FOR PROTECTING THE	RIGHTS OF LAW-ABIDING CITIZENS, AND IS CONSISTENT WITH T	AR 1980	1004
OF THEIR SCHOOL SYSTEMS. WE WILL RESPECT THE	RIGHTS OF STATE AND LOCAL AUTHORITIES IN THE MANAGEMENT	AR 1980	333
RIGHTS AND THE HELSINKI AGREEMENTS WHICH GUARANTEE	RIGHTS SUCH AS THE FREE INTERCHANGE OF INFORMATION AND T	AR 1980	1391
UALLY AND STEADFASILY COMMITTED TO THE EQUALITY OF	RIGHTS FOR ALL CITIZENS, REGARDLESS OF RACE. AS THE PART	AR 1980	206
S ISSUES, IS ULTIMATELY CONCERNED WITH EQUALITY OF	RIGHTS UNDER THE LAW. THERE CAN BE NO DOUBT THAT THE QUE	AR 1980	284
SE WHO SUPPORT OR OPPOSE RATIFICATION OF THE EQUAL	RIGHTS AMENDMENT. WE ACKNOWLEDGE THE LEGITIMATE EFFORTS	AR 1980	227
SSION ARE IN THE COURTS. RATIFICATION OF THE EQUAL	RIGHTS AMENDMENT IS NOW IN THE HANDS OF STATE LEGISLATUR	AR 1980	232
REAFFIRM OUR PARY’S HISTORIC COMMITMENT TO EQUAL	RIGHTS AND EQUALITY FOR WOMEN. WE	AR 1980	228
XEMPTION FROM THE MILITARY DRAFT. WE SUPPORT EQUAL	RIGHTS AND EQUAL OPPORTUNITIES FOR WOMEN, WITHOUT TAKING	AR 1980	229
ON POLICY MUST BE BASED ON THE PRIMACY OF PARENTAL	RIGHTS AND RESPONSIBILITY.	AR 1980	322
N’S COMMITMENT TO DEFENT THEM. INDIVIDUAL	FEDERAL EDUCATI RIGHTS AND SOCIETAL VALUES ARE	AR 1980	152
MULTIRACIAL SOCIETY WITH GUARANTEES OF INDIVIDUAL	ONLY AS STRONG AS A NATIO RIGHTS IS POSSIBLE AND CAN WORK.	AR 1980	1557
VE ECONOMIC SECURITY. HISPANICS SEEK ONLY THE FULL	REPUBLICANS BELIEVE THA RIGHTS OF CITIZENSHIP -- IN	AR 1980	213
UNITIES FOR WOMEN, WITHOUT TAKING AWAY TRADITIONAL	EDUCATION, IN LAW ENFORCEMEN RIGHTS OF WOMEN SUCH AS	AR 1980	229
ING STRONG, EFFECTIVE ENFORGEMENT OF FEDERAL CIVIL	EXEMPTION FROM THE MILITARY DRAF RIGHTS STATUTES,	AR 1980	209
CARE IS DEREGULATION AND AN EMPHASIS UPON CONSUMER	ESPECIALLY THOSE DE DURING THE NEXT FOU RIGHTS AND PATIENT	AR 1980	350
IMPLEMENT THE UNITED NATIONS DEGLARATION ON HUMAN	CHOICE. THE PRESCRIPTION FOR GOOD HEA RIGHTS AND THE	AR 1980	1391
THEIR EMIGRATION IS A FUNDAMENTAL AFFRONT TO HUMAN	HELSINKI AGREEMENTS WHICH GUARANTEE RIGHT RIGHTS AND THE	AR 1980	1394
BEEN DURING THE CARTER ADMINISTRATION. HUMAN	U.N THE DECLINE IN EXIT VISAS TO SOVIET J RIGHTS IN THE	AR 1980	1398
N’S RHETORIC. THE MOST FLAGRANT OFFENDERS OF HUMAN	SOVIET UNION WILL NO BE IGNORED AS IT HAS RIGHTS INCLUDING	AR 1980	1072
NS LINKED TO IST UNDIFFERENTIATES CHARGES OF HUMAN	THE SOVIET UNION, VIETNAM, AND CUBA HAV RIGHTS VIOLATIONS. YET, THE CARTER ADMINISTRATION’S POLI	AR 1980	1473

This, however, only makes it possible to recognize the problem, not to remove it. In any case, lists such as this are difficult to process with large quantities of text.

The basic procedure for such frequency analyses, also regarded as a model for more complex analyses, is as follows:

- formulation of issue or problem;
- determination of the material sample;
- establishment of a category system (dependent upon the issue concerned), i.e. determination of which text elements are to be checked for frequency;
- definition of the categories, possibly with examples;
- determination of analysis units, i.e. decision as to
    - what the minimum component of text is that can fall under the heading of a category (recording unit),
    - what the maximum text component is (context unit) and
    - the sequence in which text components are to be encoded (unit of classification); such components can be syllables, words, sentences, paragraphs, etc.;
- coding, i.e. working through the material with the help of the category system in order to record the occurrence of categories;
- computation, i.e. establishing and comparing frequencies;
- description and interpretation of the results.

One example of a more complex frequency analysis is the Gottschalk-Gleser Speech Content Analysis for the measurement of affective states (anxiety, aggression) (Gottschalk & Gleser, 1969), which has also been adapted for the German language (Schoefer, 1980).

The next group of established quantitative techniques to be mentioned are **valence and intensity analyses**. Generally speaking these are content-analytical procedures which accord a value to certain textual components on an assessment scale of two or more gradations. The general procedure can be described as follows:

- formulation of issue or problem;
- determination of the material sample;
- establishment and definition of the variables to be examined;
- determination of the scale values (features per variable), with valence analyses bipolar (e.g. plus - minus), with intensity analyses multi-graded (e.g. very strong - strong - medium - less strong - null);
- definition and possible addition of examples for the scale values of the variables (variables and scale values together constitute the category system of these analysis types);
- determination of analysis units (recording unit, context unit, unit of classification);
- coding, i.e. scaling of the assessment units according to the category system;
- computation, i.e. establishment and comparison of frequencies of scaled assessments, possibly further statistical processing;
- description and interpretation of the results.

Valence and intensity analyses may be constructed very simply, e.g. when the leader articles of several daily newspapers are compared with regard to how far they support the policies of the

governing party or those of the opposition. Three examples of more complex forms can be mentioned here: the symbol analysis, the evaluative assertion analysis (Osgood, Saporta & Nunally, 1956) and the value analysis (White, 1944).

This brings us to the third group of tested techniques of content analysis: **contingency analyses**. The development of such techniques goes back mostly to Charles Osgood (Osgood, 1959). The objective here is to establish whether particular text elements (e.g. central concepts) occur with particular frequency in the same context, whether they are connected with one another in any way in the text, i.e. whether they are contingent. The intention is that by discovering many such contingencies one may extract from the material a structure of text elements associated with one another. Quite generally the procedure can be defined as follows:

- formulation of the issue;
- determination of the material sample;
- establishment and definition of the text components whose contingency is to be examined (i.e. drawing up of a category system);
- determining the units of analysis (recording unit, context unit, unit of classification);
- definition of contingency, i.e. establishing rules as to what counts as a contingency;
- coding, i.e. working through the material with the aid of the category system;
- examination of common occurrence of the categories, establishment of the contingencies;
- collation and interpretation of the contingencies.

Examples of this are the classical contingency analysis of Osgood's (1959), discourse analysis (Harris, 1952), semantic field analysis (Weymann, 1973) and the association structure analysis (Lisch, 1979).

3.2 Human Sciences: Hermeneutics

Hermeneutical approaches generally are an important source for the development of the qualitative research methodology. In some respect the Qualitative Content Analysis as well refers to it.

Hermeneutical approaches have the longest tradition of text analysis (cf. Bruns, 1992). In Greek mythology the messenger of the gods was Hermes; his duty was to translate, to interpret, to communicate the intentions of Zeus, which is the basic idea of hermeneutics. The later fields of hermeneutics were theology, jurisdiction, history and philology. In those cases the aim is to give interpretations of central texts (bible, laws, historical documents, literature), to comment those texts, always in the sense of understanding the real intentions of the text authors.

Several philosophers have outlined the central procedures of hermeneutical text understanding. Mathias Flacius Illyricus (1520-1575), theologist, a scholar of Martin Luther and Philipp Melanchton, elaborated the idea of understanding single text passages on the background of the overall text and its context. Friedrich Schleiermacher (1768-1834), philosopher, defined hermeneutics as the understanding of meaningful reality (not only texts) as an art ("Kunstlehre") more than a formal method. Friedrich Ast (1778-1841), classical philologist, formulated the hermeneutical circle as central procedure of text understanding. That means that the interpreter has to formulate his or her preconception, preknowledge ("Vorverstaendnis") of the topics of the text. Then he or she reads the text and modifies the preconceptions. (In some respect this procedure has similarities with hypotheses guidedness of quantitative research.) Later on the term "hermeneutical spiral" was preferred, because the interaction between preconceptions and text interpretations show a dialectical development and not only a circle. Figure 4 visualizes this spiral process:

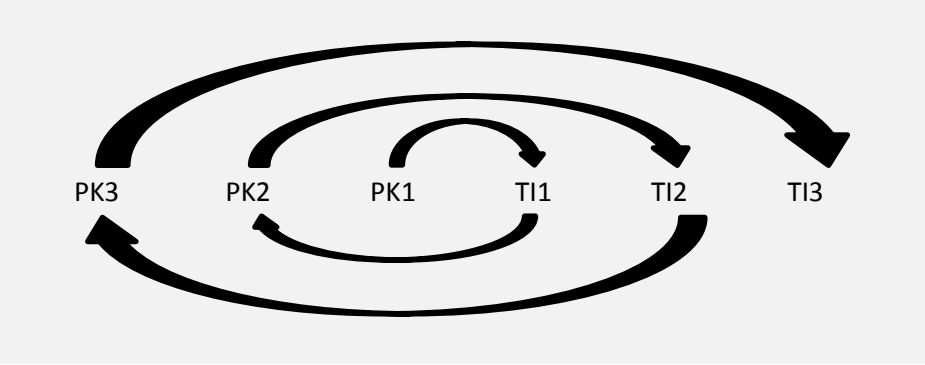


Figure 4: The hermeneutical spiral (cf. Danner, 1979) (PK: preknowledge; TI: Text interpretation)

Wilhelm Dilthey (1833-1911) defined hermeneutics as an artistic method of understanding ("Kunstlehre des Verstehens") and conceptualized it as the basis for human sciences like mathematics are the basis for natural sciences. But he did not formulate a dichotomy: On the fundament of more descriptive hermeneutical understanding a second step of scientific explanations and correlations can be conducted. That seems to be a very modern concept, nowadays discussed under the approach of mixed methods.

In the meantime several researchers elaborated the concept of hermeneutics (e.g. Heidegger, Gadamer, Betti, Habermas). Coreth (1969) is outlining on this background four central ideas of the hermeneutical process of understanding:

- Horizon structure: specific text passages can only be understood on the basis of the whole text and its context as background.
- Circle structure: texts can only be understood as relation between preknowledge and preconceptions of the interpreter and the text itself.
- Dialog structure: text understanding is embedded in an interaction process between text author and text interpreter.
- Subject-object structure: In the text real life objects are mentioned and again there is an interaction process between the subjects involved (author, interpreter, audiences) and those text objects.

In the previous chapter we just mentioned that nowadays there are several approaches of text analysis on an explicit hermeneutical background (e.g. Objective Hermeneutics). What does this mean for Qualitative Content Analysis?

We would say that the hermeneutical approach to text analysis is important. It reminds us that text understanding is not an automatic process of counting manifest text elements (like in Quantitative Content Analysis). On the other hand qualitative Content Analysis includes systematic quantitative steps of analysis. I like to demonstrate the hermeneutical elements within Qualitative Content Analysis with an example from our work (Mayring, 2002b):

This example comes from a study on psycho-social consequences of unemployment (Mayring, Koenig, Hurst & Birk, 2000). Fifty teachers becoming unemployed in consequence of the German unification after 1990 took part in open-ended interviews. The material was transcribed and analyzed by qualitative content analysis. One step of analysis was to apply categories in a deductive way to the text. So we tried to appraise the degree of stress of the interviewed persons, working with three deductive categories: no stress, little stress and high stress.

The Coding Agenda contained definitions and coding rules like the ones listened in figure 5:

Category	Definitions	Coding Rules
no stress	no negative aspects; only subjective unimportant stresses whole situation positive	coping efforts not necessary
little stress	single negative factors for the subject; pos. and negative aspects in the situation	coping possibilities seem to be clear
high stress	overall negative situation; some severe bad aspects, depressed, insecure	no coping possibilities are seen

Figure 5: Part of the coding guideline for stress categories

The purpose of those content-analytical rules is to make the process of category application as controlled as possible. Let us now look at one of the interviews:

CASE X

I: Is it a stressing situation for you now?

A: ...(reflecting) ... Well, that's a difficult question. Until now, I have to say, I'm not through with this, because it had been so disappointing. You got your next job, you had to fight for it, and now I'm employed for a probationary period at the youth hostel, I hope to get the job in June, and to bring in my experiences as teacher, I think it's a big challenge.
.... But sometimes I'm feeling depressed, for example if you don't know how to manage a situation in the new job. But I hope things will come to a good end.

After the first sentence of the answer we think the teacher is highly stressed, because he is troubled with the situation, the situation is unclear, is disappointing. In the next sentence he tells us, that he has managed the situation perfectly. He speaks about a new challenging job, about hope. No unemployment stress would be the right coding. But then he tells us something about feelings of depression and the impossibility to cope with the situation, a sign for a high stress coding. A clear decision, what category would be adequate is only possible on the background of the whole interview and is not an automatic process of coding rule application.

A second text example from another interview out of this study may underline this point:

CASE Y

I: Well how is the situation at the moment, is it stressing?
B: Yes, well I think that one is not able to cope with this, that they simply push you aside.
I: And what is the central problem for you?
B: Well, the injustice. That they took things into account for their decision, which are not right.
I: Are there any positive aspects in your situation now?
B: Well, I would say, I'm not bad in my new job selling contracts for the building society, I got used to it very well, I'm one of the best. That's always with me, to be better than the others. But, well, it's a job I haven't chosen by myself. And if you are looking at the employed teachers, this is hard. But on the other hand I'm glad that I don't have to work in this educational system any more.

Here again the decision for a category swings from sentence to sentence. He shows us a hopeless situation with no possibilities to cope. But he as well has found a new job and is very motivated in it. Perhaps as a form of defense he tells us that he is glad to be out of his former teacher job. Here we understand that we need to have background material to understand his situation (development of the educational system after the German reunion). Again we don't see a simple automatic coding process. Even if the coding agenda is more elaborated, containing further coding rules and text examples for clarification, the coding remains a complex act of interpretation.

On this background we try to discuss the role of a researcher within the content-analytical work. The two poles of orientation are:

- being only part of the research instrument, applying content-analytical rules in a mechanical, automatic way, trying to be constant, observable, intersubjectively understandable and able to be checked by inter coder reliability tests;
- or being a free interpreter of the material, having content-analytical steps and rules only as orientation, establishing a subjective relation to the material.

We tried to argue that qualitative content analysis remains interpretation. The central step of relying categories and parts of the text material is not an automatic technique but a reflective act of interpreting meanings in the text. So the procedures of quantitative (e.g. computerized) content analysis are fundamentally different. The content analyst has to put all his competencies, pre-knowledge and empathic abilities into the process of analysis. But he has to do this within the framework of content-analytical rules.

Link to QCAmap software (www.qcamap.org):

Coding the texts remains a decision process of the researcher. In one part of the screen the textual material is presented, relevant text passages have to be marked with the cursor and related to categories. On the same screen all relevant content-analytical rules are displayed to support the decision. The text can be scrolled to have an overall impression of the material in respect to the category. The codings can be changed if the researcher revises his or her decisions.

3.3 Linguistics: The Structure of Language and Text

If we try to develop procedures of text analysis, we have to understand what text is and what language is. The scientific discipline covering this area is linguistics (Akmajian, Demers, Farmer & Harnish, 2010; Schulte-Sasse & Werner, 1977). And indeed we have just mentioned some text analysis procedures, which are based directly on linguistic concepts (metaphor analysis, conversation analysis, discourse analysis, see chapter 2).

Semiotics, as a part of linguistics, is defined as the analysis "of the exchange of meanings of acting or communicating individuals" (Schulte-Sasse & Werner, 1977, p. 49, transl. P.M.), and this is very relevant for the text analysis. Semiotics differentiates between

- the used language signs,
- the people using those signs,
- the objects to which the signs are related,
- the ideas of the objects in the mind of the users.

So text analysis can follow very different questions:

- How is the text constructed out of different signs (*syntactics*)?
- What are the meanings of the signs, how could they be interpreted (*semantics*)?
- What is the relation between signs and users (*pragmatics*)?
- What is the relation between signs and objects (*sigmatics*)?

In chapter 3.1 we have defined content analysis as a systematic procedure of assignment of categories to portions of text. The question which now occurs is: what could be text portion, sentences, phrases, words? Within the procedures of content analysis (as well of Qualitative Content Analysis) the analyst is forced to define those parts in advance, called content-analytical units (cf. chapter 4.4). This definition of content-analytical units determines how subtle or rough the text analysis will be. The definition depends on the research question and the quantity of material.

So what are the possibilities for defining those units? Linguistics differentiates the following elements:

- **Seme** is the smallest meaning component of texts (Greimas, 1983; Schulte-Sasse & Werner, 1977). Structural semantics hold that specific language terms can bear several meaning aspects. Seme means the smallest unit. So terms for seating furniture can be understood as combination of different semes:
  S1: furniture
  S2: only to sit
  S3: with backrest
  S4: with armrest
  S5: with legs
  S6: hard material
  S7: cushioned
  S8: only for one person
  A sofa would be a combination of S1, S3, S4 and S7, a stool a combination of S1, S2, S5, S6. But sofa can contain other semes like coziness or bourgeois.

- **Phoneme** is the smallest hearable segment of language, a sound or tone.

- A **syllable** is the phonological (sound elements to be heard) unit of words. Words can have one or more syllables.

- **Words** are the basic elements of texts, which have a lexical meaning. Words can have different meanings in respect to their text context (“blue” as a color or a mood).

- **Phrases** are groups of words without finite verbs, which have a syntactic (grammatical) connection.

- A **Paraphrase** is the content of a phrase without any decorative or filler words, it is the core meaning of the phrase. The semantic content is equivalent to the phrase, but is expressed in a short form.

- **Clauses** are parts of sentences with syntactic (grammatical) connection and verbs.

- **Sentences** are speech units, which are complete and relatively independent in respect to grammar, content and intonation.

- A **proposition** is, similar to a paraphrase, the content of a sentence, the logical statement, independent from the language form.

- **Paragraphs** are (usually) two or more consecutive sentences which have a common meaning or theme. In interview transcripts paragraphs are made between questions and answers.

- **Text documents** are paragraphs belonging together, usually from one communication source or situation of emergence.

Link to QCAmap software (www.qcamap.org):

The software forces you to define content-analytical units (if not defined you cannot code your texts). You have to define the coding unit, the context unit, and the recording unit (see chapter 4.4). For that you can use those linguistic terms.
For summarizing content analysis (cf. chapter 6.1) the concept of paraphrases would be helpful.

Linguistics can help us to develop procedures of text analysis in another way: for the procedure of explication of unclear text passages we have to define what determines the meaning of a part of text. From linguistics we get two answers:

- The lexical and grammatical meaning,
- The context meaning.

Lexical and grammatical meaning can easily be discovered by formal analysis of the text. Context meanings are more difficult. We have to define, what context means. Van Dijk (1999; 2007) has worked out a linguistic theory of context. For him every talk and every text is situated and therefore needs a context analysis. “It is the way participants *understand* and *represent* the social situation that influences discourse structures” (Van Dijk, 2007, p. 4). The context gives a frame of reference. He differentiates two models of context:

- **The micro context**: that is the specific situation (time, location, the speaking (writing) person, his or her identity, aims, personal knowledge and his actions and plans).
- **The macro context:** that is allocation in society, the relevant reference groups and group actions and goals, the institutional and cultural background.

We derive from this differentiation two forms of explicating content analysis, narrow and broad context analysis, and use those descriptions for the development of content-analytical rules (cf. chapter 6.3).

Link to QCAmap software (www.qcamap.org):

To implement explicating qualitative content analysis (narrow and broad context analysis) within the QCAmap-software is a plan for the future (because it is not used so often like inductive category development and deductive category assignment).

3.4 Psychology of Text Processing

Another research field seems to provide knowledge for developing text analysis techniques: the psychology of text processing (Ballstaedt, Mandl, Schnotz & Tergan, 1981; Mandl, 1981). This is an area within educational psychology, which analyses everyday processes of students working with texts. Researchers try to observe persons dealing with texts in educational or everyday environments. One promising method of data collection in this context is “thinking aloud”. The person in front of the text formulates and speaks out all the cognitive processes (perceptions, appraisals, thoughts), which are going on in himself or herself.

Text processing is understood as interaction between reader and text, as an active construction of meaning structures by the reader. His or her preknowledge and interests have a selective and organizing function within this process. Text understanding is guided by cognitive schemata. “A schema is an active organizing unit of knowledge, which based on experiences brings together different concepts of objects, events and actions within one complex of knowledge” (Schnotz, Ballstaedt & Mandl, 1981, p. 113, transl. P.M.).

The psychology of text processing now differentiates between an ascending (starting with the text) and a descending (starting with a schema) direction of text understanding. Ballstaed, Mandl, Sachnotz & Tergan (1981) have demonstrated this in the following figure:

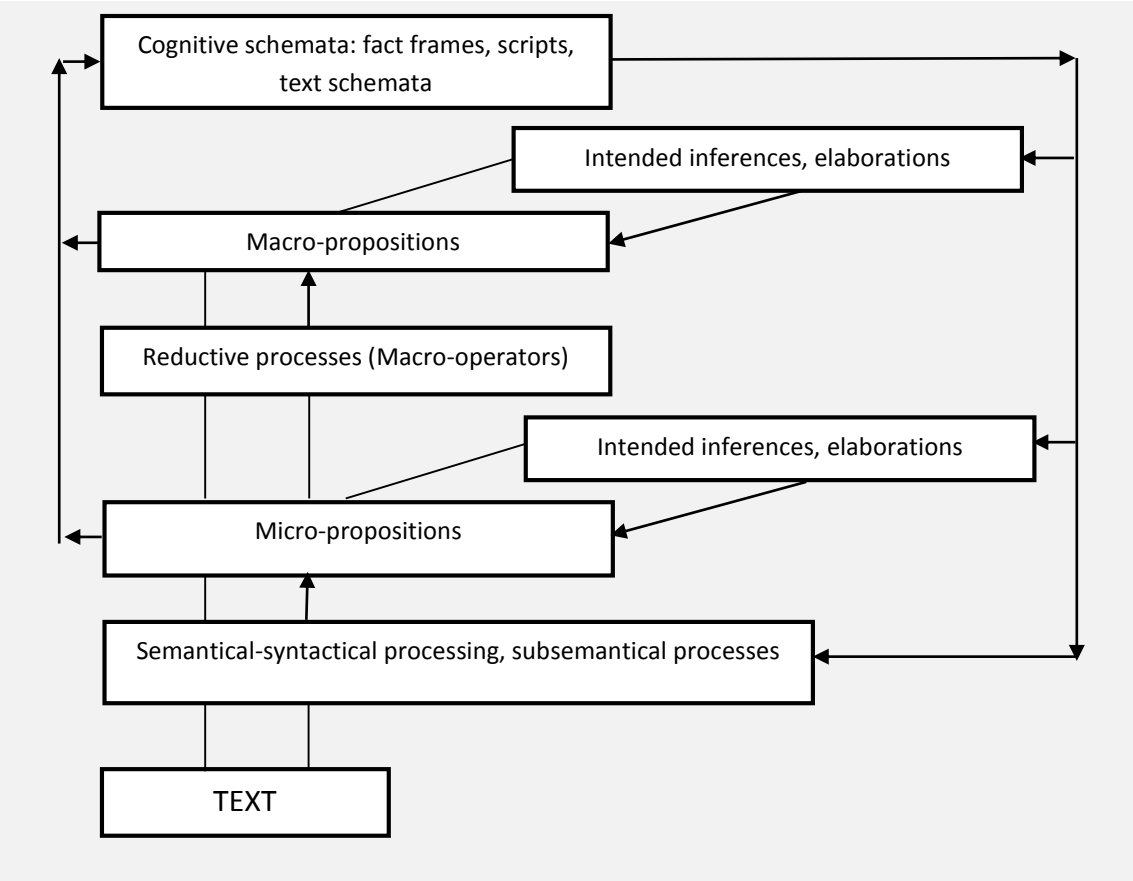


Figure 6: Model of the processes of text understanding (Ballstaedt et al., 1981, p. 83)

The text (at the bottom of the model) first is realized visually (subsemantical processes), characters, words etc. are identified in their meanings and relationships (semantic-syntactic processing) to build up a network of meaning units (micro-propositions). Here the model borrows concepts from linguistics (cf. chapter 3.3). At this point already preknowledge and preconcepts, cognitive schemata, are used:

The reader adds to the text own experiences in the sense of elaboration or inferences. The next steps, so the theory says, and empirical studies have shown, are reductive: the text is summarized to a smaller network of meaning units (Macro-propositions). This macro-structuring again is described in linguistics (VanDijk, 1980). The studies of everyday processes of learners summarizing texts could differentiate five different strategies of reduction:

1. Leaving out

Propositions of a text could be left out, if they are not necessary for the understanding of other propositions and if they are not the result of Macro-proposition. Ballstaedt et al. 1981 (p. 70ff) gave an example:

> "Because the world, following a well-known slogan, became smaller through airplanes, satellites, and television…"

The hint to the well-known slogan is not necessary for the understanding of the whole text and can be left out.

> *"Because the world became smaller through airplanes, satellites, and television…"*

2. Generalization

Related propositions in the same context could be summarized by a more general, more abstract paraphrase with a superordinate meaning. It serves as macro-proposition. This could be related as well to parts of propositions, predicates and arguments. Here again the example:

> "Because the world, following a well-known slogan, became smaller through airplanes, satellites, and television…"

could be summarized by generalization to:

> *"Because the world, following a well-known slogan, became smaller through means of transportation and media…"*

3. Construction

In a series of propositions belonging to a comprehensive, more global fact a new proposition can be constructed, which formulates the common overwhelming meaning. Here again an example from Ballstedt et al., 1981):

> "He took the matches, lit the pipe and puffed the smoke into the air."

Could be summarized by construction into

> *"He smoked."*

4. Integration

The process is similar to construction, but here the summarizing proposition is already found within the text.

> "He took the matches, lit the pipe and smoked."

Could be summarized by integration into:

> *"He smoked."*

5. Selection

In a broader context, a central proposition is chosen from the text basis, because its content seems so important that it could not be left out. In this case, the original proposition and the summarizing proposition are identical. The reader finds within a text a sentence which bears the central idea (normally he underlines the sentence) and selects it.

If the reader, using those five reductive operators, arrives at macro-propositions he again links them with inferences and elaborations from his or her pre-knowledge (cf. Fig. 6).

Link to QCAmap software (www.qcamap.org):

The psychology of text processing especially those reductive operators (leaving out, generalization, construction, integration, selection) can be used to formulate content-analytical rules for summarizing.

3.5 General Psychology: Theories of Categorization

The next important research field originates from general psychology. We have learned in the introduction (chapter 1), that the central elements of all forms of content analysis are the categories. They are the instruments with which the text is worked through. They can be inductively developed out of the material or deductively crystallized from theory and then assigned to parts of the text.

But what are categories? General psychology analyses the processes of learning and memory, of mental representation of the world (Muesseler & Prinz, 2002). Concepts and categories are central terms in those cognitive processes. A basic procedure of knowledge building is to put things we experience together into classes of things. Concepts are mental representations of classes of things, "concepts are the glue that holds our mental world together" (Murphy, 2002, p. 1). Categories are the classes themselves.

It was Aristotle (384a-322a), the developer of the first comprehensive system of sciences, who put the process of categorization in the center. Every science has to construct basic categories and main categories and to order the objects of its research area into those categories. So we arrive at a descriptive theory of the discipline. The classical viewpoint on categories (Murphy, 2002; Waldmann, 2002) is, that there are defining criteria for each concept. A triangle is defined as closed geometrical form with three straight sides including three angles with a sum of 180°. But another possibility of defining categories would be to list some examples. Not only general psychology was interested in those rules of defining categories as a central component of human knowledge. Developmental psychology (e.g. Jean Piaget) analyzed how children are learning categories, which would be an important part of speech development cognitive development, respectively. Following these lines of research we nowadays differentiate between three theories of categorization (Murphy, 2002):

- The **definitional theory**, coming from the classical view of categories, lists necessary and sufficient conditions for belonging to the category. On the basis of this explicit definition the classification of objects is possible.
  Example: A tree is a plant with a central wooden trunk, lateral branches with leaves or needles.

  There are some critical points within the definitional theory: the limits between categories are often unclear, especial with natural categories (Is a chicken a bird?). Categories may overlap. The rules often are so complex that the language user does not know them.

- The **prototype theory** holds that we have in mind typical exemplars of each category. We compare the objects that we observe with those prototypes, and if they are similar we can categorize them.
  Example: A typical tree would be (at least for a Bavarian) a fir.

  This explains that some exemplars of a category are more or less typical, that there are maybe blurred limits. But as well this is the problem of the approach: only the core of the category is defined.

- This leads to the third approach: the **decision bound theory**. The categories are defined by their differences to neighbor categories, the language user knows the limits within a set of similar categories.
  Example: A tree has in contrast to a bush only one trunk, is usually higher and lives longer.

  But this approach was criticized because it cannot explain what sort of mental representation stands behind a category.

If each of those categorization theories has disadvantages, perhaps the best possibility to define concepts is to use all three approaches for definition. And in fact some researchers have developed an approach of multiple systems in categorization (Waldmann, 2002). The language user switches in his or her mental representation between definitional and demarcation rules and typical examples of categories. The most precise definition of categories would be to use all three approaches.

Link to QCAmap software (www.qcamap.org):

For deductive category assignment the exact definition of the categories is crucial. We use all three approaches for all categories (definitions, anchor examples and coding rules) and put them together in a coding guideline. It is developed before coding using theoretical arguments (especially the definitions) and completed (anchor examples, additional coding rules) within the pilot phase.

4. Basics of Qualitative Content Analysis

4.1 Basic Principles and Definition

The basic approach of qualitative content analysis is to retain the strengths of quantitative content analysis and against this background to develop techniques of systematic, qualitatively oriented text analysis. This will be explained more closely in the following.

4.1.1 Embedding of the material within the communicative context

A particular advantage of content-analytical procedures as compared with other approaches to text analysis is the fact that it has a firm basis in the communicative sciences. The material is always understood as relating to a particular context of communication. The interpreter must specify, to which part of the communication process he wishes to relate his conclusions from the material analysis. This content-analytical particularity should be retained at all costs for qualitative content analysis because many quantitative content analyses have neglected this point. The text is thus always interpreted within its context, i.e. the material is examined with regard to its origin and effect. A complex model in this connection will be introduced in the next chapter.

4.1.2 Systematic, rule-bound procedure

Preserving the systematic procedure of content analysis is one of the main concerns of the methods suggested here. Systematic procedure in this connection means first and foremost: orientation towards rules of text analysis laid down in advance. This is seen at several points. The establishing of a concrete procedural model of analysis is of central importance. Content analysis is not a standardized instrument that always remains the same; it must be fitted to suit the particular object or material in question and constructed especially for the issue at hand. This is defined in advance in a procedural model (examples of such models will very frequently be found during perusal of this book), which defines the individual steps of analysis and stipulates their order. But it is also continually necessary to establish additional rules. Such bodies of rules are featured below. It is an axiom precisely of content analysis, in contrast to "free analysis", that every analytical step and every decision in the evaluation process should be based on a systematic and tested rule. Finally, the systematic quality of content analysis is reflected also in its method of "dissection". The definition of content-analytical units (recording units, context units, coding units, cf. chapter 4.5) should on principle be retained also in qualitative analysis. Concretely, this entails deciding in advance how the material is to be approached, which parts are to be analyzed in what sequence, what conditions must be obtained in order for an encoding to be carried out. In the process of inductive category formation it can be useful to keep such content-analytical units very open-ended. Despite this, however, the process here also is characterized by dissection of the material carried out progressively from one passage to the next. Certainly, it is precisely this last point, which has frequently been criticized by proponents of the qualitative approach. Latent structures of meaning

cannot be revealed in this way, they say. One answer to this, in the case of such an analytical objective, is to define the units in an accordingly broad fashion. Nevertheless, it is important that such units are theoretically well founded, in order to allow other analysts to access the logic and method of the analysis. The system should be described in such a way that another interpreter may carry out the analysis in a similar way.

4.1.3 Categories in the focus of analysis

The category system is the central point in quantitative content analysis. Even with qualitative analysis, however, an attempt should be made to concretize the objectives of the analysis in category form. The category system constitutes the central instrument of analysis. It also contributes to the intersubjectivity of the procedure, helping to make it possible for others to reconstruct or repeat the analysis. In this connection qualitative content analysis will have to pay particular attention to category construction and substantiation. However, precious little help is given in this respect by standard works on content analysis. Krippendorff thus writes: "How categories are defined ...is an art. Little is written about it." (Krippendorff, 1980, p. 76). That of course is unsatisfactory. It is precisely the methods described in this work, which may be of further assistance in this regard. On this point also, qualitative proponents make the objection that orientation to categories entails an analytically dissecting methodology which impedes synthetic comprehension of the material. In answer to this it can be said that qualitative content analysis also provides methods which accord prominence to synthetic category construction, i.e. where the category system actually constitutes the findings of the analysis. On the other hand, working with a category system is an important contribution to the comparability of findings and the evaluation of analysis reliability.

4.1.4 Object reference in place of formal techniques

On the other hand the methods of qualitative content analysis should not simply be techniques to be employed anywhere and everywhere. The alliance with the individual object of analysis is an especially important concern. This is seen in the fact that the procedures discussed here are oriented to the way language material is ordinarily experienced and dealt with in everyday life. The three base techniques of summarizing, explication and structuring (cf. chapter 6) are based on this and the rules for those basic procedures stem from an analysis of everyday handling of texts (cf. chapter 3.3, 3.4 and 3.5). This clearly demonstrates that it is the object of analysis which is paramount. The methods are not intended to be conceived of as techniques which can be blindly and automatically transferred from one object to the other. The appropriateness of method must be demonstrated with regard to the particular material in each individual case. This is why the methods suggested here must always be adapted to suit the individual study.

4.1.5 Testing specific instruments via pilot studies

Regarded from the viewpoint of traditional quantitatively oriented scientific understanding, this last point could be objected to on the grounds that it provides no guarantee of methodological comparability. Qualitatively oriented content analysis, however, deliberately forgoes the use of fully standardized instruments precisely because it places relations with the individual object above all else. This is why methods must first be tested in a pilot study. This applies equally to the fundamental method and the specific category system. In the procedural models in chapter 6 these steps are already included through the presence of reverse loops. What is important in this is that the trial runs are also documented in the research report. Here the inter-subjective testability is again of central importance, too.

4.1.6 Theory-guided character of the analysis

It must now have become clear that qualitative content analysis is not a rigidly delineated technique, but a process in which new decisions regarding basic procedure and individual stages of analysis constantly have to be made. What are such decisions based upon? In qualitatively oriented research it is repeatedly stressed that theoretical arguments must be used. Technical fuzziness is compensated for by theoretical stringency. This applies above all to the explication of the particular issue, but it also concerns detailed analyses. Theory-guidedness means that in all procedural decisions systematic reference is made to the latest research on the particular subject and on comparable subject fields. In qualitative content analysis, content-related arguments should always be given preference over procedural arguments; validity is regarded more highly than reliability.

4.1.7 Integrating quantitative steps of analysis

As was already emphasized in the last chapters, efforts are made to combine qualitative and quantitative methods. Putting it more exactly, the chief task is to determine those points in the analytical process at which quantitative measures can be sensibly brought in. Reasons for their use should then be carefully explained and the results should be analyzed in detail.

Quantitative steps of analysis will always gain particular importance when generalization of the results is required. In case study procedures it is important to show that a certain case recurs in similar form with particular frequency. But within content-analytical category systems, registration of how often a category occurs may give added weight to its meaning and importance as well. Of course, this must be given adequate justification in the respective case. A precisely based qualitative assignment of categories to a certain material (e.g. through the structuring method, cf. chapter 6.5) can also be supplemented by more complex statistical evaluation techniques, as far as these are appropriate to the purpose of analysis and suited to the object involved. Especially attractive in this connection are the computer programs developed in the last few years as a support for qualitative analysis (cf. chapter 6). Here qualitative and quantitative steps of analysis have been made generally

available in the simplest possible way, which lends particular support to integrative methodological conceptions.

4.1.8 Quality criteria

It is precisely because here the harsh methodological standards of quantitative content analysis have been softened and applied more flexibly in some respects, that the assessment of results according to quality criteria such as objectivity, reliability and validity is especially important even in qualitative content analysis (cf. on this point Ch.7). For content analysis it is inter-coder reliability which is of particular significance. Several content analysts work on the same material independently from one another and their findings are compared. In general this should also be attempted with qualitative content analysis, although negative findings do not necessarily have to lead to the immediate abandoning of the analysis. Here the main point, again, is to understand and interpret unreliabilities. Such a search for sources of error is especially important during the pilot phase, as it can lead to the instruments of analysis being modified. That is to say, it can lead to inquiry into arguments for reliability and validity while the process of analysis is actually going on, instead of leaving this exclusively to a single assessment at the close of the analysis.

4.2 Materials for Qualitative Content Analysis – What Could be Analyzed?

Content Analysis is a method of data analysis. Sometimes, e.g. within mass media research contexts (cf. chapter 3.1), it is labeled as data collection method, because it extracts material (as sample) out of a huge amount of texts (e.g. newspapers). But this seems misleading for us. The step of sampling material from text corpora (in the context of social sciences we would call this a document analysis design) is done before content analysis. As lined out earlier (chapter 1.4) a sampling theory would be necessary, or at least arguments for the selection of material. But what would be possible material for Qualitative Content Analysis?

When we have finished the process of data collection, as possible material for answering the research question, there are two classes of results: numerical data (frequencies of test or questionnaire values, tallies in standardized observation studies, measurements) or texts. It is a pity that textbooks on data analysis mostly only deal with the analysis of numerical data (which means statistical analysis) and leave out text analysis. But texts are occurring so often within social science contexts, like:

- Interview transcripts: There are different forms of interviews like narrative interview, biographical interview, deep interview, focus interview, semi-structured interviews, which are all leading to transcripts.
- Focus groups: It is a more and more favored data collection method to hold moderated group interviews. The discussions are recorded and transcribed.
- Materials from open questionnaires: Many questionnaire studies contain at least some open questions, which are leading to text material.
- Observational studies which are not fully standardized (in the sense of fixed checklists or tallies) produce protocols. Especially in field studies it is important to write field notes. All of this produces text material.
- Document analysis as research design can deal with a broad range of texts: newspapers or other mass media products, files, protocols, documentations in institutions, web pages and so on.
- Secondary analysis is a more and more interesting research approach, because scientific institutions are building up databases of study materials like texts, which are free for further text analysis.

For all studies which are producing their text material themselves (interview, focus group, open questionnaire or observation) it is important to decide for transcription rules. There are different models (cf. Howitt, 2010, chapter 6), handling dialect, verbal and nonverbal characteristics through special signs (see chapter 4.3). It is crucial to decide for a system of transcription and to employ it constantly. The text analysis can only refer to the transcripts, and transcripts are never complete representations of their raw material.

Link to QCAmap software (www.qcamap.org):

To import the text material into the software it is necessary to have a text file in Unicode, an international digital standard format. Following an ISO-norm, signs from different alphabets like Arab, Greek, Kirill, Hebrew, Thai, Japanese, Chinese as well as mathematical, economic and technical special characters can be read. Only bold face and underlines are ignored. Use capitalization or spacing for accentuations.

In some cases a transcription would be too much time and resource consuming, especially if the material is clear, less ambiguous, and the research question needs no deep interpretation. Then the analysis could be done directly from the tape-recorded material. The techniques of Qualitative Content Analysis could be applied. Even video material could be analyzed using Qualitative Content Analysis (cf. Mayring, Glaeser-Zikuda & Ziegelbauer, 2005). In those cases the video material is treated as text, because the categories have to be defined as text. A direct coding of video material without referring to language is, at the moment, not possible.

Link to QCAmap software (www.qcamap.org):

The use of the QCAmap software would of course not be possible in that case, because it needs text material. Maybe in the future we will develop possibilities for implementing audio or video files.

4.3 Transcription Systems

The transformation of spoken language (in an interview or a focus group) into text needs transcription rules. The interview transcript almost always implies a loss of information, a focus on only some aspects of the spoken language. Usually the content of the language is of main interest, but there are possibilities to enrich the text with additional aspects. A transcription system is a set of exact rules how spoken language is transformed into written text. I have put the following transcription systems into order depending on how much information is preserved (and in consequence how time consuming the transcription process will be) (cf. Edwards, 2002; Howitt, 2010, chapter 3.6).

- **Selective protocol**: This is an economic procedure for transcription. The researcher defines those parts of the (audio recorded) interview, which are relevant for the research question. Interviews often contain extensive introductory parts, motivating the person or explaining the research question, excurses which are important for maintaining a good climate and the compliance of the interviewee. But those parts sometimes are not necessary for the text interpretation. Or the interview has an open, narrative character and the researcher is only interested in specific topics. The researcher formulates a clear selection criterion and the transcription regards only those passages.

- **Comprehensive protocol**: If the material is not too ambiguous, not too open to interpretations, and if we are interested only in the content, a comprehensive protocol might be sufficient. The material is on hand in textual (documents) or audio-recorded (interview) form. The researcher reads or hears the language, stops in regular periods and sums up the main content writing it down or speaking it into a microphone. In the last case the use of an automatic speech recognition program could be useful for the transcription. It has to be trained for the own voice; because of this necessity of training the adoption for ordinary interviews is not recommendable. Of course the researcher has to be trained for the summary procedure.

- **Clean read or smooth verbatim transcript**: The transcription is done word for word, but all utterances like uhms or ahs, decorating words like, right, you know, yeah are left out. A coherent text, simple to understand but representing the original wording and grammatical structure is produced. Short cut articulation and dialect are translated into standard language (c'mon = come on).

- **Pure verbatim protocol**: The transcription is done word for word including every utterance from the audio file. Dialect formulations, fillers, articulation are maintained. The transcript now is very near to the natural language, but reading it is not easy, sometimes (e.g. slang) needs some practice.

- **International Phonetic Alphabet (IAP):** If we want to preserve as much as possible the coloration in oral language (like dialects) in transcripts we can use the International Phonetic Alphabet (see http://www.langsci.ucl.ac.uk/ipa/) with special characters, usually used in foreign language dictionaries, to indicate the pronunciation. Some of those special characters are (sounds of a):

a	open, short
ɐ	close light
ɑ	dark open
ɒ	round
æ	open light
ɑ̃	nasal
ʌ	dark closed

The problem of this system of transcription is, that you need a special set of characters and that the text is not easy to read. But sometimes it makes sense to use this technique.

- **Protocol with special characters**: This technique is usually used for interviews in qualitative research. There is a set of signs for describing nonverbal aspects of the natural language. Above all every characteristic like laughter, crying, low voice is notated. There are different systems in different countries (languages). In German speaking countries the GAT system of transcription (Selting, Auer, Barden & Bergmann, 1998) is widely used. Here are some examples of symbols and meanings:

acCENT	capitals for accentuations
ac!CENT!	strong accentuation
?	pitch rise
;	lower pitch
< p >	quiet speech (piano)
((laughter))	special language events
( )	not understandable passage
(.) (….)	small or long pause
: :::	small or long lengthening

For the English language the Jefferson transcript system (Jefferson, 2004) is widely used. It uses for example ↑for pitch rise (“absol↑utely”) and ↓for lower pitch (“absolutel↓y”) and ° for quieter speech (“she had °died°”), other signs are used similar to GAT.

Link to QCAmap software (www.qcamap.org):

All those special characters, including the signs in the International Phonetic Alphabet, are kept when the text is transferred in Unicode-txt-format, which is necessary for the software. Only bold, cursive and underlining are ignored.

- **Protocol with comment column:** This maybe most extensive form of protocol allows the transcriber to use a special column for all special perceptions besides the text. This procedure sometimes is used for the transcription of focus group discussions. Along with the discussion moderator a second researcher is present in the groups and writes down an observation protocol, which then is united with the text transcript.

It becomes clear that a certain system of transcription has to be defined and argued. It is important to give the exact rules at hand to the transcribing person. The decision for one of those systems depends on the research question, the characteristics of the language, and the theoretical background of the analysis. For a psychoanalytical text analysis for example a word-by-word transcription including nonverbal aspects seems to be very important. Other procedures do not demand this elaborateness. The decision for one system might be a matter of resources (time and money) as well.

4.4 Content-Analytical Context Model

When the base material has been described in this way, the next step is to ask what one would like to find out from it. Without a specific line of inquiry or established direction of analysis any content analysis would be unthinkable. The text cannot be interpreted "off the cuff", as it were. Determining the line of inquiry can be conceived of as a two-stage operation:

*** Direction and goal of the analysis**

Language material allows statements to be made in a variety of directions. One can describe, for example, the subject matter treated in the text, one can discover something about the author of the text, or establish the effect of the text on the target reader. This is something that must be decided in advance. What is helpful in this respect is to perceive the text as part of a communication chain, and to integrate it into a content-analytical communication model. An approach is given by Lasswell's formula on the analysis of communication: "Who says what, in what way, to whom and with what effect?" A simple communication model on this basis would be the following (Lagerberg, 1975):

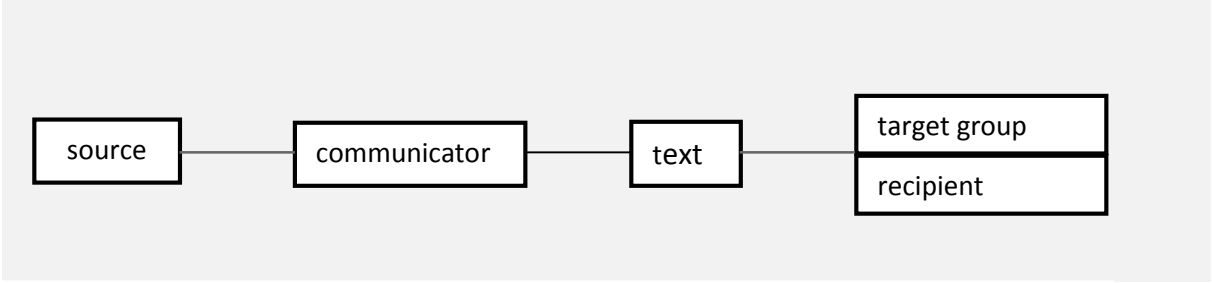


Figure 7: Simple content- analytical communication model (Lagerberg, 1975)

On the basis of what has been discussed in the preceding chapters, however (cf. chapter 5.2: Defining the base material), this model must be extended (Fig. 8).

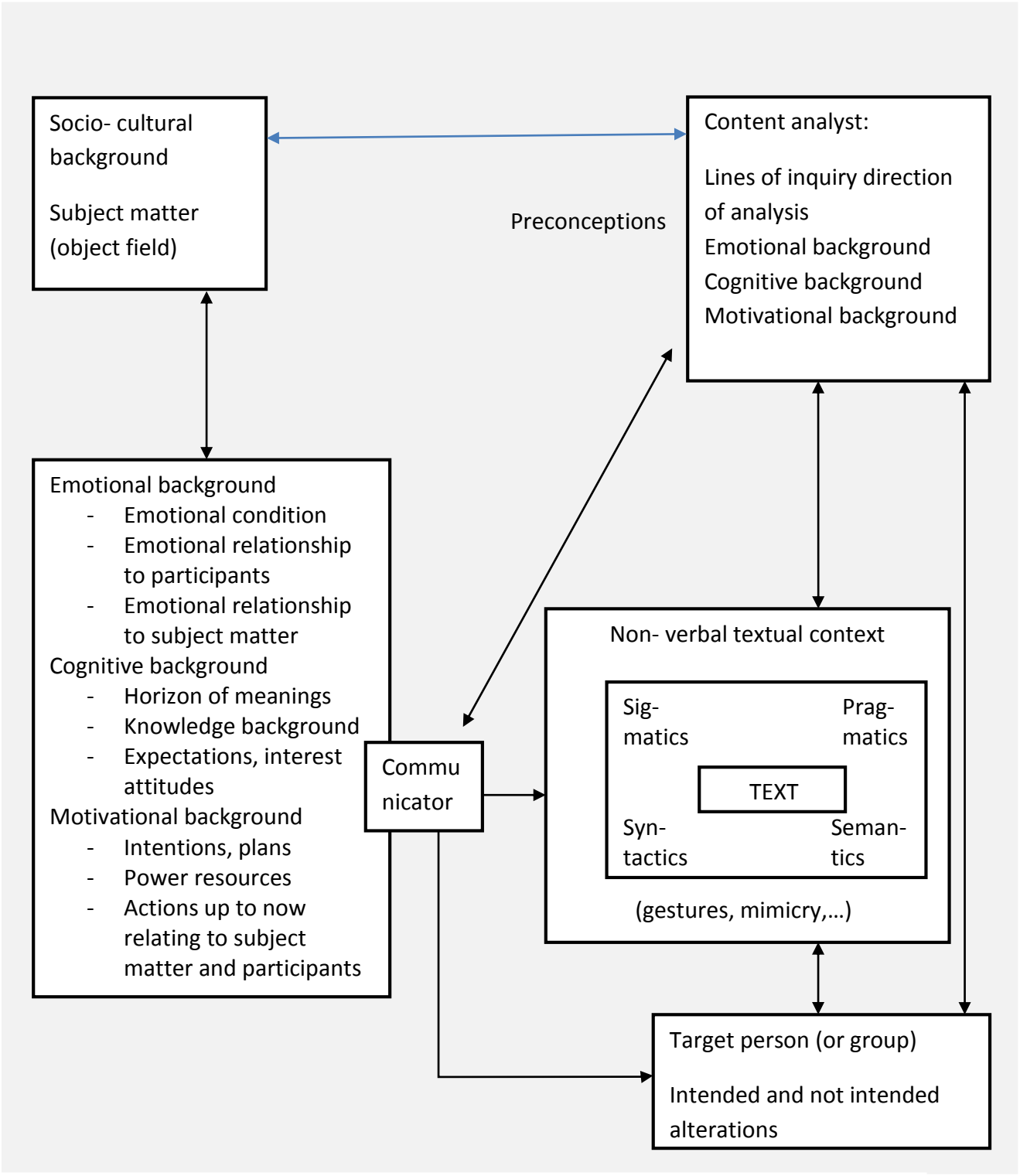


Figure 8: Content-analytical communication model

In this extended model we can now distinguish quite varied directions that a content analysis might take:

- One aim is to arrive at statements about the subject matter, above all in the case of document analyses.
- Content analyses in psychotherapy are mostly intended to bring out something about the emotional condition of the communicator.
- In literary studies the chief aim is usually to analyze the text for its own sake, with the socio-cultural background as the context.
- American propaganda research during the Second World War aimed at using content analyses to define the intention of the communicator.
- Analysis of the mass media frequently attempts to arrive at statements about their effects on the public, the target group, that is.

4.5 Content-Analytical Units

It is a central element of content-analytical procedures that the text is not interpreted as a whole but divided into segments. The categories are assigned to segments of text. This segmentation has to be defined in advance. Only if the segmentation rules, which are called units of analysis within the content analysis, are explicit, a second coder can come to similar results. This segmentation is important on three levels: First is has to be decided, how sensitive the analysis should be. Is it sufficient to detect slight undertones in the text to code it or are complete words, sentences or paragraphs necessary? The second decision is how many materials are relevant to come to a coding decision. And the third segmentation concerns the portions of text which are confronted with the category system.

Quantitative content analysis differentiates the following units (cf. Krippendorff, 1980), which are important for qualitative content analysis as well:

- The **coding unit** determines the smallest component of material which can be assessed and what the minimum portion of text is which can fall within one category.
- The **context unit** determines the largest text component, which can fall within one category.
- The **recording unit** determines which text portions are confronted with one system of categories.

The recording unit sometimes is called “unit of analysis”. But this is maybe confusing, because all three are units of analysis. Other sources call it “unit of enumeration”, but this will make more sense in contexts of quantitative content analysis.

The definition of these units is important for the intersubjectivity of the procedures, especially when inter-coder agreement tests are intended. If two coders refer to different content-analytical units, the agreement test is unfair.

Link to QCAmap software (www.qcamap.org):

In QCAmap you are forced to define the content-analytical units. If you leave this open a coding of the text is not possible.

Inductive category development (cf. chapter 6.2), one of the most common procedures of Qualitative Content Analysis, formulates categories and step-by-step augments the categories working through the text. At the end the category system stands for the whole material, so the recording unit has to comprise all text material for analysis.

Link to QCAmap software (www.qcamap.org):

In QCAmap, choosing inductive category development, the recording unit (all texts) is already fixed as default and cannot be changed.

In deductive category assignment the recording unit could be persons (in an interview study) or documents (issues in a newspaper analysis e.g.). The result of the content analysis will be one coding decision for each recording unit.

The coding unit expresses the sensitivity of the analysis. Is a slight overtone within one word (seme) sufficient for a coding decision, or should it be a complete phrase? You could use the linguistic terms mentioned in chapter 3.4 for defining the coding unit:

- Seme
- Phoneme
- Syllable
- Word
- Phrase
- Paraphrase
- Clause
- Sentence
- Proposition
- Paragraph
- Page

The context unit can be the same as the recording unit; but often it is broader. Even if the recording unit is only the answer to a specific interview question, the context unit could be established as the whole case. Sometimes there are additional observations during interviews or focus groups, transcribed in an observation protocol. Or there is further information about the persons or their cultural or social background which all could be made part of the context unit.

4.6 A General Step-by-step Model of Qualitative Content Analysis

In the next step the main consideration is to determine the special technique(s) of this analysis (see the following chapter) and to construct a procedural model for the analysis. The strength of Qualitative Content Analysis relative to other interpretation methods resides precisely in the fact that the analysis is resolved into individual steps of interpretation which are determined in advance. The whole process is thereby made comprehensible to others and intersubjectively testable; therefore it can also be transferred to other subjects, is available for use by others and can be regarded as a scientific method.

The procedural model for the analysis must certainly be adapted to suit the particular material and the specific problems concerned in particular cases. However, it is possible to construct a general model for orientation. The first stages of analysis in this model (figure 9) we have just discussed in chapter 5.2 to 5.4. For the next steps it is necessary first of all to establish **units of analysis**, in order to raise the level of precision of the content analysis.

The general procedural model is then the following (Fig. 9):

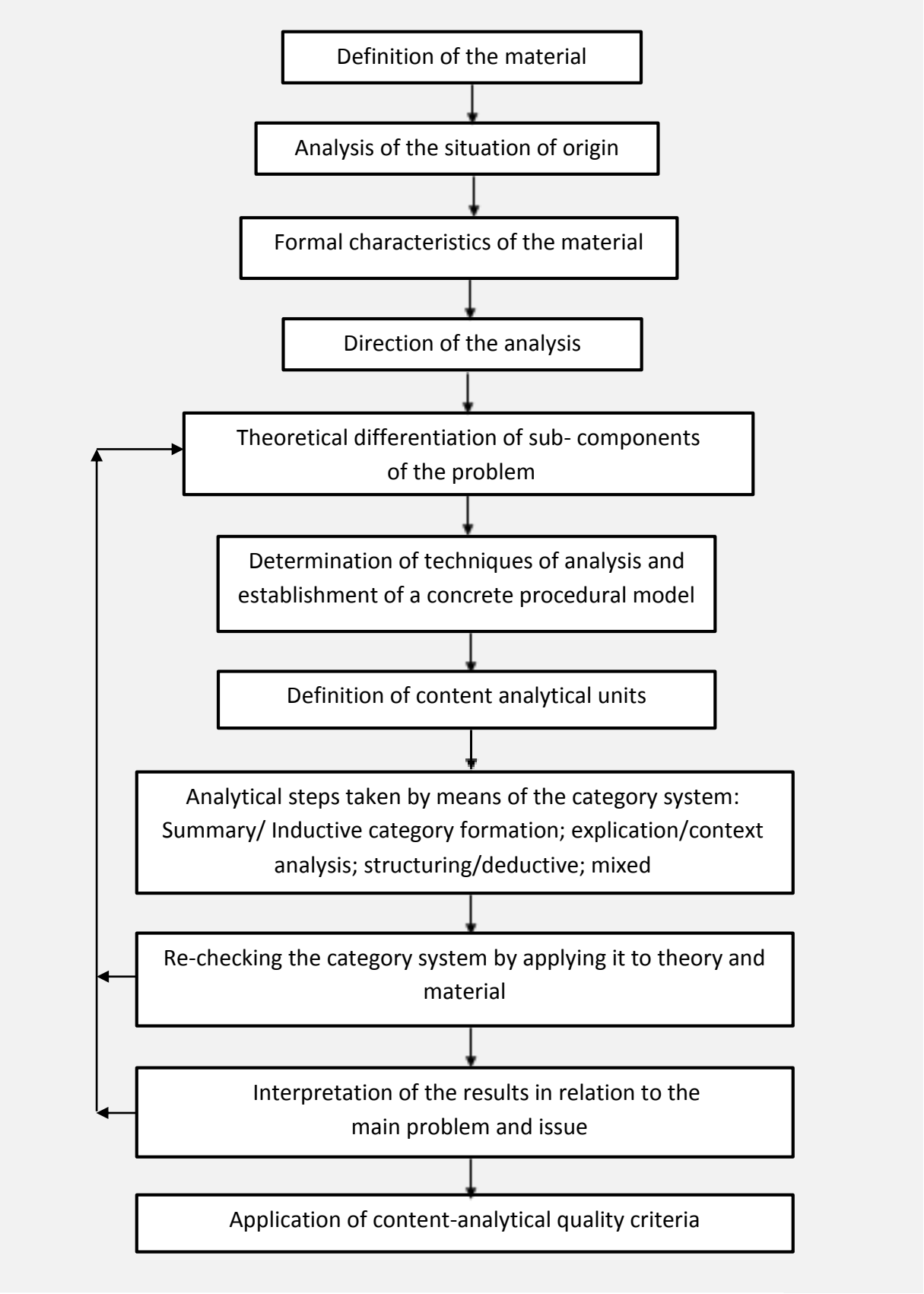


Figure 9: General content-analytical procedural model

5. Example

5.1 Presentation of the Corpus Material

Within the framework of a project fostered by the DFG (German Society for Scientific Research), and entitled "Cognitive control in crisis situations: unemployment among teachers", open-ended interviews were conducted with jobless teachers. How does the individual experience this situation, what stresses and strains does he or she feel in which particular areas, how does he view his particular position, how does he cope with it inwardly, and what attempts does he make to deal with it outwardly? These questions were put to a random sample of 75 unemployed teachers who were each interviewed seven times in the course of one year. Stress patterns and coping procedures were to be examined also with reference to the biography and life experience of the particular individual concerned. To this end, questions were also asked about the first removal from the parental home, initial teaching experiences during undergraduate practical training phases, experiences during postgraduate training, and experience of the final examination, the Second State Examination for Teachers.

The interviews were tape-recorded and then transcribed as typescripts. These scripts have a total length of nearly 20,000 pages, and were analyzed using content analytical procedures.

Four samples taken from the interview section on postgraduate training will be considered in the following. The interviews are found in the appendix.

5.2 Defining the Text Material

Content analysis is a method of data analysis, i.e. it concerns language material which already exists in a finished form. In order to decide what can be interpreted at all from the material, it is necessary for an exact analysis of this base material to be carried out right at the beginning. This procedure, known in the historical sciences as source study or source evaluation, is all too often overlooked or neglected in content analysis.

Basically three stages of analysis must be distinguished here:

5.2.1 Determining the Material

First of all the material on which the analysis is to be based must be defined exactly. This "corpus" should not be extended or altered during the analysis unless certain conditions occur which render it vitally necessary.

In many cases a selection from a larger volume of material must be made. Problems of sample selection thereby come to the fore (cf. on this point Krippendorff, 1980, Ch. 6). Here, attention should be paid to the following points:

- that the basic volume of corpus material is exactly defined in its entirety;
- that the body of selected samples is established according to considerations of economy and representativeness;
- that finally the samples are taken according to a certain model (purely random selection; selection according to quotas established in advance; stratified or cluster selection).

The script passages selected from the DFG project "Teacher Unemployment" concern four case study examples from the first batch to be examined, each of them, respectively, from the first round of interviews. With all of them the interview passage selected is the one, in which questions are being asked on first practical experiences of teaching during postgraduate training. The main motive for choosing these examples was the clarity and vividness of the material, which cannot be viewed as representative.

The individuals involved are:

Case A: high school teacher (male) of physics and geography

Case B: high school teacher (male) of physical education and geography

Case C: high school teacher (male) of physical education and geography

Case D: high school teacher (female) of English and history

All four passed the state examination but were not employed by the state education service owing to the lack of scheduled positions vacant at the time. The interview participants were obtained via the German teacher union (GEW) and were approached directly by the interviewer.

5.2.2 Analysis of the Circumstances of Origin

An exact description is required of where, from whom, and under what conditions the material originated. The following is particularly important:

- the author of the material and/or the parties involved in its production;
- the emotional, cognitive and motivational background of the author(s);
- the target group for which the material is intended;
- the concrete circumstances of origin;
- the socio-cultural background.

In respect to our example: Participation in the interviews was voluntary. A certain reciprocal effect was brought about by the fact that the interviewers on their part placed an advisory folder containing collated information on employment chances, application possibilities, alternative professional opportunities etc. at the disposal of the participants. The conversations are of two kinds: half-structured interviews (in which the interviewer has a guide matrix of questions, the phrasing and sequence of which, however, he may vary); open-ended interviews (i.e. the interviewee can respond to the questions quite freely). The interviews were carried out by the author as part of the research project. They were held at the homes of the interviewees.

5.2.3 Formal Characteristics of the Material

Finally it is necessary to describe the form in which the material exists. As a rule, content analysis requires a written text as a basis. Such a text, however, does not necessarily have to have been written by the author himself. The "core text" forming the basis of the analysis often has further information added to it. This is usual above all with spoken language, when for instance during interviews or group discussions observational data is frequently incorporated into the script. Spoken language, mostly in tape-recorded form, must be transcribed. For this operation there are various transcription models (cf. chapter 4.3) which, even at this stage, can alter the original material considerably. These transcription rules must be defined exactly.

In respect to our example: The interviews were recorded on tape and then transcribed in typed form. The following instructions were given to those carrying out the transcription:

```
Research Project  "Teacher Unemployment"
Institute for Education and Educational Psychology, University of Munich

Instructions for interview transcription

           60  machine strokes per line
                  38 lines, interval 1.5

* Please transcribe completely and verbatim (leaving incomplete portions and
repetitions just as they are).

* The content should come first, however: "er" and similar phonetic fillers can be
 left out; regional accents should be ignored and all standard words written in
 standard German. Genuine dialect expressions, however, are to be retained and
 transcribed according to accoustic perception.

* Indistinct passages should be marked by a row of dots (....) corresponding to the
length of what was not discernible, so that the interviewer can add the missing sections subsequently.

* In the case of pauses, hesitations, etc., use a dash ( - ) with longer pauses
several dashes. If the reason for the pause is evident, please give this in brackets.

* State other noticeable concomitants (such as laughter, throat-clearing, etc.) also
in brackets.

* All other non-verbal features important for interpreting the content should also
be stated in brackets, e.g.:

  Interviewee: Hmnm  (in agreement).

* Typing errors should be simply crossed through (xxxx). Do not use correction fluid
or similar devices.
  (Irrelevant when transcribed on PC!)

* We require the original with two carbon copies. (Irrelevant wehen transcribed on
PC!) The material can be obtained from us.

* The format is 60 machine strokes per line, interval 1.5, 38 lines per page, cf.
boxed portion of these notes.

* When the interviewer askes a question, or simply speaks, please place the symbol
 "Q" (for "question") right at the edge of the margin, then a colon followed by two
 spaces. If more than one line is spoken, please begin the next lines right at the
 edge of the margin.

* When the interviewee, i.e. the unemployed teacher, is speaking, please use the
symbol "T" (for "teacher")

* In the case of any further questions do not hesitate to contact us at any time.
  We wish you and us a fruitful collaboration.
```

Figure 13: Notes on interview transcription for the research project "Teacher unemployment"

5.2.4 Direction of Analysis

The project from which the material is taken is oriented towards developmental psychology. The interviews were intended to encourage participants to report on their current feelings, their cognitive management of the situation, their coping efforts hitherto, and those further planned to deal with the situation, and on their own biographical experiences. According to the content-analytical communication model (cf. Figure 8), the direction of analysis is thus to use the text in

order to arrive at statements on the emotional, cognitive and activity background of the interviewees.

5.2.5 Theory-oriented Differentiation of the Problem

Content analysis, according to our definition, is characterized by two features: rule-bound procedure (which will be dealt with in the next section) and the theoretical orientation of the interpretation. This is expressed first of all in the fact that the analysis follows a precise and theoretically based issue of substance. In this respect it is necessary to say something about the concept of theoretical orientation, as among those who favor the qualitative approach there is a negative attitude towards theory, which repeatedly asserts itself. It is frequently alleged that theories distort the material, constrain the view of the analyst and hinder “wholehearted immersion in the material”. However, if theory is understood as a system of general principles on the subject to be examined, then it constitutes nothing more than the cumulative experience of others in the same field. Theoretical orientation means, then, the tapping of this experience in order to achieve an advance in knowledge. What this entails concretely is that the issue in the focus of analysis must be defined precisely in advance, viewed within the context of current research on the topic, and as a rule divided into sub-issues. As far as our example is concerned, this means the following:

5.2.6 Theoretical Differentiation of Sub-issues

The sample material contains statements by four unemployed teachers on their experiences during the postgraduate phase of their teacher-training program. The literature on teacher training hitherto has indicated that this postgraduate training phase means for teachers previously educated in the almost exclusively theoretical atmosphere of a university a kind of shock effect ("professional practice shock" or "job strain") on being confronted with the realities of school life. (cf. Smagorinsky et al., 2004; Mueller-Fohrbrodt, Cloetta & Dann, 1978; Dann, Mueller-Forbroth & Cloetta, 1981).

This is accompanied by a change of attitude in the direction of a controlling, disciplinary and authoritarian stance towards school students, a concept of giftedness which stresses the hereditary limits to the fostering of students' talents, increased punitive and pressurizing behavior towards students, and a decreased level of professional involvement.

It is of interest in this connection to establish whether the experiences of *unemployed* teachers are similar. What was particularly examined in the DFG project was how far their interest in the teaching profession is influenced and how this affects the way they deal with their own unemployment situation.

A further point of analysis was the question of whether these experiences had influenced generalized control expectation (cf. Rotter, 1966) and the self-confidence of the individual, and had had effects on his current coping strategies.

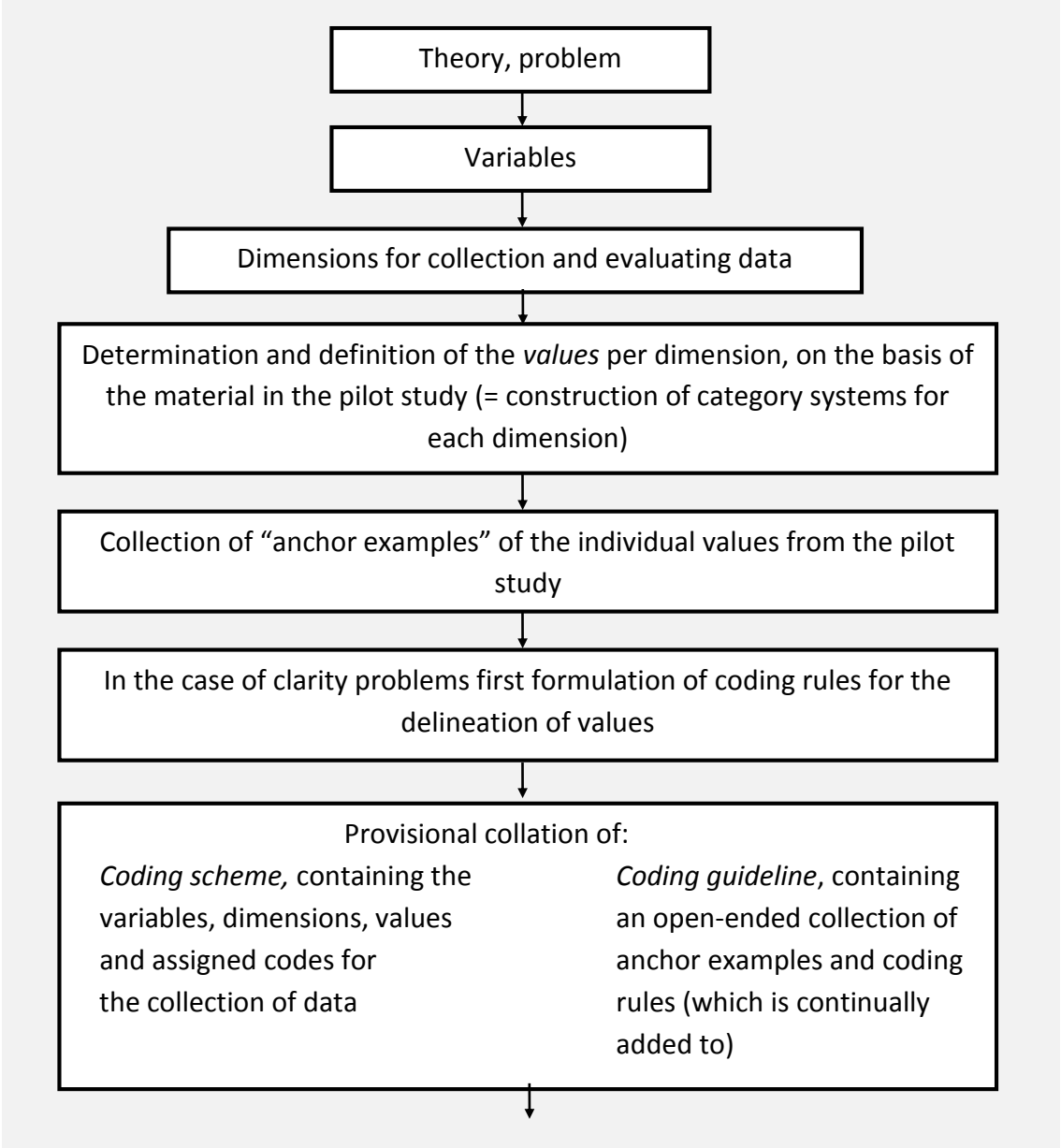
Two main questions emerge from this in relation to the sample material:

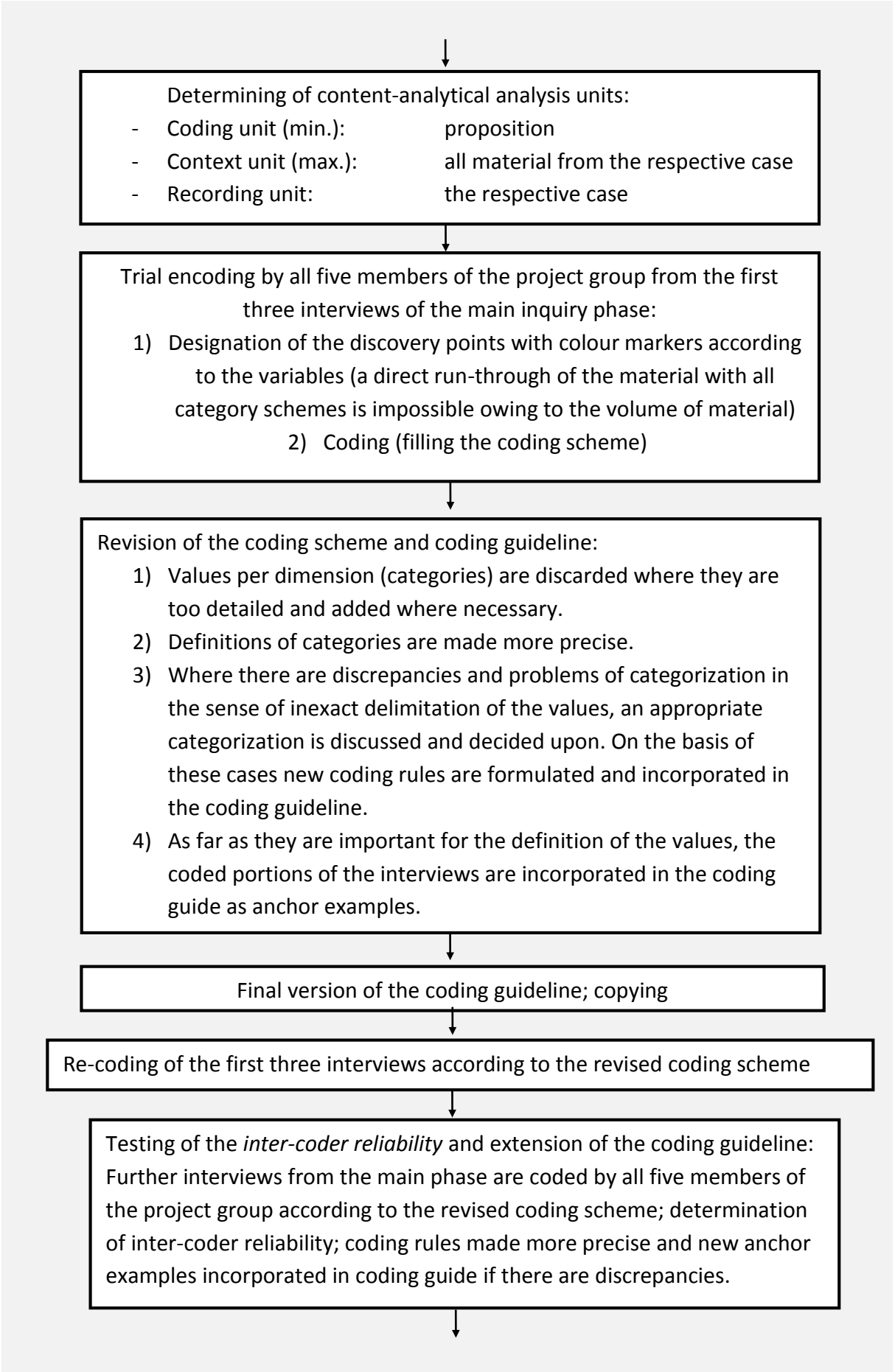
Question One: What are the main experiences of unemployed teachers with "professional practice shock"?

Question Two: What can be concluded from these experiences about the effects on self-confidence?

The next step in the general content-analytical step model (cf. Fig. 8) would be the determination of the specific content-analytical procedure. We have developed for Qualitative Content Analysis a set of different procedures, which now will be described. The example will be seized again for each technique.

Now back to our example: In the initial sections of this chapter we described the procedural model for the example analysis, which is to be used to demonstrate the various techniques in the next chapter; it will be continued during description of the individual techniques. In this way it is intended here to demonstrate the evaluation model of the whole project from which the sample material is taken (cf. Ulich et al. 1985). The core of this is a structuring content analysis or deductive category assignment (cf. Ch. 6.5), in which quantitative steps, extending to statistical analysis by electronic data processing, are incorporated. In addition, however, other purely qualitative content-analytical procedures are also employed for the analysis of non-systematically evaluated aspects.




Determining of content-analytical analysis units:
- Coding unit (min.): proposition
- Context unit (max.): all material from the respective case
- Recording unit: the respective case
Trial encoding by all five members of the project group from the first three interviews of the main inquiry phase:
1) Designation of the discovery points with colour markers according to the variables (a direct run-through of the material with all category schemes is impossible owing to the volume of material)
2) Coding (filling the coding scheme)
Revision of the coding scheme and coding guideline:
1) Values per dimension (categories) are discarded where they are too detailed and added where necessary.
2) Definitions of categories are made more precise.
3) Where there are discrepancies and problems of categorization in the sense of inexact delimitation of the values, an appropriate categorization is discussed and decided upon. On the basis of these cases new coding rules are formulated and incorporated in the coding guideline.
4) As far as they are important for the definition of the values, the coded portions of the interviews are incorporated in the coding guide as anchor examples.
Final version of the coding guideline; copying
Re-coding of the first three interviews according to the revised coding scheme
Testing of the inter-coder reliability and extension of the coding guideline: Further interviews from the main phase are coded by all five members of the project group according to the revised coding scheme; determination of inter-coder reliability; coding rules made more precise and new anchor examples incorporated in coding guide if there are discrepancies.

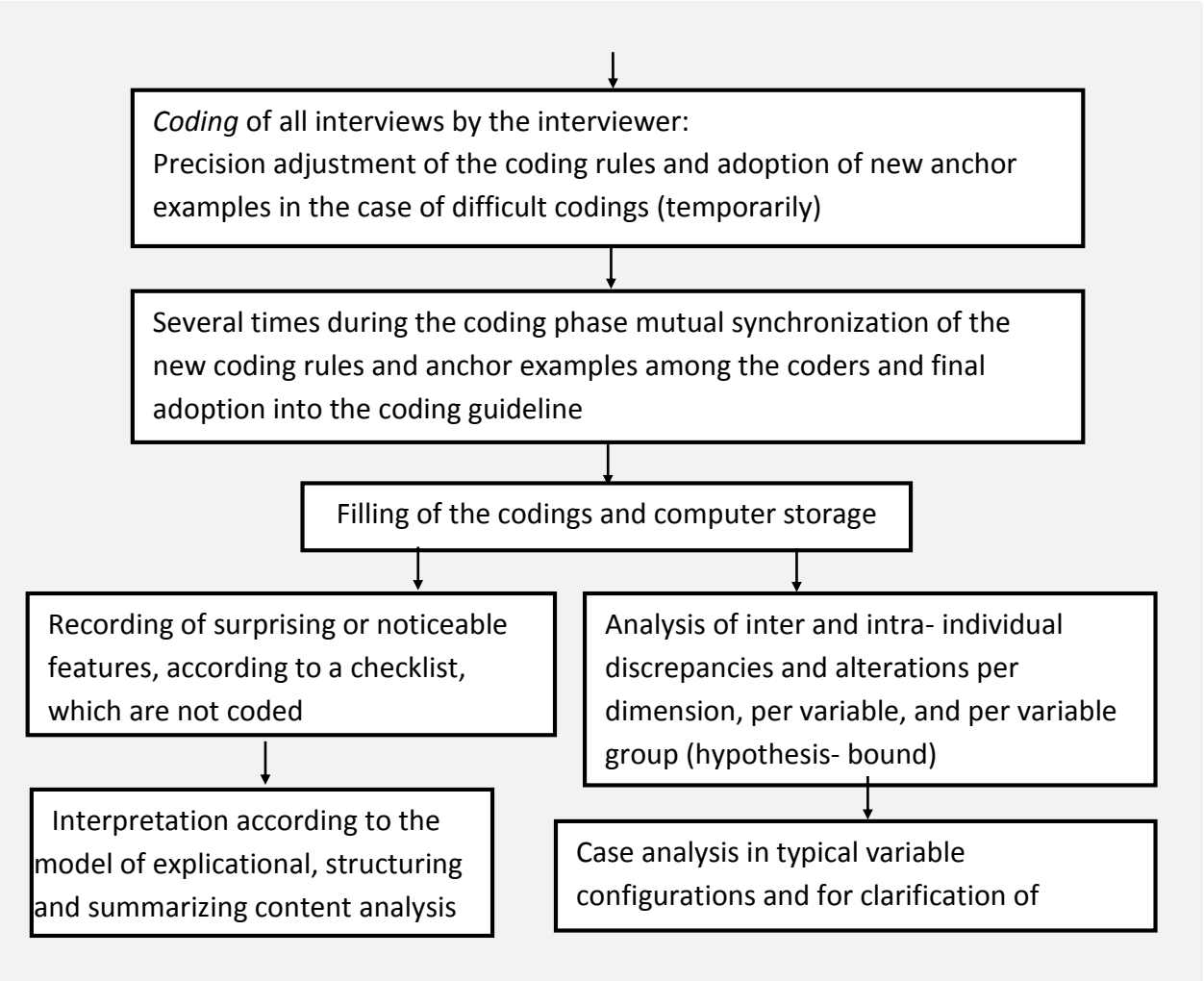


Figure 11: Step model for research project "Teacher Unemployment"

The example will be continued in the next chapters demonstrating the different procedures.

6. Specific Techniques of Qualitative Content Analysis

As already emphasized, qualitative content analysis is not to be conceived of here as an alternative to quantitative content analysis. The concern of this work is to develop methods of systematic interpretation which are applicable to the qualitative components necessarily involved in every content analysis, systematizing and making them testable through stages and rules of analysis. Quantitative procedures can certainly be incorporated into such an "interpretational theory", but then they simply occupy a new position. The concept "qualitative content analysis" may only be partly applicable to this approach, but will nevertheless be retained, in order to make the main bias clear and explicit.

In this chapter we propose concrete techniques of qualitative content analysis and demonstrate them with an example in the next chapter.

The aim of this book is to describe techniques of qualitative content analysis as basic procedural methods of systematic, i.e. theory- and rule-bound, textual understanding and textual interpretation.

The point of approach here is to find out the basic structure of ways in which texts are dealt with, both on an everyday informal level and on a scientific one. It is precisely this that is neglected by quantitative methods, which apply cut-and-dried procedures to the material without testing the assumptions implicit in them. This too must therefore be part of the approach of qualitative analysis.

6.1 Basic Forms of Interpretation

I would like to begin with the techniques and approaches which have been described above. It will be our task to emphasize what the analysis does with the material and what the role of interpretation is. These characterizations of interpretation type will then be categorized in fundamental interpretation procedures.

It could be shown that existing techniques of interpreting text material systematically are in their basic structures not so very different from one another and can be traced back to a few fundamental methods. The point of departure is mostly the individual text component which must be analyzed more exactly (for instance as regards to its textual context), evaluated in a certain direction, examined in its relations to other textual components (as a rule for the purpose of revealing textual structures) and often some kind of summary of the material is aimed at. So it seems to me that we can differentiate between three fundamental forms of interpreting: summary, explication, and structuring. They can generally be described as follows:

Summary: The object of the analysis is to reduce the material in such a way that the essential contents remain, in order to create through abstraction a comprehensive overview of the base material which is nevertheless still an image of it.

Explication: The object of the analysis is to provide additional material on individual doubtful text components (terms, sentences...) with a view to increasing understanding, explaining, interpreting the particular passage of text.

Structuring: The object of the analysis is to filter out particular aspects of the material, to give a cross-section through the material according to pre-determined ordering criteria, or to assess the material according to certain criteria.

These three basic forms of interpretation correspond also to the everyday view of the basic methods which can be employed in order to analyze (language) material as yet unfamiliar. At this point I would like to perform a little experiment in mind:

> Imagine that in the course of a hike across open country I suddenly come face to face with a gigantic piece of rock (perhaps a meteorite or the like). Supposing I wanted to find out what this thing was that was confronting me. How could I proceed?
>
> First I would retreat to a nearby place of high ground from where I could view the rock in its entirety. From this distance, certainly, I would no longer be able to see details, but I would have the whole object in its general rough outline before me, effectively in a reduced form (summary).
>
> Then I would go right up to the rock again and look at portions of it more closely which seem particularly interesting. I would break pieces off and examine them (explication).
>
> Finally I would try to break the whole rock open in order to get some idea of its internal structure. I would try to identify individual components, to take measurements of the rock, ascertaining its size, hardness, and weight by carrying out various measuring operations (structuring).

The most varied mixtures of these analysis types are of course possible, but the development of qualitative techniques should first of all take the basic forms as its point of departure.

These basic forms, however, must be further differentiated before an exact description of procedure is possible. Beside usual summaries the same procedures are useful for inductive category formation; a criterion for the categories is defined and aspects to this criterion are stepwise gathered in the material. Forms of explication are possible which use the textual context for the elucidation of a particular text passage (narrow contextual analysis); however, the most common method of hermeneutical interpretation is to use further material beyond the textual context for explication (broad contextual analysis). With structuring too, sub-groups must be distinguished: the structuring categories can form an ordinal scale or can remain as nominal categories. And mixed procedures with inductive and deductive steps of analysis (e.g. theme analysis, typological analysis) should be conceptualized as well.

Through this differentiation we arrive at nine distinct forms of analysis:

Reduction	(1)	summarizing
	(2)	inductive category formation
Explication	(3)	narrow contextual analysis
	(4)	broad contextual analysis
Structuring	(5)	nominal deductive category assignment
	(6)	ordinal deductive category assignment
Mixed	(7)	content structuring/theme analysis
	(8)	type analysis
	(9)	Parallel forms

This catalogue of qualitative analysis techniques is to be understood as a first approach and does not claim to be complete. However, it can serve as a starting point for systematic testing and further development. Qualitative content analysis aims, then, to develop these nine forms of analysis through differentiation into individual analytical steps and the formulation of interpretation rules concerning systematic content-analytical techniques.

6.2 Summarizing

The first two techniques try to reduce the material to core contents or aspects.

It is in the development of individual analytical steps for summary that one can rely largely on the support of previous studies. The psychology of text comprehension (Van Dijk, 1980; Ballstaedt, Mandl, Schnotz & Tergan, 1981) has described exactly how summaries usually proceed in everyday life. Central points are the distinction between ascending (text-bound) and descending (pattern-bound) processing and the formulation of macro-operators for reduction (see chapter 3.4).

The basic principle of a summarizing content analysis is then that the level of abstraction of the summary should be exactly determined in each case, so that the macro-operators can be used to transform the material precisely to that level. This level of abstraction can now be generalized upon gradually; the summary becomes increasingly abstract. A general content analytical process model for summarizing can therefore be diagrammed as follows:

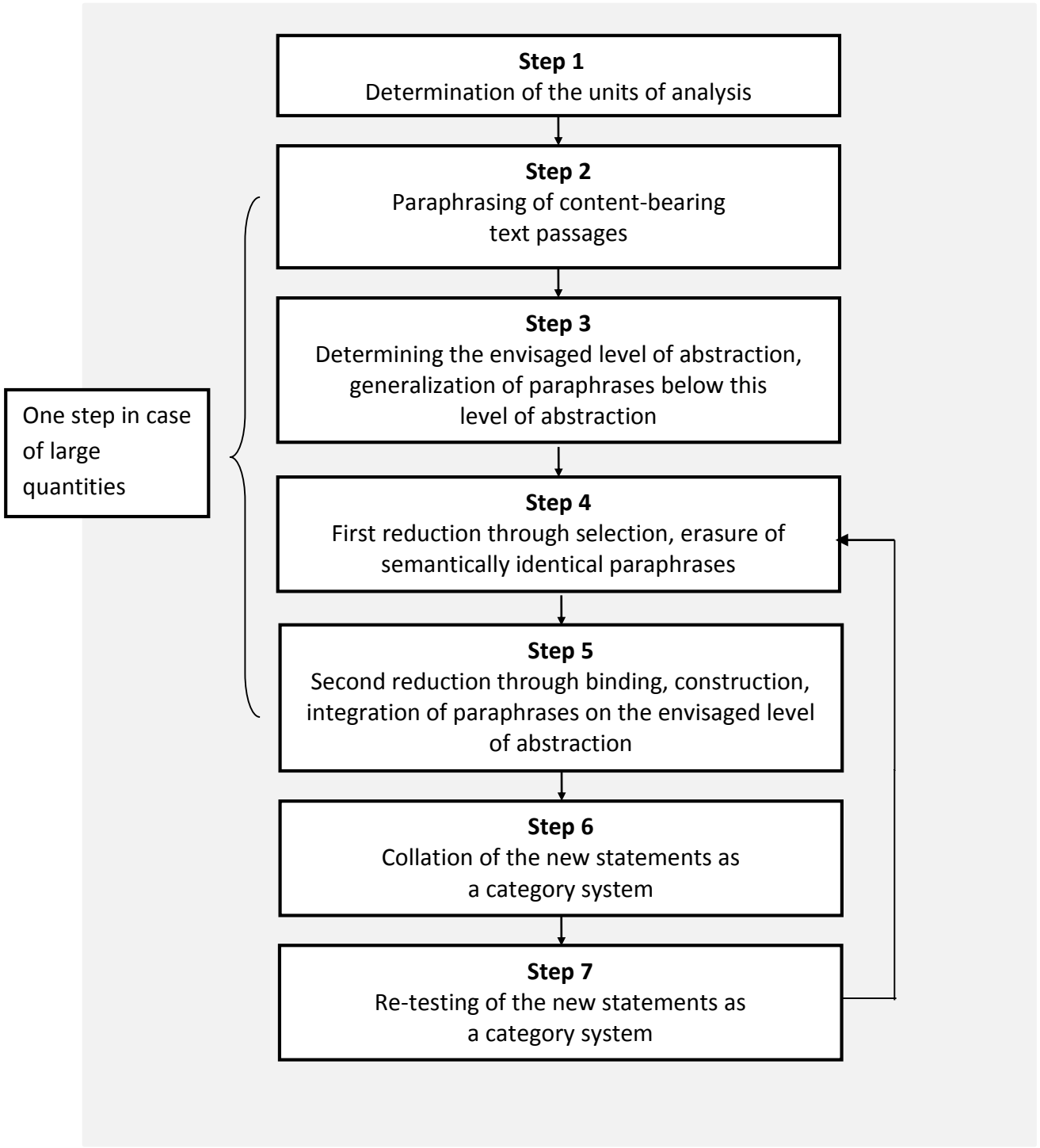


Figure 12: Step-by-step model of summarizing content analysis

The first steps, then, address themselves to describing the material exactly and determining what is to be summarized in the light of the problem involved. After this the analysis units must be determined (cf. chapter 4.5).

The individual coding units are now re-written in a short descriptive form which is confined to the content (paraphrasing). At this stage already, embellishing text components which add nothing to the content are omitted. The paraphrases should be formulated on a uniform stylistic level. This is

important especially when several different speakers are involved (e.g. in a group discussion). The final version should be a grammatically reduced one (for instance, "Yes, you see, at the time I didn't really feel any strain, basically" becomes "no strain felt") (cf. the S1 rules on the next page). Where the volume of material is not that large, these paraphrases are actually written in full; where this would be too complex or work intensive, the next two steps of analysis are applied simultaneously.

In the next step the intended level of abstraction of the first reduction is determined according to the nature of the material. All paraphrases below this level must now be subjected to generalization (generalizing macro-operator). At this point, as well as during further stages of reduction, cases of doubt must be resolved with the help of theoretical preconceptions. Paraphrases above the intended abstraction level are initially left as they are (cf. the S2 rules). This produces a few content-identical paraphrases which can now be cut. Similarly, insignificant and vague paraphrases can be omitted (omission and selection macro-operators) (cf. the S3 rules). In a second stage of reduction several paraphrases referring to one another and occurring passim throughout the material are summarized and expressed in a single new statement (binding, construction and integration macro-operators) (cf. the S4 rules).

At the end of this reduction phase exact checking must take place to ascertain whether the new statements collated as a category system really do still represent the base material. All original paraphrases from the first stages of treatment must be included in the category system. Even more thorough, of course, is a re-check of the summary by referring to the base material itself. The first run-through of the summary is now complete.

Often, however, a further summary is necessary. This is quite simple to carry out by raising the abstraction level higher still and re-applying subsequent interpretation steps. The result of this process is a new, more general and more brief category system, which again must be re-checked. This cyclical process can be applied repeatedly until the result corresponds to the intended reduction of the material.

If the volume of material is large, it is often impossible to paraphrase all the content-relevant parts of the text. In this case several analysis steps can be brought together as one. The text passages are then paraphrased to the intended abstraction level from the beginning. Before each new generalized paraphrase is written out, checks are made to ensure whether it is not included in those that have been made already, or related to them, so that it could be bound or integrated with them to form a new statement.

From this description of the model and the account of the above described macro-operators we can now draw up interpretation rules for the summary form of qualitative content analysis. They are related to the four points in the process at which the material is reduced:

S1: Paraphrasing

S1.1 Cut all the text components which are not content-bearing or only minimally so, such as embellishing, repetitive, or explanatory expressions.

S1.2 Transpose the content-bearing parts of the text on to a uniform stylistic level.

S1.3 Transform them into a grammatically abbreviated form.

S2: Generalization to the required level of abstraction

S2.1 Generalize the referents of the paraphrases to the defined level of abstraction, so that the old referents are implied in the newly formulated ones.

S2.2 Generalize the sentence kernels (predicates) in the same way.

S2.3 Leave those paraphrases standing which are above the intended level of abstraction.

S2.4 In cases of doubt make use of theoretical preconceptions.

S3: First reduction

S3.1 Cut semantically identical paraphrases within units of evaluation.

S3.2 Cut paraphrases which are not felt to add substantially to the content on the new level of abstraction.

S3.3 Adopt the paraphrases which continue to be thought of as vitally content-bearing (selection).

S3.4 Resolve cases of doubt with the aid of theoretical preconceptions.

S4: Second reduction

S4.1 Combine paraphrases with identical or similar referents and similar statements to form one paraphrase (binding).

S4.2 Combine paraphrases with several statements on the same referent into one (construction/integration).

S4.3 Combine paraphrases with identical or similar referents and differing statements into one paraphrase (construction/integration).

S4.4 Resolve cases of doubt with the aid of theoretical preconceptions.

Link to QCAmap software (www.qcamap.org):

Summarizing will be implemented within the software package in autumn 2014. The program leads you through the steps of analysis. A special screen is offered for the tabulation of paraphrases and reductions.

Example

For a demonstration of the summary form of qualitative content analysis using our sample material, the first central question is very suitable (cf. p. 59): "What are the main experiences of the unemployed teachers with ‘practice shock´?" The remarks of the four teachers on "practice shock" which take up 11 pages of the appendix (p. 125-135) will now be summarized in two reduction operations to a length of half a page.

The first thing to be made clear when determining the units of analysis is that with the summary form the recording unit and the context unit always coincide. In the case of our example this unit is in the first operation the individual case, and in the second the entire material. The coding unit, however, is conceived of more narrowly. This determines the units which form the basis of the summary as paraphrases in the first run-through of the material. In the example the coding unit is every complete statement by a teacher on experiences, assessment and effects of the postgraduate training phase compared with the theoretical part of the course at university.

In the following the first reduction operation will be described. The case number and page reference of the respective text passage is the first information to be given in the table. In the next columns the paraphrases of the content-bearing text passages are then portrayed and numbered consecutively.

The abstraction level of the first reduction run-through was determined as follows: statements relating to the postgraduate training phase in a form as general as possible, but case-specific ones (per teacher); in other words, statements by the teacher concerned about his entire postgraduate phase which summarize his experience of "practice shock".

In the center main column the individual paraphrases have been generalized to this abstraction level. Double statements, or insignificant ones, were eradicated for this column.

In the final column the remaining statements have been combined into new ones for each case through binding, integration and construction, and constitute the result of the first run-through. As they were the first category system, they were numbered.

Case	page	Paraphrase	Generalization	Reduction
A	125	P1: No psychological strain experienced through practice shock	No practice shock experienced as very enjoyable because	K1: Practical teaching not experienced as a shock, but as very enjoyable, because - previous teaching experience - country school without discipline problems - had no unrealistic expectations - had good relations to students K2: Without these conditions practice shock undoubtedly conceivable
A	125	P2: On the contrary, was very keen on teaching practice	Tended to look forward to teaching practice	
A	125	P3: University = purely academic course, little to do with teaching	At university teaching experience not part of course	
A	125	P4: Was able, however, to gather teaching experience beforehand	Prior experience of teaching	
A	125	P5: Practice was very enjoyable	Practice enjoyable	
A	125	P6: As far as subject matter was concerned, teaching was simple and fascinating for the students	Easily teachable subject matter as a condition	
A	125	P7: Had been waiting to begin teaching with some impatience	Had looked forward to starting to teach	
A	125	P8: But there are some dis-appointments about pupils not being what one thinks they should be	Disappointments too	
A	126	P9: Certainly not a practice shock	No practice shock	
A	126	P10: Workload not so heavy (at most in a branch of a school)	Low workload	
A	126	P11: Frustration of teacher at inner city school with possible discipline problems among students possible	Frustration of teacher at inner city school	
A	126	P12: Own efforts compensated for by enjoyment of teaching	Found the work enjoyable	
A	126	P13: Students still like me there	Had good relations to students	
A	127	P14: Am too realistic to have had wrong ideas about teaching	No unrealistic expectations	
A	127	P15: With 35 students and the amount of subject matter involved opportunity for educational work in any case low	Possibilities for educational work only low	K3: No practice shock, owing to flexibility, realistic attitude, adaptability and conversations with open colleagues

B	128	P16: No personal direct experience of practice shock	No practice shock	K4: Belief in getting by without disciplinary measures, just on the
B	128	P17: Positive "Here I come!" type of attitude at the outset	The feeling of being able to do it better at the beginning	
B	128	P18: Was even criticized for my teaching by another student teacher	The feeling of being able to do it better even with other students	
B	128	P19: Told him the "persuasive" method possible only in the rarest of cases	Illusion, as the "persuasive" method possible only in the rarest cases	strength of persuasion, an illusion, because - even experienced teachers have difficulties
B	128	P20: At the beginning I also said, "That can be done differently."	The feeling of being able to do it better at the beginning	- students expect disciplinary measures - large classes
B	128	P21: After some initial difficulties, managed to achieve a good relationship with my first class	Good relationship achieved with the class	- frequent change of class - relativity of educational values - good relation to students is also possible on a different basis
B	128	P22: Was not shocked	No practice shock	
B	128	P23: Took it as it came	Realistic and adaptable	
B	128	P24: Experienced teachers have the same problems, so no need to feel al failure	No feeling of personal failure, as other teachers also have problems	K5: Ski trips/sport/games can compensate for harsh image
B	128	P25: Few teachers admit their difficulties	Few teachers admit their difficulties	K6: Dilemma of trying out pedagogical behavior types and nevertheless remaining consistent
B	128	P26: Fellow teachers open and communicative		
B	128	P27: Talking to colleagues as the best solution to practical problems	Talking to colleagues as the best solution to practical problems	
B	128	P28: Not directly shocked	No practice shock	
B	128	P29: Am very flexible and always know how to react	Am flexible	
B	128	P30: Easy to talk about educational values with the benefit of hindsight	Educational values always controversial	
B	128	P31: Shouting often more useful than trying hard to persuade	Shouting often more useful than trying hard to persuade	

B	128	P32: With large classes often forced into doing questionable things	Large classes make pedagogical behavior difficult	
B	128	P33: Students want something done	Students want measures taken	
B	129	P34: Could never imagine doing such a thing	An illusion to imagine getting by without disciplinary measures	
B	129	P35: One acquires a catalogue of possible reactions to discipline problems	One acquires discipline catalogue	
B	129	P36: One should try out different methods during postgraduate training	One should try things out	
B	129	P37: Have tried "banging on the table" and it has had short-term effects	Have tried disciplinary methods successfully	
B	129	P38: Tried out tips like this, worked on myself	Have tried disciplinary methods successfully	
B	129	P39: This must be pushed through, because the class allows no retreat	Pressure to be consistent	K7: Practice shock a great problem owing to obligation to adapt to ideas of seminary instructors in order to acquire good grades; gnaws at self-confidence and own ego K8: Perhaps due to - greater sensitivity - not a grade-one candidate - not a "conferencier" type - not very adaptable
B	129	P40: That is a dilemma	Caught between experimentation and consistency	
B	129	P41: A lot learnt about behavior towards students	Learnt how to deal with students	
B	129	P42: Had good relations with students	Had good relations with students	
B	129	P43: On school skiing trips, and often in games classes too, one has a completely different relationship with students	Ski trips/games classes different relationship	
B	129	P44: Geography more difficult, as fewer hours of lessons	Difficult when fewer lesson hours	
C	130	P45: Practice shock as a great problem	Practice shock as a great problem	
C	130	P46: Dependency on seminary teacher initially dominant	Dependency on seminary teacher	

C	130	P47: First of all viewed classes as gloomy affairs, as it all could be done differently	Initially the feeling that it could be done differently
C	130	P48: These ideas cannot be realized during postgraduate training	This is not realizable
C	130	P49: One wants to be assessed as positively as possible	Dependency on evaluation of performance
C	130	P50: That causes conflict	Causes conflict
C	130	P51: Anything the seminary teacher feels to be inappropriate cannot be done	Pressure to conform to seminary teacher
C	130	P52: One has to conform to the seminary teacher from the outset	Pressure to conform to seminary teacher
C	131	P53: Am not the type to run through schematic rules immediately	Not the type to solve all problems schematically
C	131	P54: When one seeks relation-ships to students reactions often occur in one which do not conform to official stipulations	Own ideas often deviant
C	131	P55: In this one is frequently wrong in one's assumptions	Often false ideas
C	131	P56: It may be that I am more than usually sensitive in that direction	Much more sensitive
C	131	P57: Other teacher trainees have seen it that way too, though	Others feel the same way
C	131	P58: Permanent awareness of the need to get as good a grade as possible	Pressure for good assessment from seminary instructor
C	131	P59: People try for all they're worth to get as good a grade as possible	Pressure for good grades
C	131	P60: Pressure to conform	Pressure to conform

C	131	P61: This could improve in future owing to low chances of employment	Maybe better in future	
C	132	P62: Has been a permanent problem	Permanent problem	
C	132	P63: Preyed upon my mind	Preyed upon my mind	
C	132	P64: Psychologically no longer able to undergo repeat examination	Therefore no longer able to take repeat examination	
C	132	P65: I won't manage a grade one	Not a grade one candidate	
C	132	P66: Has worn down self-confidence	Self-confidence worn down	
C	132	P67: Has never doubted own ideas of ability to deal with children	No self-doubts, however	
C	132	P68: Emaciates, gnaws at one's own ego	Gnaws at one's own ego	
C	133	P69: Some people who have more teaching ability are not bothered by this at all	Other people are less bothered	
C	133	P70: People who do everything they are told	Conformists are less bothered	
C	133	P71: May be too fine a point	May be too fine a point	
C	133	P72: People who are more lively, more sociable, have new ideas and criticize in a witty manner ("master-of-ceremonies"-types) are very popular	"Master-of-ceremonies"-types are less affected	
C	133	P73: Is, however, a question of mentality, cannot be made into a yardstick	Cannot be made into a criterion	K9: Great practice shock because - lack of practice - seen by students as only a trainee - criticism of seminary instructors destroys self-confidence and creates great pressure K10: Only gradually learnt to deal with class without chaos
D	134	P74: Had low pedagogical/ideo-logical expectations myself	Had no preconceived ideas	
D	134	P75: Hoped simply to do a good job	Hoped simply to do a good job	
D	134	P76: Didn't work out nevertheless	Didn't work out nevertheless	
D	134	P77: Had no practice	No practice	

D	134	P78: Only accepted by the pupils as a teacher, not as a human being	Only accepted by pupils in the role of a teacher
D	134	P79: This is also due to the number of teacher trainees the children are exposed to	Too many teacher trainees
D	134	P80: Pressure from seminary instructors	Pressure from seminary instructors
D	134	P81: Do you down with criticism	Pressure through criticism
D	134	P82: More or less no self-confidence	Self-confidence destroyed
D	134	P83: Self-assuredness and authority thereby difficult to maintain in class	Stance in the class made difficult
D	134	P84: Insoluble conflict	Insoluble conflict
D	134	P85: Chaos in the class in seminary training school	Initially chaos
D	134	P86: Branch school better	Branch school better
D	134	P87: Knocked the stuffing out of me	Knocked the stuffing out of me
D	134	P88: Came out feeling very small	Self-confidence destroyed
D	135	P89: Positive experiences destroyed through criticism of seminary instructors	Positive experiences destroyed by seminary instructors
D	135	P90: You have the feeling that what you did was only a heap of trash	Self-confidence destroyed
D	135	P91: After a time got on well with the class after all	After a time got on well with the class
D	135	P92: This was not accepted by the seminary instructor	Not accepted by seminary instructor
D	135	P93: Chaos at the beginning	Chaos at the beginning
D	135	P94: Shock at seminary instructor	Shock at seminary instructor
D	135	P95: Shock at the boisterous classes	Chaos at the beginning

D	135	P96: Didnt't manage to assert myself, quieten class down for lesson	Chaos at the beginning	
D	135	P97: This entails use of a certain method which must be learnt	Getting on with the class is something one can learn	

With the 10 categories of the right-hand column complete, we have now finished the first summary. In a second run-through these categories should be further reduced. In order to achieve this, the level of abstraction is raised. The statements are now intended to transcend the single case, no longer portraying the assessments of the individual teacher, but being generalized to an overall evaluation of the postgraduate training phase with its "practice shock". Certainly, such a generalization on the basis of just four case studies is not entirely justified content-wise, but it will nevertheless be carried out here for purposes of demonstration.

Case	Category	Generalization	Reduction
A	K1: Practical teaching not experienced as a shock, but as very enjoyable, because - previous teaching experience; - country school without discipline problems; - had no unrealistic expectations; - had good relations to students	No practice shock if: - previous teaching experience - good conditions - no unrealistic expectations Good relations to students possible	**K'1:** No practice shock occurs, if one - has had prior teaching experience; - has favorable training conditions in the postgraduate phase; - is flexible and adaptable; - communicates openly with colleagues; - has no "unrealistic" pedagogical expectations (illusion of simple persuasion techniques).
A	K2: Without these conditions practice shock undoubtedly conceivable	Otherwise practice shock	
B	K3: No practice shock, owing to flexibility, realistic attitude, adaptability and conversations with open colleagues	No practice shock if - flexible and adaptable; - conversations with colleagues	

B	K4: Belief in getting by without disciplinary measures, just on the strength of persuasion an illusion, because - even experienced teachers have difficulties; - students expect disciplinary measures; - large classes; - frequent change of class; - relativity of educational values; - good relation to students is also possible on a different basis	No practice shock if illusion of being able to get by without disciplinary measures is given up Good relations to students possible	**K'2:** Practice shock can reduce and strain self-confidence considerably, if - no practice was experienced beforehand; - destructive criticism and obligation to adapt to seminary instructor are not "taken in stride"; - one is not completely convinced of oneself
B	K5: Ski trips/sport/games can compensate for harsh image	Harsh image can be compensated for	**K'3:** A good relationship with students can always be attained
B	K6: Dilemma of trying out various pedagogical behavior strategies and nevertheless remaining consistent	Dilemma of trying out various pedagogical behavior strategies and nevertheless remaining consistent	**K'4:** Wanting to try out pedagogical behavior strategies and still remaining consistent in one's treatment of the class presents a dilemma
C	K7: Practice shock a great problem owing to obligation to adapt to ideas of seminary instructors in order to acquire good grades; gnawed at self-confidence, own ego	Being forced to adapt to seminary instructor can damage self-confidence	
C	K8: Perhaps due to - greater sensitivity; - not a grade-one candidate; - not a "conferencier" type; - less adaptable	Self-confidence in danger, - if more sensitive; - if not completely convinced of oneself; - if less adaptable	
D	K9: Great practice shock because - lack of practice; - seen by students as only as trainee; criticism of seminary instructors destroys self-confidence and creates great pressure	Practice shock, if - lack of practice; - lack of reputation among students; - destructive criticism by seminary instructor	
D	K10: Only gradually learnt to deal with class without chaos	Dealing with class can be learned	

The re-testing of the categories by applying them to the base material showed itself to be fairly representative. The purpose of summarizing qualitative content analysis is thereby fulfilled: viz., to reduce a large volume of material to a manageable level, but in so doing retaining the essential content. This reduction process can also be portrayed quantitatively; the breadth of the rectangles in the following is intended to represent the volume of material.

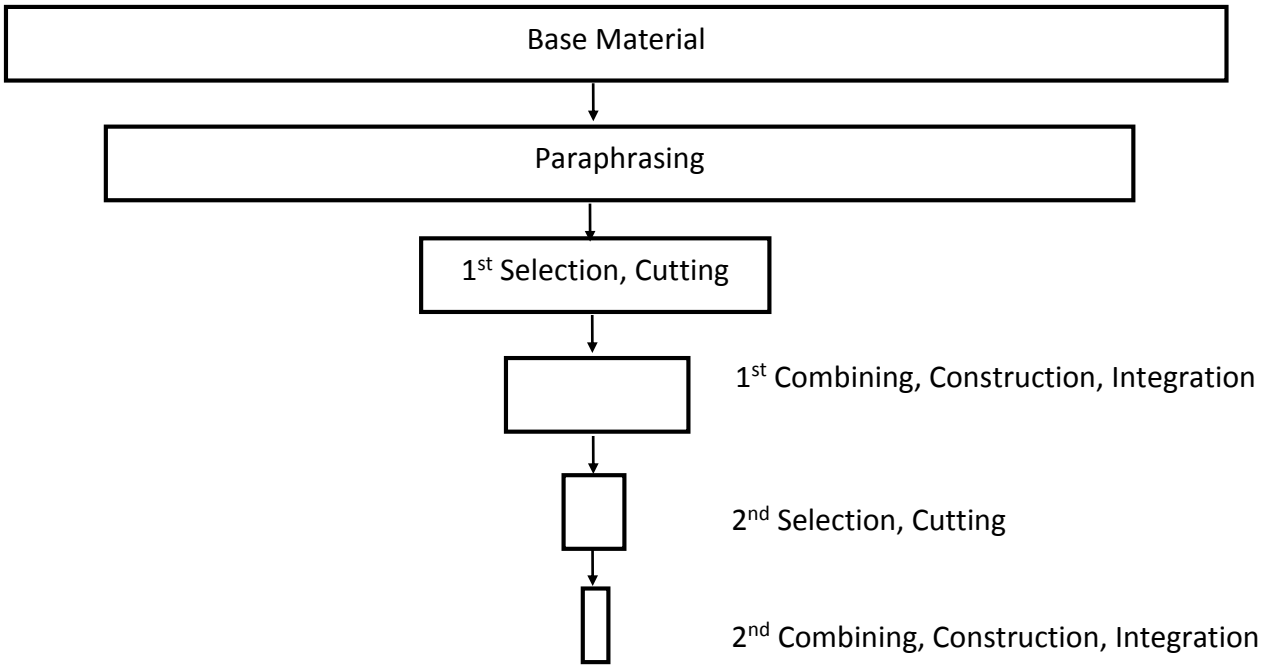


Figure 13: Material reduction through summary

6.3 Inductive Category Formation

Even if the reduction of the material with summarizing content analysis is impressive, the procedure is very extensive. Compiling those summarizing tables need nearly as much pages as the basic material. A second disadvantage of summarizing is that you have to consider all material, even if it is not relevant to the research question. Material for qualitative content analysis often stems from open-ended interviews, and those interviews sometimes wander away from the subject, what is tolerated because of a good relationship. Or the relevant content for the specific research question occurs at different points of the material.

So we developed a faster and more economic and more specific procedure in this context which we called inductive category assignment. The logic of summarizing, the theoretical background and plenty of rules are the same as summarizing content analysis, with three exceptions:

- Not all material is regarded for analysis. Only those parts relevant for a specific research questions are considered. For this selection process a rule of selection is formulated.
- The step of building paraphrases is skipped.
- The level of reduction is defined in advance, so that the category formulation can directly jump to this level.

So the aim is to arrive at summarizing categories directly, which are coming from the material itself, not from theoretical considerations. In so far the procedure can be called inductive category formation.

For qualitative content analysis this procedure is very fruitful. We have heard, that category definition is a central step in content analysis, a very sensitive process, "an art" (Krippendorff, 1980; cf. chapter 4). The inductive ongoing has great importance within qualitative research (cf. chapter 4). It aims at a true description without bias owing to the preconceptions of the researcher, an understanding of the material in terms of the material.

Inductive category formation is a central process within the approach of Grounded Theory (Strauss, 1987; Strauss & Corbin, 1990), which in this context is called "open coding". They developed a lot of rules of thumb for open coding; they recommended a systematic, line by line procedure. For content analysis, nevertheless, inductive category formation has to be more systematic. And it can use the same logic, the same reductive procedures, as in summarizing content analysis. The following process model (fig. 17) will now be explained.

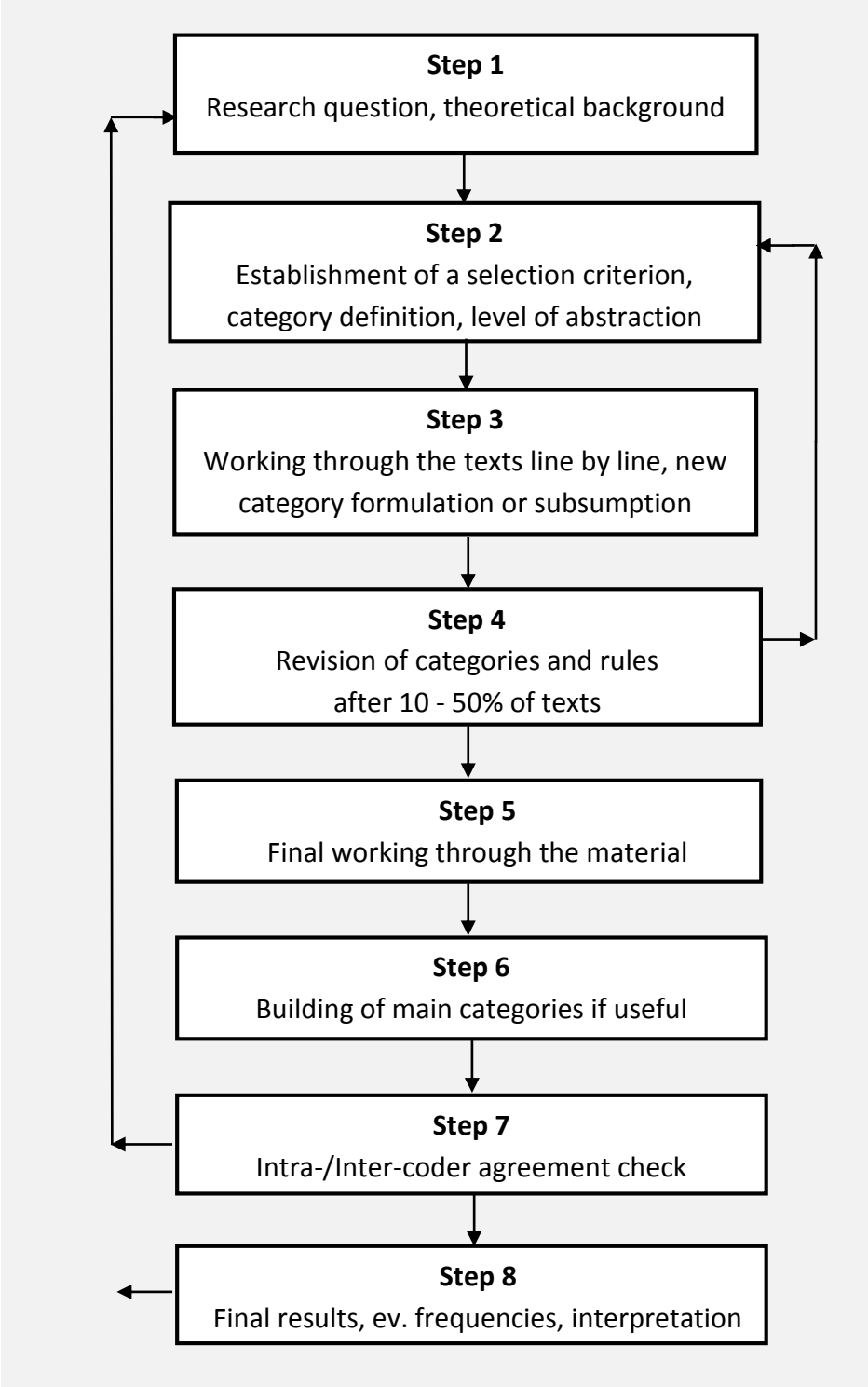


Figure 14: Steps of inductive category development

Within the logic of content analysis, the level or theme of categories to be developed must be defined previously. There has to be a criterion for the selection process in category formation. This

is a deductive element and is established within theoretical considerations about the subject matter and the aims of analysis.

After this is decided, the material is worked through line by line. The first time, material fitting the category definition is found, a category has to be constructed. A term or short sentence, which characterizes the material as near as possible (e.g. formulations if possible out of the material) serves as category label.

The next time a passage fitting the category definition is found it has to be checked, whether it falls under the previous category, then it can be subsumed under this category (a reductive process); if not a new category has to be formulated.

After working through a good deal of material (ca. 10 - 50 %) no new categories are to be found. This is the moment for a revision of the whole category system. It has to be checked, if the logic of categories is clear (e.g. no overlaps) and if the level of abstraction is adequate to the subject matter and aims of analysis. Perhaps the category definition has to be changed.

If there are any changes in the category system, of course the complete material once again has to be worked through.

Usually the level of abstraction is defined in a manner that fits best to the research question, and this is tested within the pilot phase (step 4). If too many categories had been formulated so that a clear picture of the object area does not occur, the level of abstraction should be defined more general. As a rule of thumbs, a set of ten to thirty categories gives a good overview. But sometimes it would be interesting to bring this set of categories into an order by formulation main categories. This step could be processed more inductively by only enhancing the level of abstraction in the sense of summarizing. It could be processed more deductively by introducing theoretical considerations in formulation main categories.

Link to QCAmap software (www.qcamap.org):

On the project page in QCAmap, a link to “Analysis” can be seen. Clicking on this link you can formulate main categories and subsume the inductive categories to those new main categories.

After this analysis we have a set of categories to a specific topic, connected with specific passages in the material. The further analysis can go different ways:

- The whole system of categories can be interpreted in terms of aims of analysis and used theories.

- The links between categories and passages in the material can be analyzed quantitatively. E.g. we can have a look at those categories occurring most frequently in the material.

Link to QCAmap software (www.qcamap.org):

For inductive category formation the software offers three outputs (a link on the project page named “Analysis”) as Excel-files: A list of all coded text passages, a list of all categories with frequencies and percentages (for an example see Table 5), and a table of categories per cases.

So the procedure rules for the single steps of inductive category formation (= I), based on summarizing, (cf. chapter 6.2) are the following:

I1: Research question

I1.1 Formulate a clear research question (not only a topic)!

I1.2 Describe the theoretical background (theoretical position, previous studies)!

I1.3 The research question must fit an inductive logic, that means it must be explorative or descriptive in its nature.

I2: Category definition and level of abstraction

I2.1 The category definition serves as selection criterion to determine the relevant material from the texts; it has to be an explicit definition, theoretical references can be useful.

I2.2 The level of abstraction defines, how specific or general the categories have to be formulated. Both rules (category definition and level of abstraction) are central for inductive category formation. They have to be defined in advance and can be altered within the pilot phase.

I3: Coding the text

I3.1 Read the material from the beginning, line by line, and check if material occurs that is related to the category definition! All other material is ignored within this procedure.

I3.2 Formulate a category near to the text at the level of abstraction!

I3.3 If the next passage fits the category definition, check if it can be subsumed to the first category or if a new category has to be formulated, and so on!

I4: Revision

I4.1 A revision in the sense of a pilot loop is necessary, when the category system seems to become stable (only few new categories).

I4.2 Check if the category system fits the research question! If not, a revision of the category definition would be necessary.

I4.3 Check if the degree of generalization is sufficient! If you have formulated only few categories, maybe the level of abstraction is too general. If you have formulated a huge amount of categories maybe the level of abstraction is too specific.

I4.4 If you have changed the category definition and/or the level of abstraction, you have to start the analysis from the beginning of the material!

I5: Final coding

I5.1 The whole material has to be worked through with the same rules (category definition and level of abstraction).

I6: Main categories

I6.1 At the end of this process you have a list of categories. You can group them and build main categories, if useful for answering the research question.

I6.2 Follow the rules of summarizing qualitative content analysis (see book chapter 6.2) for this step!

I7: Intra-/intercoder check

I7.1 Start coding from the beginning of the material and compare the results (intra-coder agreement) (see book chapter 7 for this step)!

I7.2 Give the material (or parts of it) to a second coder and compare the results. If the explorative character of the study is predominant, give him or her only the text. If the frequency distribution of the categories should be tested, give him or her your categories as well.

I7.3 You should discuss the results and decide which coding is adequate (following the rules). Only if the second coding is held as better coding, this is counted as disagreement.

I7.4 If you change the better coding for analysis you can enhance reliability (not always possible).

I8: Results

I8.1 The result (of course after checking quality criteria like inter-coder agreement) is at first the list of categories and maybe main categories.

I8.2 If categories had been found in respect to several text passages (many subsumptions) a frequency analysis of the category occurrences could be useful.

I8.3 The category system and eventually the frequencies have to be interpreted in the direction of the research question.

Example (resuming the project from chapter 5)

There is a distinct research question related to the interviews (appendix) which would allow a more economic procedure of text analysis taking into account only those text passages which relate to

the research question (in contrary to summarizing content analysis which has to consider all material):

Description of stress factors in first praxis experiences: First professional experiences, especially for teachers, are often described as "praxis shock" (Smagorinsky et al. 2004; Mueller-Forbrodt, 1978). We want to describe the concrete stressing factors.

Because the scope of analysis is more explorative we do not have a preformulated set of categories. This is a case for inductive category development.

We define the content-analytical units:

Coding unit: Clear semantic elements in the text

Context unit: The whole interview, interviewer protocol and background material

Recording unit: All four interviews (A to D)

The category definition is formulated as: Stressful experiences in and around teaching, experiences of harm, loss or challenge which are not automatically coped with (Lazarus).

The level of abstraction is: Concrete stress factors for the person, connected with negative experiences, no general evaluations of the situation, in a form that can occur as well in other interviews (no idiosyncratic formulations).

These are the codings and the text passages:

B1: Disappointments about students

“Certainly, there are disappointments that the students are not as one thinks they ought to be.” (Case A)

B2: Little time for education

“what comes out at the end is very little, because 45 minutes, 35 students, that means for each student I've got a time ration" of about one minute." (Case A)

B3: Difficult students

“with the class I had initially, eighth graders, a bit of a difficult lot” (Case B)

“I've got problems with this or that student” (Case B)

B4: Problems in very large classes

“I always had very large classes, you see, in geography above all, 30 was the smallest number, but I often had around 38, and that's, I mean, then there really are situations arising which cause problems” (Case B)

B5: Being forced to authoritarian behaviour

“you're really forced then to do things, act in a way that - (laughs) to be really honest - I could never have imagined”

B6: Dependence on seminar instructor

“dependence on the seminary instructors” (Case C)

“somehow looking to get assessments which were as good as possible” (Case C)

“you have to fit in from the beginning with what the seminary instructor has in the way of ideas and policies” (Case C)

“the pressure from seminary instructors... That you, they make you feel so small, everything - every word, every gesture, everything. Whoever you are, they'll first destroy you through criticism. All they do is criticize, that was the case with me.” (Case D)

B7: Conflicts with concepts different to the ones in mind of the seminar instructor

“A plan or an idea of how he can best fulfil the expectations of the seminary instructor and that of course leads to a conflict situation” (Case C)

B8: Forced by seminar instructor to apply mechanical rules

“Oh yes, it was, because I didn't, because I'm not really the type that can apply mechanical rules” (Case C)

“How can that sort of thing be assessed (laughs) or made into a yardstick?” (Case C)

B9: Critique by seminar instructor impacts negatively on self-esteem

“it eats away at you, and for that reason - makes inroads into your self-esteem” (Case C)

“they make you feel so small, everything - every word, every gesture, everything. Whoever you are, they'll first destroy you through criticism. All they do is criticize, that was the case with me. And then you are, your self-confidence is zero-level” (Case D)

“And you thought, my God, what am I? Your self-confidence..that all you'd done the whole year was apparently nothing but rubbish, that nothing you'd ever done was correct. That's the feeling you have.” (Case D)

B10: Lack of experiences in teaching

“No! (laughs). It didn't work. I mean, let's put it this way: these pragmatic demands, expectations, they're in any case a bit, they're rather petty, unimportant, not even they worked. And the reasons were a) because one has had no experience” (Case D)

B11: Inferior teacher role as trainee

“The children in a seminary school like that always say, aha, here comes another new teacher trainee.” (Case D)

B12: To calm down an agitated classroom when left alone without seminar instructor

“When we were left alone the first time, without a seminary instructor sitting at the back, they went mad, all hell was let loose and (laughs) that was the first shock, how to go about imposing your will on the class for the first time.” (Case D)

So we arrived at twelve inductive categories which can describe very well the stress situation of the teacher students.

Some text passages at first glance seem relevant for coding; but a further look at the content-analytical rules excludes them. This is the case in the middle of the first interview (Case A):

> "If you're at a school, for instance an inner city school where you've got discipline problems, where the students just – are completely different personality-wise, then maybe you do get somehow frustrated as a teacher. But in my case…"

The person is speaking about stress factors, but not for himself, and this was part of the category definition, so no coding is made.

Other text passages indicate stress for the person, but the formulation is too general, unspecific and so could not be coded (Level of abstraction!), for example in case B:

> "and if anything shocking really happened, then –"

If you have coded more material, more interviews, then a frequency analysis of the coded inductive categories can make sense. It would be interesting, which categories occur most frequently and so represent the most imminent stress factors. A next step could be to compare the most frequent categories between different groups of persons (e.g. female and male). Crosstabs could be calculated and tested if certain persons show significant differences in the occurrence of certain categories. For example we could ask whether the category B6 (Dependence of the seminar instructor) is mentioned more often by younger teacher students.

The results can be displayed in a table, ordering the categories following the frequency of their occurrences in the material. Two aspects on category frequencies would be interesting: the absolute number of category occurrences within the material, and the number of different texts or persons (in the case of interviews, in our example: 4 persons) in which the categories had been coded. The frequencies can be displayed in absolute numbers and in percentages. For our short example the resulting table would be like this (Table 5):

Table 5: Category frequencies within the example

Category	**N of C**	**% of C**	**N of P**	**% of P**
B6: Dependence on seminar instructor	4	21%	2	50%
B9: Critique by seminar instructor impacts negatively on self-esteem	3	16%	2	50%
B3: Difficult students	2	11%	1	25%
B8: Forced by seminar instructor to apply mechanical rules	2	11%	1	25%

B1: Disappointments about students	1	5%	1	25%
B2: Little time for education	1	5%	1	25%
B4: Problems in very large classes	1	5%	1	25%
B5: Being forced to authoritarian behaviour	1	5%	1	25%
B7: Conflicts with concepts different to those of the seminar instructor	1	5%	1	25%
B10: Lack of experiences in teaching	1	5%	1	25%
B11: Inferior teacher role as trainee	1	5%	1	25%
B12: To calm down an agitated classroom when left alone	1	5%	1	25%
∑	19	100%	4	--

Note: Row 1 categories ordered by frequencies; row 2 number of occurrences, row 3 percentage of all codings; row 4 number of persons; row 5 percentage of all persons

This gives a good overview of the different problems experienced by the teacher students. Most interesting for interpretation would be those categories with many occurrences (the first four in table 5). It would be legitimate to display a table only with those categories occurring in several text passages, to formulate a cut-off criterion.

To formulate main categories within the list of twelve categories could make sense. In this example a more inductive way could lead to three main categories:

B'1: Problems in relationship to students (B1, B3, B5, B10, B12)

B'2: Structural conditions (B2, B4, B11)

B'3: Seminar instructor (B6, B7, B8, B9)

6.4 Explication (Context Analysis)

Whereas the goal of summarizing content analysis and inductive category formation was the reduction of the material, the tendency of explication is exactly the reverse. Individual parts of text in need of interpretation are enriched by additional material aimed at explaining them, making them comprehensible, subjecting them to comment and illustration.

The basic idea behind explication as a qualitative content-analytical method is that it precisely defines which additional material is permissible to explain a certain point in the text. For the quality of the interpretation depends on the material chosen.

Every interpretation must have as its basis a lexical-grammatical definition; the meaning of language, within its cultural context and in its respective current forms, is continually portrayed in dictionaries and other works of reference; sentence structures are determined in grammars. Knowledge of this general lexical-grammatical character of the particular point of the text concerned is the precondition for the interpretation of it.

However, the analysis takes on a particular interest and importance when the speaker deviates from this general usage and starts conferring on language items his own specific personal meanings, or expresses himself in an unclear or incomplete manner. In this case, the analyst must resort to the context in which the utterance occurs. Techniques of explication vary according to how broadly this context is defined.

Thus Volmert (1979) differentiates on this point between spatially restricted textual emphasis (i.e. the direct references in the text), and spatially extensive emphasis (which takes account of factors such as information already given, background knowledge, the horizon of comprehension, but equally the behavioral context, the non-verbal context and the situational context of the portion of text to be interpreted). Van Dijk (1999; 2007) has introduced the concept of mirco context and macro context (see chapter 3.3).

In this connection we shall distinguish here between a narrow and a broad contextual analysis. The interpretation objective must then be, on the basis of the contextual analysis, to arrive at a statement so phrased that it constitutes a key to understanding the portion of text in question. It can then be established within the total context of the material whether this explication is sufficient or not. On the basis of these considerations we will now formulate and explain a general procedural model of interpretation (Fig. 15).

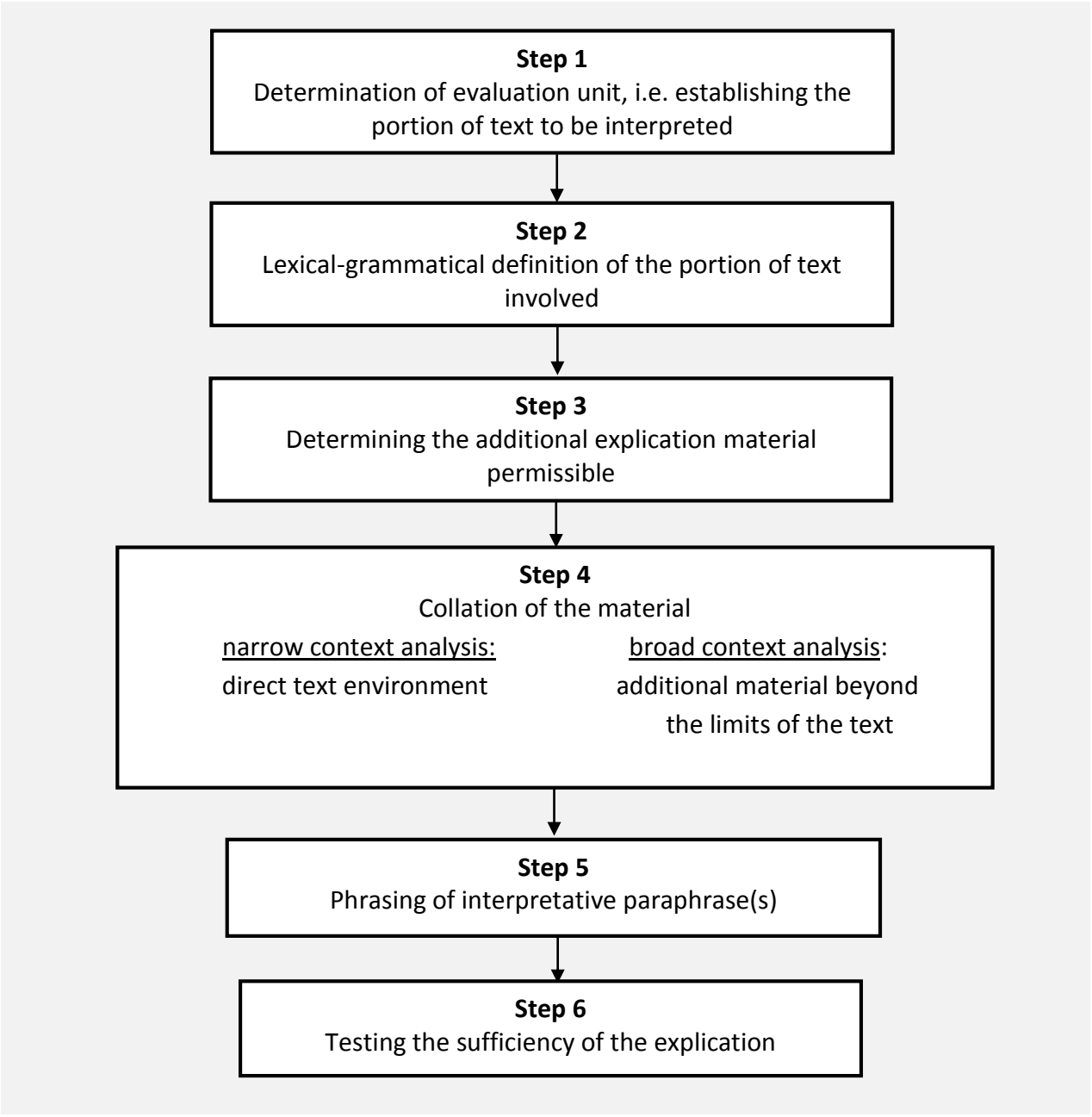


Figure 15: Procedural model of explicational content analysis

The starting point of explication is the exact definition of the portion of text to be interpreted (Step 1). The definition depicts the evaluation unit of the analysis. The determination of the encoding unit coincides here with the contextual unit, as what is to be used as context material is encoded during the explication. This does not occur, however, until later in the analysis.

The second step examines whether the portion of text can be interpreted through grammatical analysis or on the basis of lexical meaning alone. In this connection it is important to consider which grammars and reference dictionaries of the respective linguistic and socio-cultural environment are relevant to the task. The translation of a text or passage, which in the widest sense could also be understood as explicational content analysis, would already be completed during this stage of the proceedings.

As a rule, however, this is not sufficient for the proper explication. Thus in the third step it must be determined what additional material is to be allowed for the interpretation. The rule here is that one proceeds from the narrowest context to successively broader ones.

During the collating of material that now follows (Step 4) a distinction must be drawn between narrow and broad contextual analysis.

Narrow contextual analysis admits only material taken from the text itself. Passages which are directly related to the particular passage in question are collected from the whole text.

Such passages can stand in

- defining, explanatory,

- embellishing, descriptive

- exemplifying, itemizing,

- correctional, modifying,

- antithetical or contradictory

relationship to the passage in question.

In addition, the narrow context analysis examines whether the passage to be explained occurs in similar or identical form elsewhere in the material. If so, the narrow textual context at that point is also included for analysis. Material going beyond the actual text is then collected for the broad context analysis. Such material may include information on the author of the text (cf. point 4.6, Definition of base material), or information on the conditions of origin of the text (cf. point 4.6). But interpretatory material may also be derived from preliminary theoretical conceptions (cf. point 4.6, Theory-bound differentiation of the issue). The broadest form of context analysis permits use of the entire background understanding of the analyst(s) in the interpretation. This can go as far even as the analyst's using free association on the contents in the passage concerned (cf. the second example of a qualitative analysis of biographical documents in Gstettner, 1980). In the case of such explication material, certainly, its relevance and relation to the text passage must be justified precisely.

The next step (Step 5) then consists of constructing a statement which explains the passage in question. An explicative paraphrase of this kind usually comes about through the summarizing of the collected material (cf. the rules of summary). If inconsistencies occur in the material, however, it is necessary to formulate alternative paraphrases.

In the last stage (Step 6) the paraphrase (or the alternative paraphrases) is positioned in the text at the place of the passage to be interpreted, to test in the overall context whether a sensible explication has been attained. If this is not the case, new explication material must be decided upon and a new run-through of the context analysis carried out.

From this description of the procedural model we can now draw up interpretation rules for explicating content analysis:

E1: Lexical-grammatical definition

E1.1 Determine the dictionaries and grammars relevant to the linguistic and socio-cultural background.

E1.2 Then analyze the lexical and grammatical meaning of the passage.

E1.3 Examine whether this already explains the passage adequately.

E2: Determination of the explication material

E2.1 Begin with the narrowest textual context, i.e. with the immediate environment of the passage in the text which has to be explained.

E2.2 Proceed to successively broader contexts if the check on the explication was not satisfactory.

E3: Narrow context analysis

E3.1 Collate all the statements in the immediate textual context which are directly related to the passage in question, i.e. in a

- defining, explanatory,
- embellishing, descriptive
- exemplifying, itemizing,
- correctional, modifying,
- antithetical or contradictory

manner.

E3.2 Check whether the passage to be explained occurs elsewhere in identical or similar form and if so examine the immediate textual environment of the places where it occurs.

E4: Broad context analysis

E4.1 Check whether further explanatory material is available on the author of the passage.

E4.2 Include material on the situation of the origin of the text in the explanatory process.

E4.3 Check whether explicational material can be derived from preliminary theoretical considerations.

E4.4 On the basis of your own general background of understanding check whether further material should be included or not.
E4.5 Explain the relevance, the relation of the material collected to the passage in question.

E5: Explicational paraphrase

E5.1 Summarize the material gathered for explication (cf. summary) and formulate from it a paraphrase for the passage in question.
E5.2 If the material is inconsistent or contradictory formulate several alternative paraphrases.

E6: Checking the explication

E6.1 Insert the explicatory paraphrase in the material in place of the passage in question.
E6.2 Check whether, in the overall context of the material, the passage is now appropriately expressed.
E6.3 If the explication does not appear adequate, decide on new explication material and run through the analysis again (from Step 3).

This will now be demonstrated using the example.

Example

In our sample material there is a passage which even in the summary appeared rather unclear. This is where Case C (see page 133 in the appendix) reports that he is not a "master-of-ceremonies" type and therefore somehow had a harder time during postgraduate training. This conception of the "master-of-ceremonies-type", the meaning of which appears at first sight rather obscure, will now be used to initiate an explicational content analysis.

Step 1: The passage to be explained is clearly marked: the problem revolves around the term "master-of-ceremonies-type" on page 8.

Step 2: In order to determine the lexical meaning it is necessary to consult relevant works of reference, i.e. modern dictionaries of Standard English [in the original: "of High German", trans. note]. The entry under "master-of-ceremonies" [in German "Conferencier", trans. note] lists, for instance, the following definitions: "Announcer on a small variety stage" (dtv-dictionary, vol. 3, 1966, p. 168) or "(witty and entertaining) announcer in cabaret, variety, at public and private functions" (Meyers Grosses Taschenbuchlexikon, vol. 5, 1981, p. 5).

However, such definitions do not help us very much to understand the term in the material context.

Step 3/Step 4: For the determination of permissible additional material we can refer first of all to the direct textual environment. The phrase within which the term was used is:

"I´d say it's very important, especially in sport, and I'm certainly not the type, not at all, no - well, I wouldn't quite say extrovert, but the more lively you are personally, in speaking or dealing actively with adults, or constantly - having new ideas or even making the odd criticism of seminary instructors, but in a witty or jocular way, more a "master-of-ceremonies" type; they are a great success, I believe. ... But that of course is a question of mentality. How can that sort of thing be assessed (laughs) or made into a yardstick?"

(Case C, p. 133)

The descriptive features mentioned here are:

- extrovert (?);
- lively when they speak;
- lively way of associating with adults;
- always having new ideas;
- express criticism of seminary instructor, phrased as a joke or witticism.

So one could say that a "master-of-ceremonies-type" is an extroverted, lively, witty person.

A further passage also seems to relate to this concept, which occurs in the script shortly beforehand: “Although it varies according to what type you are, I think. Some are not so bothered, they put on more of a face, they regard it more as, let's say you could see it this way, that the educational qualities they already have, though I'd put "educational qualities" in inverted commas, that they say to themselves, well, it has to be done like that, it has to be done like that, and then they do it like that. And if they're lucky it goes well for them, precisely because they've done it like that, and that's all right, isn't it." (Case C, p. 133)

Although the statement is a little confused, new descriptive features start to emerge:

- plays more;
- seems to bring the "pedagogical" abilities with him;
- always knows what is to be done;
- behaves accordingly always;
- is assessed well because of that.

The first statement about "playing" seems particularly important to me, although it is not enlarged on any further. This may explain the negative undertone of the remark about what essentially are very positive personality features. By "playing" the speaker probably means something along the lines of "playing a role", "having a trick up one's sleeve" to help one manipulate the situation to one's best advantage, thus in essence being "dishonest", i.e. simply play-acting.

This meaning also tends to correspond more to the lexical meaning, for a master-of-ceremonies is connected with acting in the theatre.

The remarks following from this second passage all tend in the direction of a person convinced of himself and his own worth.

Step 5: If these personal features are summarized in explanatory form, what we have on the one hand are:

- extrovert
- lively
- witty
- self-confident

and on the other: the feature "acting a part". Thus we can say that a master-of-ceremonies is someone who plays the role of an extrovert, lively, witty, and self-confident person.

Step 6: For purposes of checking, this interpretation must be placed in the context of the material. The context is to be found shortly before the place first quoted (p. 133) and shortly after the second place (p. 133).

- The master-of-ceremonies-type is not bothered so much by stress caused through pressure to adapt and blows to self-confidence.

- The MOC-type is more popular with seminary examiners.

- Being a MOC-type is a question of mentality.

- It is unfair to regard a mentality feature of this kind as a factor in assessment, as a yardstick for measuring pedagogical abilities.

If the paraphrase formulated in Step 5 is now inserted into these remarks, the result is a clearly comprehensible statement with an unambiguous meaning.

This explicational content analysis is now complete. Certainly, it would be possible to collect further material on the speaker from the interview as a whole, concerning, for instance, the description of his teaching practice and his examination experiences. In this case a new run-through would have to be done. But this does not appear to be necessary.

And so we will now pass on to the description of the next qualitative technique, that of structuring content analysis.

6.5 Structuring – Deductive Category Assignment

This is the content-analytical method which is probably most central. It has the goal of extracting a certain structure from the material. This structure is brought to bear on the material in the form of a category system. All text components addressed by the categories are then extracted from the material systematically. If one wishes to describe the structuring procedure quite generally, a few points, it seems to me, are especially important. The fundamental structuring dimensions must be exactly determined. They must derive from the issue/statement of the problem concerned, and must be theoretically based. These structuring dimensions are then, as a rule, further subdivided, being resolved or split up into individual features or values. Subsequently, the dimensions and values are brought together to form a category system.

The particular categorization of a given material component is something that must be determined precisely. A procedure for this has proven useful (cf. Ulich, Hausser, Mayring, Strehmel, Kandler, Degenhardt, 1985; Hausser, Mayring & Strehmel, 1982). It can be justified by the approach of multiple systems in the categorization theory (see chapter 3.5). We have shown in chapter 3.5 that the theories of categorization from General Psychology could be the basis for this process, which operates in three stages:

1. Definition of the Categories

It is precisely determined which text components belong in a given category.

2. Anchor samples

Concrete passages belonging in particular categories are cited as typical examples to illustrate the character of those categories.

3. Coding rules

Where there are problems of delineation between categories, rules are formulated for the purpose of unambiguous assignment to a particular category.

Test extracts are taken from the material to check whether the categories are at all applicable and whether the definitions, anchor samples and encoding rules make categorical assignment possible.

This trial run-through, like the proper main run-through, is sub-divided into two steps of operation. First of all the text passages in the material are marked in which the category concerned is addressed. These "points of discovery" (cf. Hausser, Mayring & Strehmel, 1982) can be marked by noting the category number in the margin of the text or through differently colored underlining or marks in the text itself. In the second step the material thus marked is processed in accordance with the structuring intention (see below) and copied out of the text.

As a rule this trial run-through results in a revision and partial reformulation of the category system and its definitions.

Now the main material run-through can finally begin, again split up into the two stages of marking the points of discovery and extracting and processing them.

In accordance with the type of structuring (see below), the results of this run-through must then be summarized and analyzed.

This general description of a structuring content analysis can be shown in a procedural model as follows:

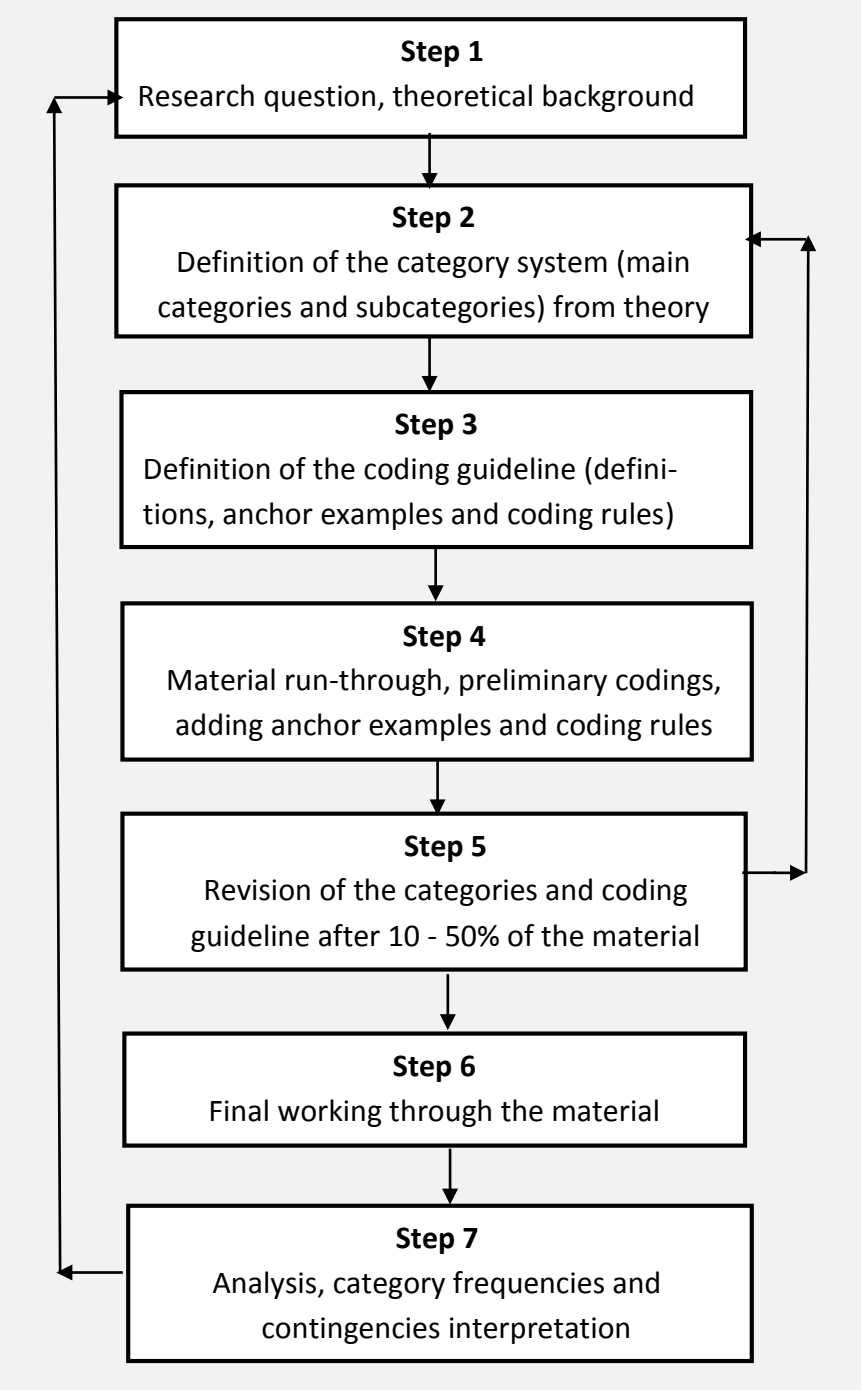


Figure 16: Steps of deductive category assignment

The procedure is deductive because the category system is established before coding the text. The categories are deduced from theory, from other studies, from previous research. Theoretical considerations can lead to a further categories or rephrasing of categories from previous studies, but the categories are not developped out of the text material like in inductive category formation.

So deductive category assignment is the adequate procedure if there is relevant previous research (less for explorative research designs, cf. chapter1.5).

The procedure rules for the single steps of deductive category assignment (= D) are:

D1: Research quastion

D1.1 Formulate a clear research question (not only a topic)!

D1.2 Describe the theoretical background (theoretical position, previous studies)!

D1.3 The research question must fit the deductive ongoing, that means that there is an a priori interest in special aspects of the material and a clear theoretical background.

D2: Definition of categories

D2.1 The research question has to be operationalized into categories that means research aspects brought to the material.

D2.2 Analyze the state of the art, preceding studies on the topic, to get a theoretical foundation! Not all categories have to be found in the research literature, but they have to be grounded with theoretical arguments!

D2.3 Check, if the material contains text passages relevant to the categories!

D2.4 If possible, try to group the categories to main categories in a nominal or ordinal way!

D3: Coding guideline

D3.1 Formulate a table containing four columns: Category label, category definition, anchor example, coding rules! Each category represents one line.

D3.2 Fill in the category labels and the category definitions, and, if already formulated, anchor examples and coding rules.

D4: Coding

D4.1 Start coding the material from the beginning! If you find material fulfilling the category definition, mark the text passage and note the category label (or category number). If you think it is a prototypical text passage for the category, add it to the coding guideline as anchor example!

D4.2 If you come to a text passage where the assignment to a category remains unclear, try to come to a decision and formulate a coding rule for this and following similar cases! In case of uncertainty use theoretical considerations!

D5: Revision

D5.1 If the coding guideline seems to be completed (at least with anchor examples) and the coding process seems to be smooth (usually after 10 - 50% of the material) or if severe problems arise, a revision of categories and coding scheme is necessary!

D5.2 Check all category definitions and coding rules in respect to the research question (face validity)!

D5.3 If changes are necessary, use theoretical considerations!

D6: Final work through

D6.1 If the changes of the coding guideline make prior category assignments false, you have to rework the material from the beginning!

D6.2 List all category assignments linked to the recording units!

D7: Analysis

D7.1 The result (of course after checking quality criteria like inter-coder agreement) is at first the distribution of categories per recording unit.

D7.2 Frequencies of assigned categories over all recording units or comparisons of frequencies in different groups of recording units can be analyzed statistically.

D7.3 In case of several ordinal category systems assigned to the same recording units, a correlation analysis (usually non-parametric) is possible.

There are two forms of deductive category assignment: analyzing the text with **nominal category systems** or with **ordinal category systems**. Nominal or qualitative category systems (cf. scales of measurement, e.g. Davis & Smith, 2005, p. 68 ff.) consist of a list of independent categories. The only similarity is that they are belonging to the structuring dimension. A list of fruits (C1: apples, C2: pears, C3: grapes, C4: lemons, C5: oranges …) is a nominal category system. The difference to inductive category formation is that these categories are formulated in advance and hold constantly through the text analysis. The result looks similar: A list of categories related to text passages, eventually frequencies of their occurrences.

Ordinal category systems express a graduation of the structuring dimension. The categories are in a fixed order, following more or less the structuring dimension (e.g. K1: excellent, K2: good, K3: average, K4: bad). If we have assignments of ordinal categories to different units of analysis a broader range of statistical procedures can be used. For example, two ordinal category systems assigned to the same units of analysis allow the calculation of a (usually non-parametric) correlation coefficient.

Link to QCAmap software (www.qcamap.org):

If you have uploaded textual material and formulated a research question in QCAmap, you have to decide for the adequate content analytical technique. Choosing deductive category assignment opens automatically a new screen where you have to fill in the categories, definitions, anchor examples and coding rules. Only after this step you can code the texts.

This procedure of deductive category assignment (ordinal categories) will now be illustrated using the example text.

Example

Representing the central issues in the analysis of the sample material (cf. 5.2.9), two main questions were formulated, the second of which will now be dealt with using a structuring content analysis: Has the "practice shock" affected the self-confidence of the individual? Within the framework of the DFG project "Teacher Unemployment", from which the material is taken, this issue was examined for possible evidence of a generalized control expectancy on the part of the individual, which could also have an effect on the present situation (of unemployment) (cf. Ulich et al., 1985). With the operational procedure suggested here the attempt will be made to assess systematically and according to complex psychological variables biographical material compiled in retrospect. Whether this has been successful content-wise remains to be tested, as hitherto this is simply a first attempt. It can certainly serve well, however, as an example demonstrating the method of structuring content analysis.

Step 1: Determination of the units of analysis

When determining the unit of classification, the main question is when and how often in the material the evaluation (influence on self-confidence) is to be carried out. The first possibility is to designate the individual case as the unit of assessment. This, however, seems a little too rough.

If self-confidence is to be understood as the certainty of being able to cope well with demands of one's biographical development (cf. Step 2) then a good opportunity for the assessment of self-confidence presents itself if the latter is linked to such demands as they are portrayed in the material. This would provide a much more concrete unit of assessment: whenever demands on the individual are described as being initiated by the change from university to post-graduate training ("practice shock"), this is regarded as a unit of assessment.

The recording unit as the smallest text component which can fall within a category can now be determined as follows: as soon as the material within a unit of assessment allows the conclusion that the demand was coped with in a self-confident manner (definition of this in Steps 3 and 4), this can be encoded. In a purely formal sense it can even be a proposition as a minimal carrier of meaning.

As the context unit, finally, we have all the material that exists on the respective demand in a particular case.

Step 2: Establishing assessment dimension(s)

Self-confidence, a construct closely related to that of generalized control expectancy (Rotter 1966), will be inferred here from the way in which challenges are coped with in the individual's biography. Self-confidence is taken to mean the subjective certainty of being able to deal well with such challenges.

General self-confidence is therefore composed of individual, situationally specific values. This situation-specific self-confidence is the assessment dimension of our analysis. In order to infer self-confidence from the portrayal of a challenge in the material we have to define the concept more exactly. Self-confidence can be thought of as comprising a cognitive component, an emotional component, and an active component:

- being aware of the kind of challenge one is faced with and the strategies necessary to cope with it (cognitive component);
- having a positive, optimistic feeling in dealing with the challenge (emotional component);
- the certainty of being able to meet the challenge adequately (active component).

Step 3: Determining the values

As the material gives only rather scanty information on individual self-confidence we will use here a simple scale with three values on it: high - average - low. For all cases in which an unambiguous assignment to one of these three values is not possible, we will establish a reserve category: "not inferable". We therefore have the following categorization:

C1: high self-confidence

C2: average self-confidence

C3: low self-confidence

C4: self-confidence not inferable

Step 4: Definitions, anchor samples and encoding rules

The core of structuring content analysis, the exact description of the categories through definitions, anchor samples and encoding rules, which has been explained already in the general section, will now be demonstrated here in the form of an encoding guide. For the anchor samples, however, material from other scripts on the same subject and within the same project on "Teacher Unemployment" will also be used.

Table 6: Coding agenda for self-esteem

Variable	Value	Definition	Anchor samples	Encoding rules
Self-confidence	K1: high self-confidence	High subjective feeling of having met the challenge well, i.e. - good awareness of the kind of challenge and the way it should be coped with; - positive, optimistic feeling when dealing with the challenge - conviction that mastery of the challenge lay in one's own hand	"Of course there were little problems now and then, but they were simply solved: owing to a change either in my view or in that of the pupil, depending on who was at fault - we all make mistakes."	All three aspects of the definition must point in the direction of "high", at least no aspect should allow the diagnosis of simply average self-confidence; otherwise encoding for "average self-confidence"
Self-confidence	K2: average self-confidence	Only partial or fluctuating certainty of having coped with the challenge	"I managed to grope my way through O.K., but it was often a cliffhanger." "With time it got a bit better, but whether that had to do with me or with other circumstances I don't know." "Towards the end I got on quite well with the seminary instructor but I didn't have a very good feeling about it - I just accommodated myself, submitted to the demands."	If not all three aspects point to high or low self-confidence
Self-confidence	K3: Low self-confidence	Conviction of having coped badly with the challenge, i.e. - little awareness of the nature of the challenge; - negative, pessimistic feeling when dealing with the challenge; - conviction of not having had control of the way the challenge was dealt with.	"That hit my self-confidence hard, I thought of myself as a nobody, a nothing."	All three aspects point to low self-confidence, otherwise encoding for "average self-confidence"
Self-confidence	K4: self-confidence not inferable	The demands were reported but the manner of dealing with them remains unclear.	"At the beginning it was difficult, but with time it improved."	

Step 5: Marking of points of discovery

The marking of the text passages relevant to the categories, the first run-through of the material (if there are several run-throughs, with bigger amounts of material one text passage is sufficient), has to keep to the general definition of the categories (Step 1). Every point at which challenges posed by post-graduate training are mentioned in the material must be marked. Within such passages the specific portions of text allowing an evaluation of self-confidence should be underlined. In the sample text in the appendix of this book this is done by bold characters.

Step 6: Assignment of categories

Following the unit of analysis one of the four categories has to be assigned to each of the 4 cases. If there are several points of discovery within one case a comprehensive assignment has to be done. This is not a quantitative step (counting which category occurs most often within one case), but an interpretative act, following the coding agenda.

The individual codings with the arguments for the categorization are as follows:

Table 7: Deductive coding of example texts (appendix); t: top of page, m: middle of page, b: bottom of page

Case	**Points of discovery**	**Code**	**Reasons for Code**
A	p. 125 t p. 125 b p. 126 m	C1 (high)	Positive feeling (keen, enjoyment); explanation of disappointments (big city); conviction of mastery (looking forward)
B	p. 128 t p. 128 m p. 128 b	C1 (high)	Positive attitude; management of difficulties, always adequate reactions
C	p. 130 m p. 131 m p. 132 t p. 132 b	C3 (low)	Dependence on extern assessment, conflicts create problems (but perhaps over-sensitive?), erosion of self-esteem
D	p. 134 m p. 135 t p. 135 m	C2 (middle)	Problems because lack of experience, first destroyed by criticism, but awareness of the problems and mastery at the end

6.6. Mixed Procedures

As we have mentioned earlier there are there are possibilities to mix different basic procedures (inductive, deductive) in Qualitative Content Analysis. Depending on the research question, they offer interesting possibilities of text analysis. We will propose three possibilities (several others will be possible as well):

6.6.1 Content Structuring / Theme Analysis

In the first editions of "Qualitative Inhaltsanalyse" I proposed several forms of structuring (which we now call deductive category assignment); one of them was content structuring which meant to filter out from the material specific content dimensions and to summarize this material for each content dimension. If this ios done inductively, the procedure is possible to implement by inductive category formation (cf. chapter 6.2). If the themes to be analyzed are fixed in advance (for example within an interview study the topics of the interview agenda), but the material per theme should be reduced, a combination of deductive and inductive procedures is needed.

Theme analysis or thematic analysis occurs in the content-analytical literature at several points. Stone (1997) defines it on the tradition of quantitative content analysis (Berelson, 1952) as selective analysis of subject matters or attributes of the text and formulates a bottom-up strategy (we would call it inductive) and a top-down (deductive) strategy. His aim is to identify themes as categories and to analyze frequencies and contingencies of the content categories. Boyatzis (1979) goes in a similar direction, describing thematic analysis as theory driven or data driven. Kuckartz (2014) conceptualizes thematic qualitative content analysis as a basically inductive process, Grounded Theory orientated.

In our context we only need to describe the more deductive sort of theme analysis, because inductive procedures are sufficiently described with inductive category formation. There are two basic steps of this form of content structuring or theme analysis:

- The first step is deductive. A list of themes is developed in advance, coming from theory, previous studies, from the interview agenda or sections of the data collection procedure. A coding guideline has to be developed, following deductive category assignment (cf. chapter 6.3). The material is coded with those categories.
- The second step is to extract all coded material per category and to summarize this material per category. If there is a huge amount of material per category, then inductive category formation is more adapted.

6.6.2 Type-building content analysis

In the first editions of “Qualitative Inhaltsanalyse” we have just described a form of type-building structuring. The label “structuring” is insufficient, because one central motive for finding typologies is to describe in deep those types (cf. Kluge, 2000). So this seems to be a mixed procedure.

The central idea of type-building is to classify and describe a heterogeneous amount of material. Typologies have a long tradition within social and behavioral sciences. The four temperaments (choleric, melancholic, sanguinic, phlegmatic) go back to antique thinking (Galen of Pergamon, 130 - 200p). Until the first half of 20th century, typologies were common in psychology as personality traits (e.g. C.G. Jung: introversion, extraversion). Max Weber developed the approach of ideal types for sociology. The Marienthal study of unemployment in the 1930ies (Jahoda, Lazarsfeld & Zeisel, 2002) has found four different reaction types: the unbroken, the resigned, the despaired, and the apathetic people.

Ritchie, Lewis, Nicholls & Ormstrong (2014) have worked out, that typologies can be simple descriptive, single-dimensional or more complex, multifactorial or multidimensional like a cross tabulation (Lazarsfeld & Barton, 1951). On the other hand, a different logic of type-building is possible. Are we looking for types as representatives of the most frequent occurrences within the chosen dimensions, or for extreme types (the typical best, the typical worst) or are we interested in certain values within the dimensions from a theoretical point of view? So the development of a typology needs different steps (cf. Kluge, 2000; Kuckartz, 2014): The definition of the dimensions within types and the logic of types should be formulated, the identification of types in the material and the description of those types. Within Qualitative Content Analysis this means the following steps (Figure 17):

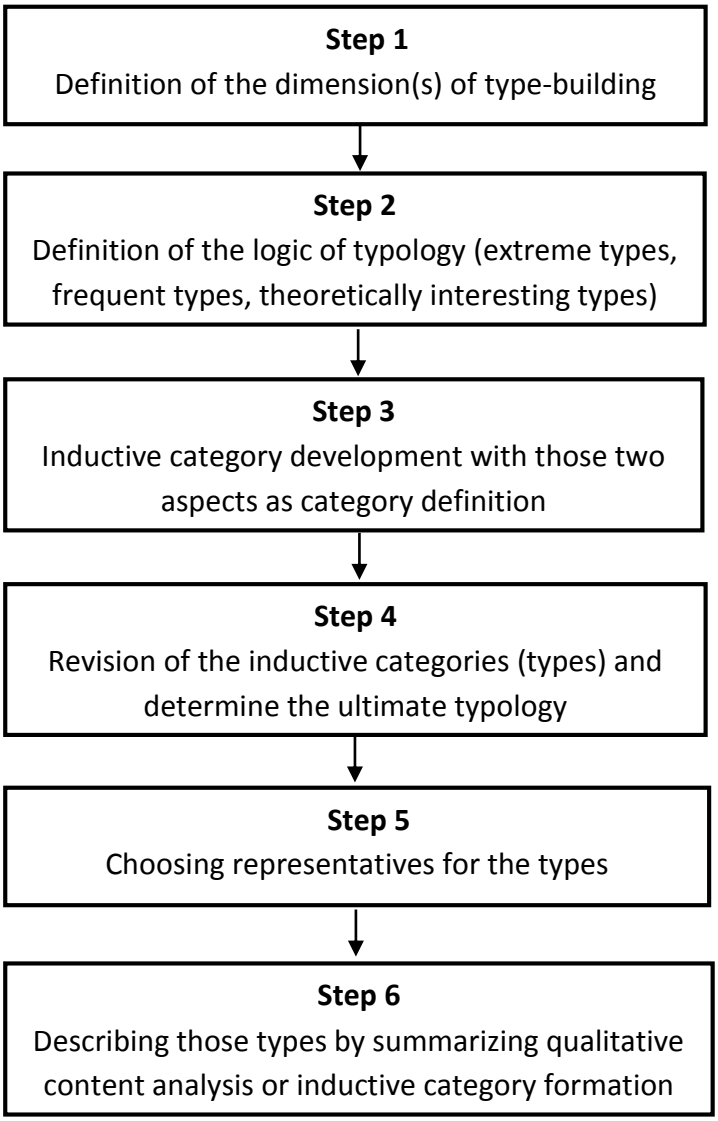


Figure 17: Step-by-step model for type-building content analysis

6.6.3 Parallel procedures

Of course the analysis of the textual material can proceed with different inductive and/or deductive content-analytical procedures simultaneously. In our example study on stress of teacher students we applied the inductive category formation (finding concrete stress factors) and the deductive category assignment (level of self-confidence) parallel in the same passage through the interview material. And several other procedures could be combined in one session. This is the big advantage of content analysis to work through big data amounts very economically.

7. Quality Criteria of Content Analysis

If content analysis is to claim the status of a social scientific method, it must allow quality controls to be applied to it, enabling every individual analysis to be assessed for objectivity, reliability and validity. As far as content analyses hitherto are concerned, however, the position is even more desolate than in the rest of the social-scientific research field: there is an almost complete dearth of data on quality criteria of the procedures.

Koch, Witte & Witte (1974), for example, tested communication science analyses of news media, a classical field of content analysis, with regard to the way in which they treated quality criteria: the most recent six content analyses available to the authors almost all ignore this point. On the other hand it must also be admitted that the classical criteria of reliability and validity are often called into question by content analysts. This point will be dealt with first of all, before quality criteria specific to content analysis are introduced.

7.1 Classical Quality Criteria

Social science methodology divides quality criteria into measures of objectivity (independence of research findings from the person of the researcher), reliability ("stability and precision of the measurement, plus consistency of the measuring conditions", Friedrichs, 1973, p. 102), and measures of validity relating to the question of "whether what is measured is what ought to be measured" (Friedrichs, 1973, p. 100). It is usual to distinguish within reliability and validity different conceptions:

Reliability:

- Re-test: The research operation is carried out a second time and tested as to whether the same findings result.
- Parallel-Test (equivalent Form): The question at issue is examined with the same sample but using a different instrument; then the correspondence is checked.
- Consistency (split-half): The material or the instrument is divided into two equal halves and it is then checked whether both halves yield similar findings.

Validity:

- External criterion: Research findings closely related to one's own issue and objects of examination, and of whose validity one is convinced, are brought in as a standard of comparison.
- Predictability: On the basis of the results predictions are made and then the extent to which they are fulfilled is examined.
- Extreme groups: Parts of the sample expected to yield extreme results are singled out and tested as to whether the results point in the predicted direction.

- Construct validity: The findings are tested for plausibility using established theories and the appropriateness of the operational definitions is considered on the basis of the theoretical background.

Criticism has often been voiced against these "classical" quality criteria and their applicability to content-analytical research (Steinke, 2000; Mayring, 2002a). With reliability determination, parallel testing procedures appear problematic, as the equivalence of two instruments used for analyzing language material is likely to be demonstrable only in rare cases. The splitting method is also unlikely to be appropriate in most instances, since the size of the material sample, as also the size of the instrument (the categories), is mainly defined in such a way that in individual parts central findings can occur which alter the overall results. The usual procedure with content-analytical reliability tests is for the whole analysis to be carried out by several persons and then to compare their results (inter-coder agreement). But objections have been made even to this approach.

J. Ritsert (1972), for instance, points out that a high level of correspondence between different coders could only occur with very simple analyses. "The more detailed and comprehensive the category system is, the more difficult it will be to achieve a high level of reliability in the results, although at the same time the significance of one examination with regard to the contents may rise (transl. PM)." (Ritsert, 1972, p. 70) Lisch & Kriz (1978) doubt the value of inter-coder reliability entirely; believing that with language material interpretational divergences among different analysts will probably be the rule rather than the exception. "Parts of the population that do not view the world and categorize it as content analysts do are simply excluded from further consideration on grounds of stupidity or malice - why, after all, should the social scientist allow his objective significance homogeneity, strenuously achieved with the `best group of encoders', to be ruined by real reactive and interpretational differences in social sub-groups? (transl. PM)" (Lisch & Kriz, 1978, p. 90).

As reliability is the pre-condition for validity (not, however, the other way round), the arguments against reliability concepts also affect validity. "The stronger the variability of everyday phenomena is determined by undiscovered and/or theoretically disregarded parameters (disturbance factors), the more an increase in reliability through elimination of these parameters will impair the practically relevant aspect of validity (transl. PM)" (Lisch & Kriz, 1978, p. 87).

But criticism of validity concepts is also frequently heard. It is the circularity of validation arguments that is mostly the target of attack (e.g. Ritsert, 1972, p. 72 ff.): when material external to one's own examination is drawn on as a quality standard (external criterion or theoretical assumption in the case of construct validity), then its validity must already have been established. Krippendorff (1980) has formulated this as a trilemma: "If the content analyst has no direct knowledge about what he is interfering, then he actually cannot say anything about the validity of his findings. If he possesses some knowledge about the context of the data and uses it in the development of his analytical constructs, then this knowledge is no longer independent from his procedure and cannot be used to validate the findings. And if he manages to keep the knowledge about the target of his interferences separate from his procedure, then the effort at interfering it from data is in fact

superfluous and adds at best one incident to the generalization of the procedure" (Krippendorff, 1980, p. 156).

It is for this reason that today special quality criteria for qualitative research are under discussion (Flick, 1987, Mayring 2002a, Chapter 5). Such criteria, for instance, are documentation of method, interpretation safeguards, proximity to the object, rule-boundedness, communicative validation and triangulation.

For the solution of such problems, however, special conceptions of content-analytical quality criteria have also been developed. These will now be dealt with in further detail.

7.2 Specific Content-analytical Quality Criteria

With inter-coder reliability a specifically content-analytical quality criterion is addressed. It should be mentioned that the comparison of two analystscoding the same material actually would give a measure of objectivity (independence of research results from the researching persons). Reliability in the proper sense would be the **intra**-coder agreement test, labelled by Krippendorff as stability (see Figure 18). We will come to this later.

Holsti et al. (1969, p. 135 ff.) and also Rust (1981, p. 172 ff.) have pointed out that not only the application of the categories to the material (encoding) must be carried out reliably, but also the construction of the categories themselves. Such considerations are leading increasingly to suggestions for specific content-analytical quality criteria, most recently put forward in their broadest form by Krippendorff (1980). He distinguishes here between 8 concepts, which are connected as follows:

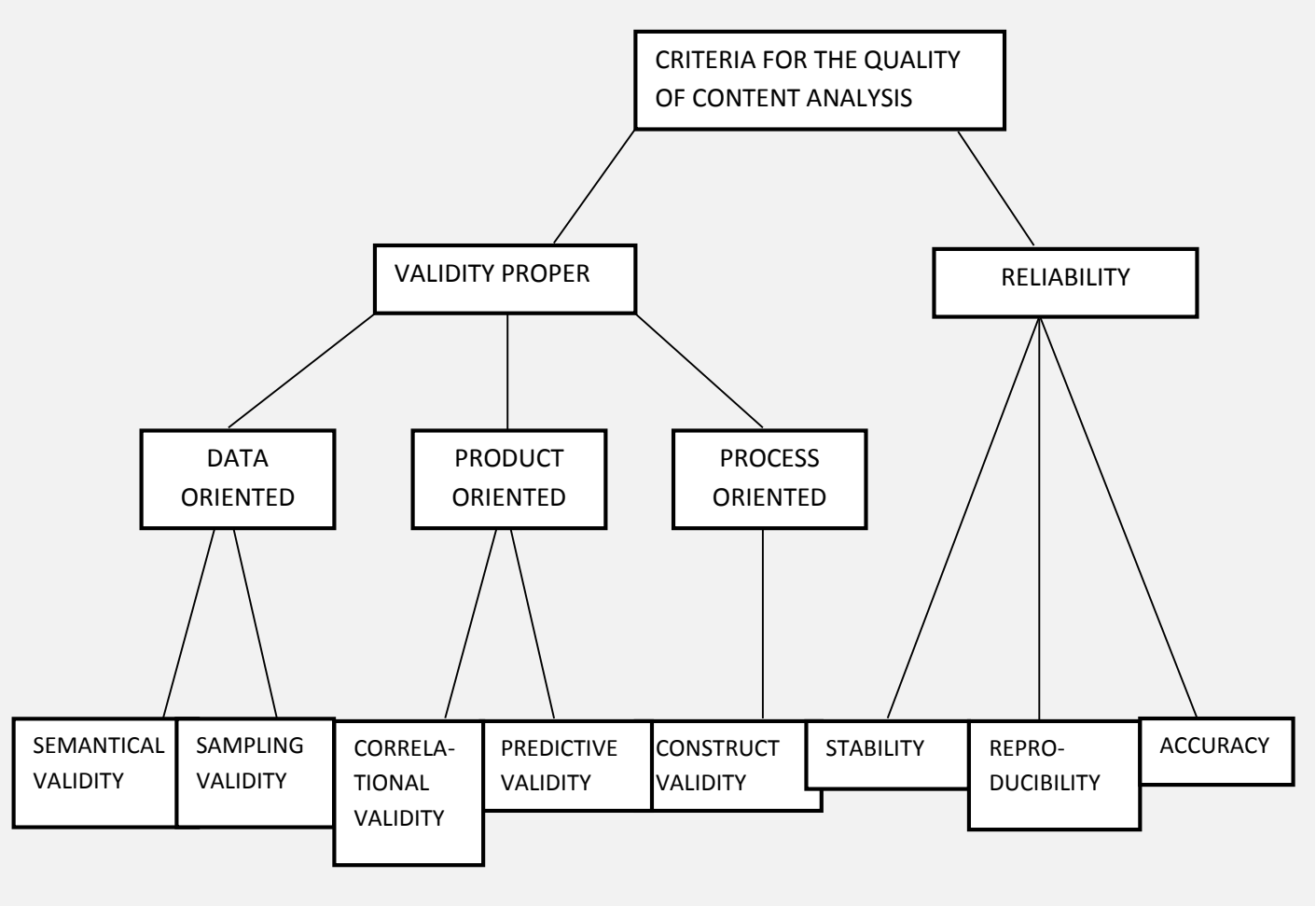


Figure 18: Content-analytical quality criteria according to Krippendorff 1980, p. 158

Semantic validity here has to do with the correctness of the manner in which the meaning of the material is reconstructed. It is expressed in the appropriateness of the category definitions (definitions, anchor samples, encoding rules). Testing can be based on the judgments of experts. But Krippendorff also suggests simple "checks":

- collection of all passages to which analysis instructions have assigned a certain meaning; comparison of the passages with the construct, testing of the homogeneity of the passages
- construction of hypothetical passages with known meaning; testing whether the analysis instrument can reconstruct this meaning; construction of problem cases

For **sampling validity** it is sufficient to refer to the usual criteria for accurate sampling (cf. e.g. Krippendorff, 1980, Ch. 6; see also Ch. 5.2).

Correlational validity means validation through correlation with an external criterion. Testing is only possible if results of an examination with a similar line of inquiry and similar object of study are present. What appear significant are above all comparisons with results arrived at through other

methods such as test, experiment or observation. But the contrary path is also open: often analysis instruments or objects can be named which ought to lead to completely different or even diametrically opposite results. This can also be tested correlationally.

Predictive validity is only applicable as a quality criterion if meaningful predictions can be made on the basis of the material. Testing, however, is then simple and effective.

Construct validity can be tested in content analyses according to several criteria such as

- success rate hitherto with similar constructs and/or situations;
- experiences with the context of the material in question;
- established theories and models;
- representative interpretations and experts.

One quality criterion which is gaining increasing importance should not be left unmentioned here: **communicative validation** (Klüver, 1979; Heinze & Thiemann, 1982), introduced into methodology as well as member check (cf. Flick, 2009). The basic idea of this is to achieve discursive agreement or conformity between researchers and their subjects of investigation (i.e. the interviewees) on the results of the analysis. Such a procedure has a particular "sense and irrevocable necessity, where the theoretical interpretations of statements, especially self-portrayals, have the function of preparing and structuring a research partnership with the interviewees" (Klüver, 1979, p.82). Heinze & Thiemann describe communicative validation as a technique which "(a) contributes to the self-expression of people as regards their everyday lives; it has nothing to do with arguing about the validity of theoretical principles; (b) lends itself to inquiries into the constituent conditions of subjective life; the individuals are regarded at any rate not as simple derivatives of social structures; (c) integrates the most important instrument of research, the researcher himself, into the research process; precisely this is why it is not objective; (d) the research situation integrates co-operation with the daily actors into the interpretation itself; the ‘interpretation products’ are not separated from the conditions under which they arose; (e) no explanations are given beyond the discussions with the daily participants" (Heinze & Thiemann 1982, p. 641).

Stability can be tested by applying the instrument of analysis again to the material. This is a form of **intra-coder agreement** and a measure for reliability in the traditional sense (comparable to retest-reliability in test theory). It is very easy to accomplish and therefore highly recommended within qualitative content analysis: After the coding process the analyst starts again with coding from the beginning of the material without knowing his or her preview codings, at least for a part of the material. Then he or she compares the two results. This gives insights if the rule application had been stable during text analysis. If the results are very different, the rules (units, category definitions, abstraction levels, coding agendas) should be revised and all the material should be analyzed again. If there are only small differences, this should be reported as measure of reliability.

Reproducibility means the extent to which the analysis leads under different circumstances to the same results. This factor depends on the explicitness and accuracy of the process description, and can be measured via **inter-coder agreement**. Usually this procedure is labelled as inter-coder-reliability, but we would say that it is more objectivity in the sense of independence of the results

from the analyzing person. The simplest measure would be the percentage of agreement (identical codings divided by all codings). But there are a lot of more specific suggestions of coefficients (for a survey, see Friede, 1981; Asendorpf & Wallbott, 1979). Such coefficients must not only account for the proportion of correlating assessments by different coders, as in the measure of reliability (Holsti, 1969, p.140):

$$R = \frac{\text{(Number of coders)} \times \text{(Number of correlating assessments, agreements)}}{\text{(Number of all encoder assessments)}}$$

They also ought to rid the coefficients of the number of expected chance correlations, as Scott, Flanders, Garrett and Cohen (cf. Friede, 1981) attempted.

$$R = \frac{\text{(observed percentage agreement)} \times \text{(expected agreement by chance)}}{1 - \text{(expected agreement by chance)}}$$

Krippendorff (1980, p.133 ff.) produced a coefficient which seems to be the most suitable. He starts from the following basic idea:

$$R = 1 - \frac{\text{(observed coder disagreement)}}{\text{(expected disagreement by chance)}}$$

Krippendorff has worked out this approach to inter-coder- reliability for several encoders, several features and all scale levels (nominal, ordinal, interval, and ratio scales).

Accuracy refers to the extent to which the analysis conforms to a particular functional standard. It presupposes the stability and reproducibility of the instrument, it is the strongest measure of reliability, but at the same time is the most difficult to test.

According to Krippendorff four sources of non-reliability can be distinguished:

- the assessment units (discovery points): here it can be tested whether the assessment units where discrepancies between several encoders occur are systematically distinct from the rest of the material;
- the analyst: this can be tested via inter-coder reliability;

- the individual categories: here it can be tested whether discrepancies occur with particular frequency in the case of certain categories; this can be eliminated by making the definitions clearer;
- category differentiation: reliability can often be increased if ambiguous categories are amalgamated, thus leading to a category system which is more general, but more accurate in its applicability.

This conception of Krippendorff constitutes a version of content-analytical quality criteria which is rational and, for the most part, easily applicable. Systematic compilation of quality criteria ought, however, to start with a content-analytical theory of error. The question that should be asked is: Where can content analyses still make mistakes? Quality criteria would then be related to this. Material on such a theory of error could be found in two areas:

- In the object model, the content-analytical communication model (cf. Figure 8) the relation between the material, its subject matter, the communicator, the recipient and the content-analyst is portrayed. Distortions can arise between all these entities. They can be further categorized as sources of error.
- In the procedural model of analysis (cf. Figure 9 in general) the individual analysis steps are described in sequence. Every one of these steps describes at the same time a possible source of error.

Reflection on possible content-analytical sources of error could lead not only to the development of new quality criteria; the suitability of content analysis as a social scientific method in general ought to be established here. For us, a check of intra-coder and inter-coder agreement (at least for parts of the material would be the most important concepts, and actually indispensable for Qualitative Content Analysis.

Link to QCAmap software (www.qcamap.org):

In QCAmap on the screen of the project details a button “+ New Inter-Coder-Agreement” is visible. With this tool a second coding is made possible. It is recommended to run this comparison of the two coding processes with the same material as intra-coder comparison (stability) and inter-coder comparison with a second person (objectivity).

7.3 Three Levels of Inter-coder Agreement

For Quantitative Content Analysis the calculation of coefficients like Cohen's Kappa or Krippendorff's Alpha play an important role. Coefficients should be higher than 0,8 with a minimum for acceptance of 0,67 (Krippendorff, 2004). In qualitative research however, a perfect agreement between different analysts can hardly be reached, because interpretative elements (even if extreme rule guided like in Qualitative Content Analysis) always bear a subjective element. So we must be a little bit more modest. To leave out inter-coder comparisons would not be an alternative, because it leaves text analysis in pure subjectivity.

We suggest three different levels of inter-coder agreement tests which are different in their degree of rigor:

- The strongest test would be to give only the texts to be analyzed and the research question(s) to a second person. So we can check if the process of category building, category definition and category application, as well as the definition of procedures and units of analysis is the same. But within those definitions a lot of theoretical considerations are introduced, and research results always have to be seen as theory dependent.

- So a second way would be to give to a second coder the texts to be analyzed together with all content-analytical rules (procedure, units, category definition and level of abstraction for inductive category formation, coding agenda for deductive category assignment). This is the best way for most of Qualitative Content Analysis projects. But sometimes the material is very open, no theory can lead to clear definitions, and the research question is widely explorative.

- In those cases a "lighter" test is recommended. The second coder has insight in the whole material, definitions, and codings of the first coder. He works as supervisor and checks if he or she can confirm the analyses of the first coder.

The project should decide for one of those procedures. And of course several coders (more than two) can be involved.

Because those procedures can be very time consuming sometimes only a partial inter-coder agreement test is carried out. Only parts of the textual material (random samples, exemplary text portion, difficult text portions) are selected.

A further specificity of Qualitative Content Analysis is the possibility of correcting false codings, especially if the text corpus is not so huge and the inter-coder agreement test is run through the whole material. This is a unique possibility to come to better results, instead of only having an indicator for accuracy. All codings with disagreement could be excluded from the further analysis. Even better would be to organize a sort of coder conference, where the coders discuss the disagreements and decide for the right codes.

Link to QCAmap software (www.qcamap.org):

In QCAmap the three possibilities are offered on the screen and the analyst has to decide for one of them. After running the inter-coder agreement test, not a quantitative indicator is offered but an open appraisal of reliability or objectivity.

If a quantitative indicator (Cohen's Kappa or Krippendorff's Alpha for example) is needed, the results must be exported via the analysis screen and imported into a statistical software package.

8. Computer Programs for Qualitative Content Analysis

There are two reasons for thinking about the use of computer programs for Qualitative Content Analysis: First, the textual material nowadays usually consists of a text file which makes it possible to transfer it into a software program. Secondly Qualitative Content Analysis represents a very systematic, controlled, step-by-step sort of text analysis, where maybe a computer program could be helpful.

And indeed since the eighties of the twentieth century a lot of programs have been developed, especially for qualitative text analysis, nowadays under the label of CAQDAS (Computer Assisted Qualitative Data Analysis; Pfaffenberger, 1988; Tesch, 1990; Fielding and Lee, 1991; Weitzman & Miles, 1995).

In the context of qualitative research computer programs play a different role as they do in quantitative analysis (see chapter 3.1). Looking at recent developments, the following computer procedures (Kuckartz, 2005) are relevant for qualitative content analysis:

- The textual material is transcribed using a word processor, so that we can read the material as a text file within different computer programs (e.g., as ASCII file). The specific program can edit and organize the material for the different procedures of analysis.
- We can mark specific segments of the material ("underlining") and attach keywords or categories to them (coding). Some computer programs do this by referring to the line numbers, some by using the mouse, others by using hypertext functions.
- We can mark other segments of the material and subsume them under formerly defined keywords or categories.
- Now we can gather all material coded with a specific category, even from huge quantities of text. This allows us to single out typical quotations for individual categories.
- We can pick out segments of text marked with keywords or former coded categories.
- The categories can be altered, revised and refined in the process of analysis.
- The categories can be ordered hierarchically, divided into subcategories, combined into general categories, together with all associated text segments.
- Rules of analysis, comments on the material, and explanations of categories can be attached to the categories within the computer program, so they are available and revisable at any moment within the process of analysis.

So in qualitative research the computer has totally different functions from those in quantitative research:

- The computer serves as an **assistant** to the researcher. The researcher is still responsible for the interpretation of the text, but the computer helps to organize the materials, the steps of analysis, the interpretation rules, and the results.
- The computer is the **documentation center** of the analysis. Every decision of organizing, coding, and interpretation of the material is "written down" and can be reviewed at any time

in the process of analysis. The fact that everything is documented also gives one the opportunity to reconstruct, at a later date, the situation in which the interpretations were formulated. This is important for reliability checks.

- Under certain conditions (e.g. within structuring content analysis) the computer can **prepare the results** of analysis for further **quantitative** processing. Some computer programs for qualitative analysis provide simple quantitative procedures themselves. Otherwise the results can be copied as a data file into a quantitative program and thus can be combined with other quantitative data. This is of course valid only if the qualitative analyses produce results which can meaningfully be quantified (e.g., frequencies of the occurrence of categories).

In recent years several computer programs have been developed which can be really helpful for qualitative content analysis. Weitzman & Miles (1995) discuss 24 different programs for steps of qualitative analysis which can be adapted for qualitative content analysis (e.g. ATLAS/ti, MAXQDA). In the meantime the label CAQDAS (Computer Assisted Qualitative Data Software) has been introduced and several internet pages collect and comment the latest software developments (e.g. http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas/).

There are some limitations of those programs: Most of them are developed from the background of Grounded Theory. They offer the possibility of coding, code networks, and memos. Other approaches of qualitative text analysis are not so easy to apply. For deductive category assignment for example it would be important to have the coding agenda on screen during coding, for inductive category development the category definition and the level of abstraction. Within the traditional programs the memo function can be used for that, but there is usually no possibility to create tables (for the coding agenda). A second limitation is that the traditional programs are constructed in a window design. The screen is divided in different windows (e.g. a window for the texts, a window for the codes, a window for the memos). This is a more or less static concept, and the screen can be overcrowded. Especially for Qualitative Content Analysis we need a definition of units of analysis, step models, category definitions, coding rules, and so on, which could hardly be displayed on the screen (different memos for that?). So Qualitative Content Analysis can be proceeded, but not very comfortable.

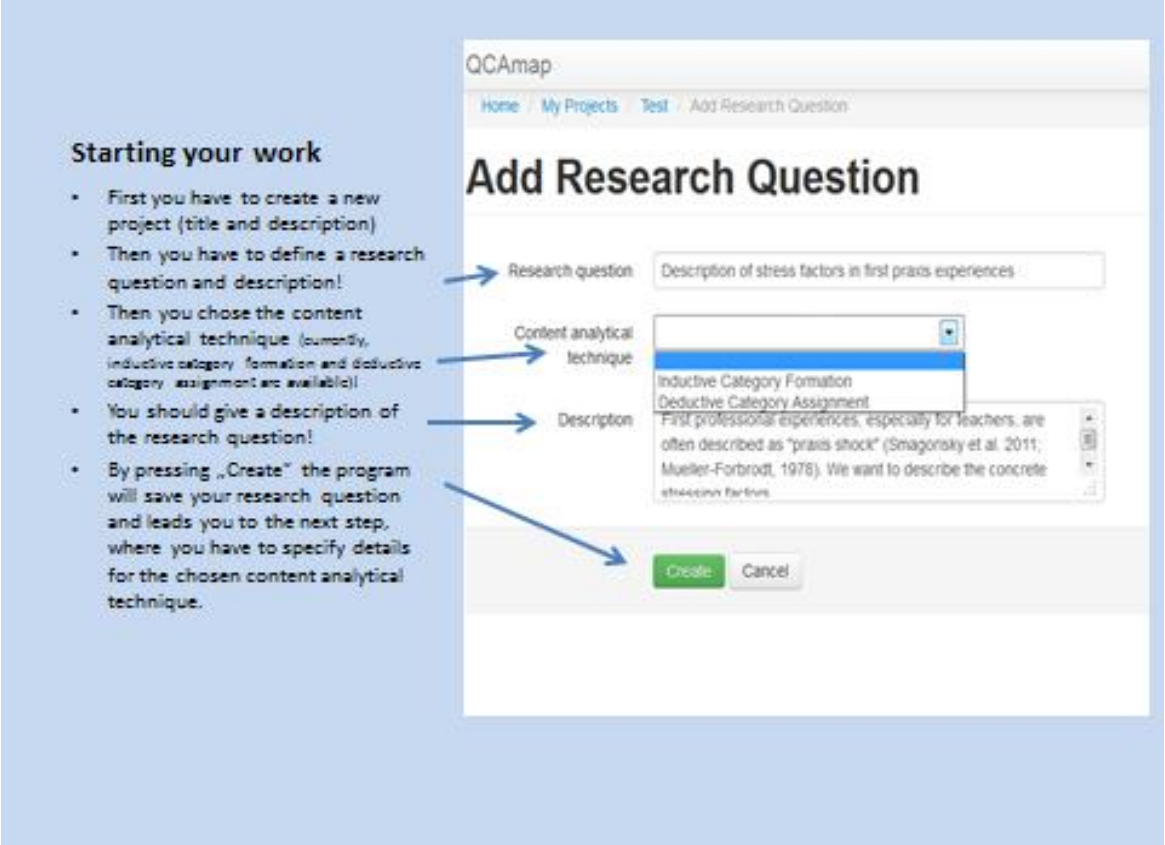
Within the last years, funded by the Alps-Adria-University Klagenfurt, the Kaerntner Sparkassenfonds, and the Association for the Support of Qualitative Research ASQ, a software package for Qualitative Content Analysis (QCAmap) has been developed. The software engineers (coUnity Software Development, Klagenfurt/Austria) had suggested, and I think this is the first time in Computer Assisted Qualitative Data Software, an interactive web application, which opens step by step new screens, following the methodology of Qualitative Content Analysis. If one of those steps is not proceeded (for example no units of analysis or coding agenda defined, no pilot study) the program stops.

This application is offered for free via open access at www.qcamap.org.

Because program refinements are done continously an online solution has been selected instead of a download solution, installing the program on the individual computer. So we can improve the

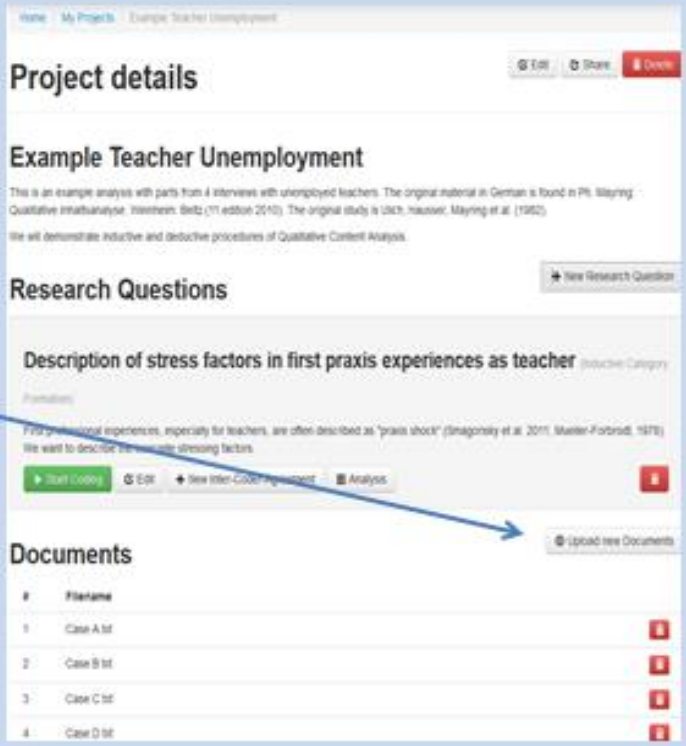
program, add new possibilities, correct failures without the necessity for the users to download new versions. The program is kept on an independent, highly protected server. An additional homepage gives actual information (e.g. workshops, projects, publications) around the program (www.qualitative-content-analysis.aau.at).

The following slides give an impression of the program.



Upload your text material

- For each research question you have to upload the text documents which will be analyzed!
- The text documents have to be transformed into a txt.-file (UNICODE-Format; the procedure how to convert your files is described on the entry page under the button „How to get startet".

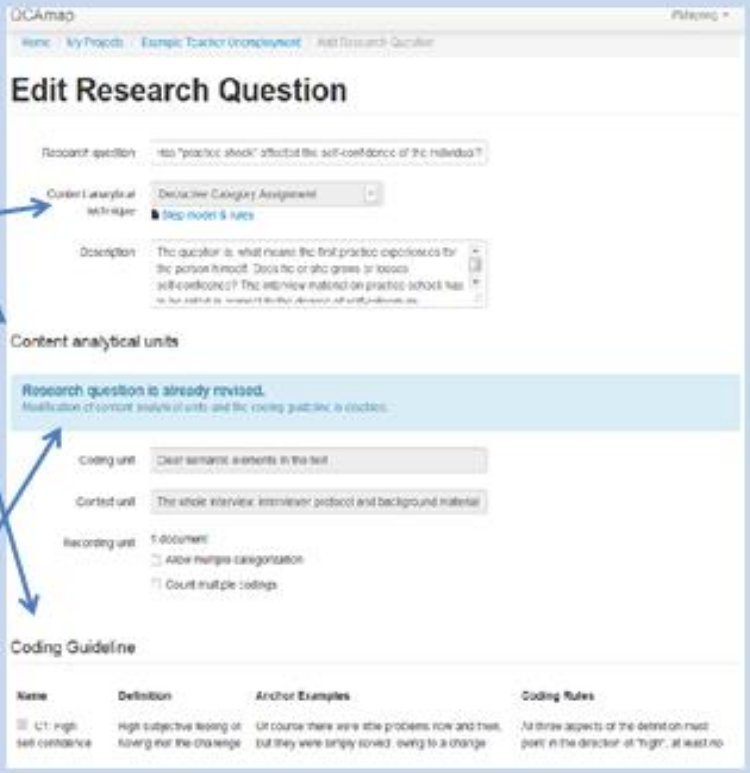


Introduction

- With a series of slides we would like to show you the basic procedures of the software.
- The program entry page (www.qcamap.org)
- The Website with further infos (www.qualitative-content-analysis.aau.at)
- Informations about first steps to get started
- You need to register an account. We guarantee that all your data will be kept confidential. A registration notification will be sent to your email-address.
- Now you can user the software from everywhere using different webbrowsers (Internet Explorer 9, Mozilla Firefox, Google chrome).
- Do not forget to log out. Your data is stored on our server. We guarantee that only you have access to this data.
- Since the application is web-based you will always work with the latest version of the program.

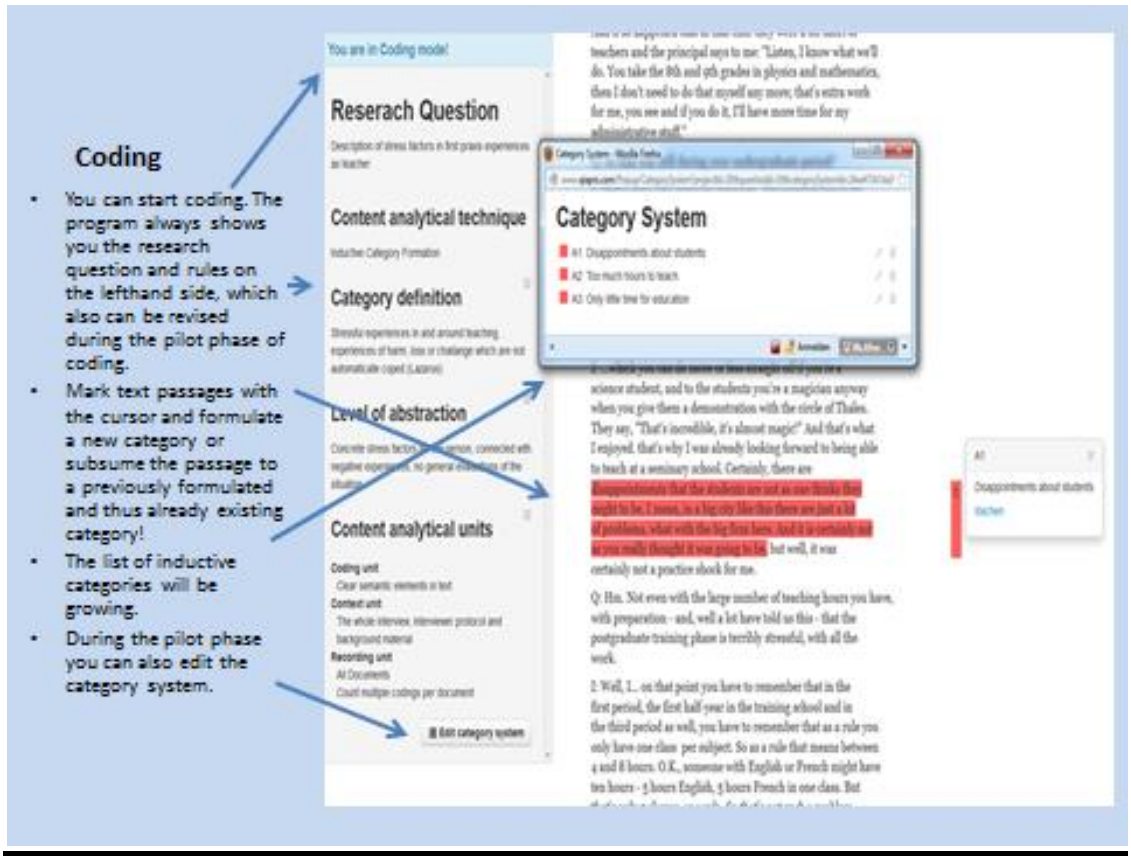
Deductive category assignment

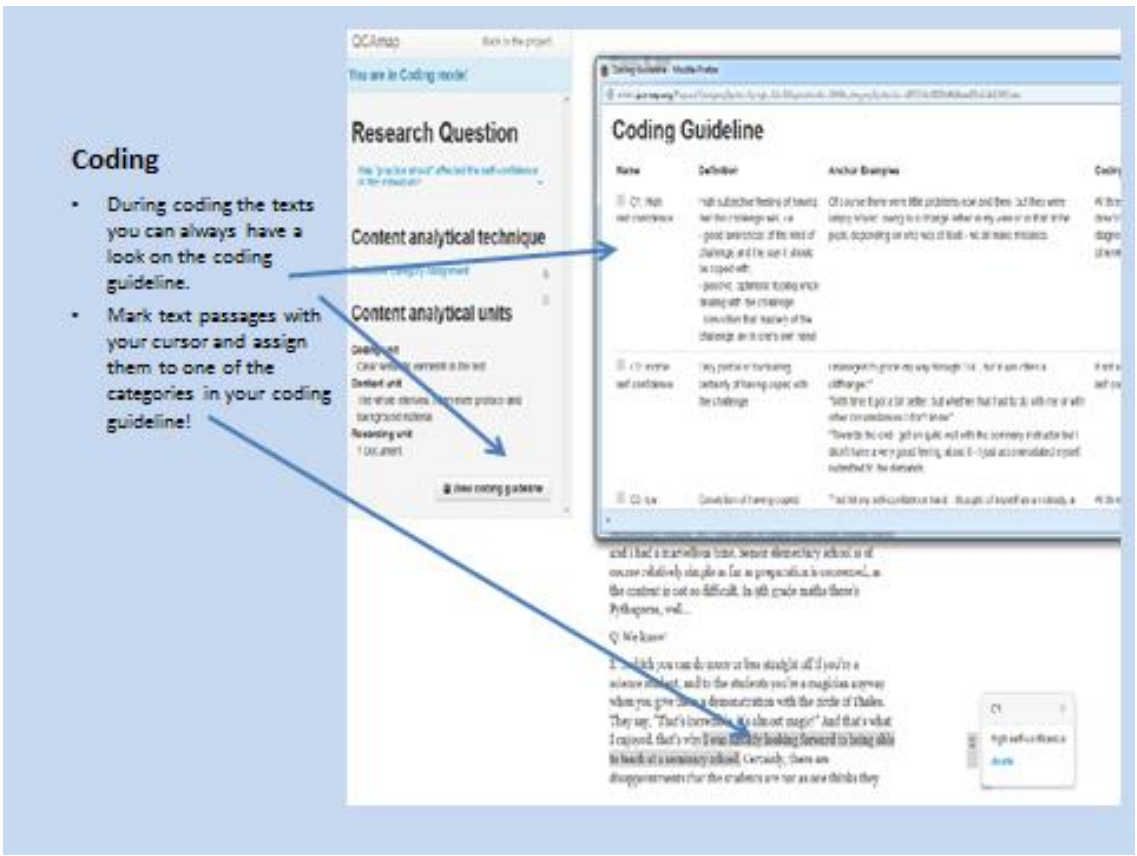
- If you chose the technique of deductive category for your research question, you have (after defining the content analytical rules) to formulate the coding guideline, which contains definitions, anchor examples and coding rules.
- After coding a certain amount of material the program reminds you to revise the category system and the coding guideline (pilot phase). After finishing the pilot phase, no more changes can be applied to the coding guideline.



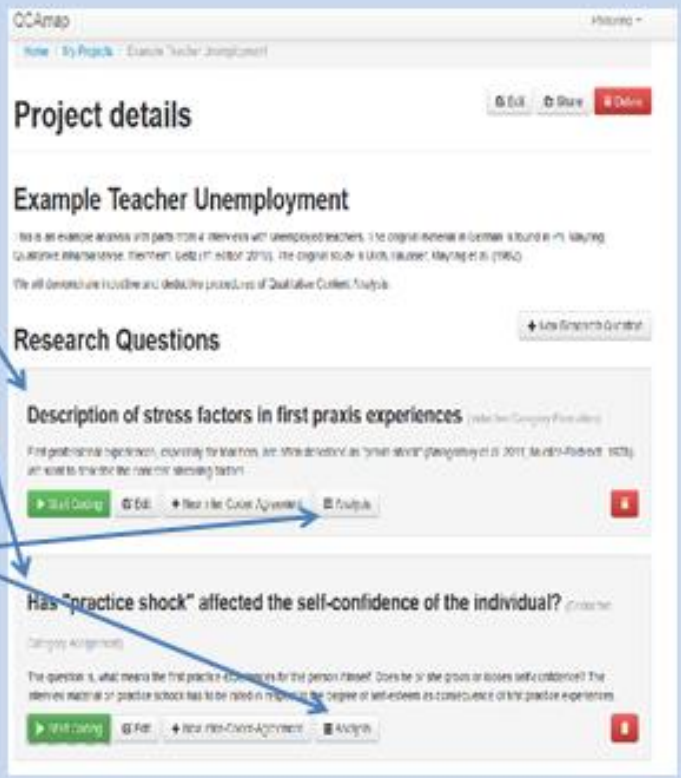
Inductive category formation

- You can look up the step model and the content analytical rules of inductive category formation (Mayring, 2011; 2013)
- If you have decided for inductive category formation, you have to describe the research aim, that is you have to define the content analytical units (recording unit in inductive CA is always the entire material), to give a category definition and to determine the level of abstraction!
- You can revise those definitions during the pilot phase (do not forget to save the changes with the button at the end of this page!).
- Only once these definitions are given, the program will allow you to „Start Coding" your material!

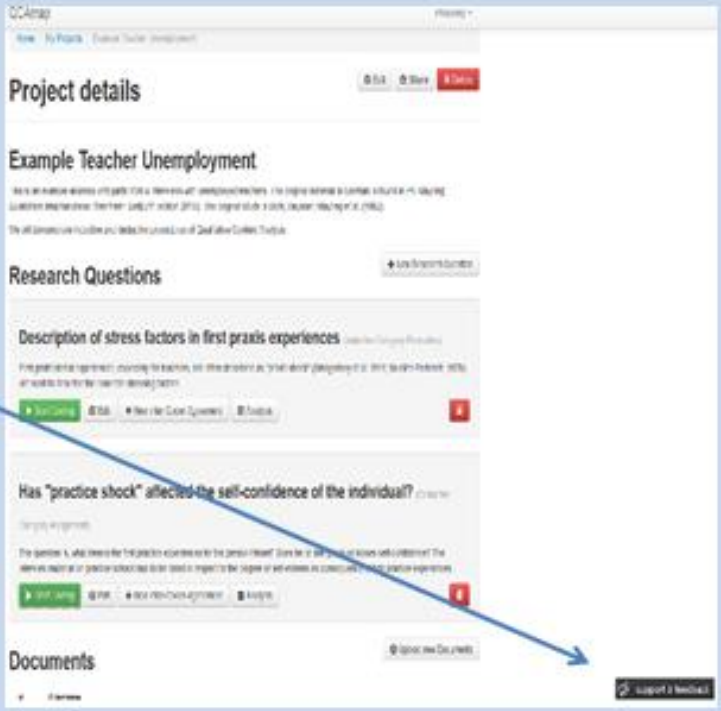

Coding
You can start coding. The program always shows you the research question and rules on the lefthand side, which also can be revised during the pilot phase of coding.
Mark text passages with the cursor and formulate a new category or subsume the passage to a previously formulated and thus already existing category!
The list of inductive categories will be growing.
During the pilot phase you can also edit the category system.
You are in Coding mode!
Reserach Question
Content analytical technique
Category definition
Level of abstraction
Content analytical units
Edit category system
Category System


Coding
During coding the texts you can always have a look on the coding guideline.
Mark text passages with your cursor and assign them to one of the categories in your coding guideline!
You are in Coding mode!
Research Question
Content analytical technique
Content analytical units
Coding Guideline

- You can run several research questions (inductive and deductive) within the same project, with the same text material.
- When your analysis of the texts is advanced, the software remembers you to pilot check the category systems (inductive) or the coding guideline (deductive) and the content analytical rules.
- Once coding of the text material is finished (but also during coding) the system gives you several possibilities of displaying the results (button „Analysis").
- The results will be given as Excel-files, so the data can be imported into statistical analysis software (e.g. SPSS).



- Enjoy the program!
- New features will follow soon.
- If you have questions or problems, or if you find any features that do not work properly, do not hesitate to contact us. Your feedback is very much appreciated!



9. Related text analysis approaches

First I want to compare the procedures of Qualitative Content Analysis with similar approaches of the qualitative oriented social science text analysis (cf. Mayring, 2010b).

Within media analysis, David Altheide (1996) has developed a procedure ("ethnographic content analysis") working with deductive categories (codes), which were refined in the process of analysis. Then he summarizes the results for each category. This has similarities with our approach but is not at all as rule oriented as Qualitative Content Analysis. In the USA there exists an approach coming from the quantitative content analysis which is called Codebook Analysis (Neuendorf, 2002). It is a deductive category application procedure, which defines in the codebook all categories and gives examples from the text. But this definition is not as systematic as the coding scheme (definitions, anchor examples and coding rules) in our procedure. In some ways similar is the Thematic Text Analysis (Stone, 1997), which looks through the text for central themes, using theoretical preconceptions or empirical word frequencies and word contingencies. In both cases the Qualitative Content Analysis defines the procedure more precisely. The related concept of Theme Analysis covers phenomenological procedures more freely (Meier, Boivin & Meier, 2008). Some similarities can be found between Qualitative Content Analysis and text analysis following Berg (2004). He describes deductive ("analytic") and inductive ("grounded") categories which have to be defined explicitly, but it remains unclear how this has to be done. Schreier (2012) describes techniques of qualitative content analysis widely based on our developments. She first introduces a data-driven coding frame (we would call it inductive category development), but there are some misunderstandings of our concept in regard to building new categories and subsumption of material to just formulated categories. Then she describes a concept driven way of coding, similar to our deductive category application. Kuckartz (2014), the developer of the widely used software program MAXQDA, describes three different procedures of Qualitative Content Analysis, again broadly based on our developments: thematic qualitative text analysis (cf. above), evaluative qualitative text analysis (in analogy to our deductive category assignment), and type-building text analysis (see above). We think that this concept is selective, taking up only some possibilities of Qualitative Content Analysis (for a broader discussion see Mayring, 2014).

In comparison to those text analytical approaches the Qualitative Content Analysis seems to be the broadest (describing a wide set of different procedures) and most exact one (prescribing clear step-by-step models and analytical rules). So Steigleder (2008) after a praxis test of qualitative content analysis comes to the conclusion, that "it has proven its worth in many studies. With its different techniques of analysis and its methodological concept it is excellently adapted to analyze qualitatively collected material" (Steigleder, 2008, p. 197). But it should not be argued that Qualitative Content Analysis is the only legitimate text analysis procedure. It depends on the concrete research question and the quality of the material, which procedure should be chosen. If a use of the strict category relatedness and rule orientation of the Qualitative Content Analysis would

neglect important deeper aspects of the material (e.g. repressions in the sense of psychoanalysis), then other procedures (e.g. psychoanalytical text interpretation) would be more adequate.

Appendix

Excerpts from semi-structured interviews with four unemployed teachers, carried out within the framework of the research project "Teacher Unemployment" (Ulich et al., 1985).

Q = Questioner
I = Interviewee (i.e. the teacher)

Case A:

I: Well, it certainly **wasn't a strain for me, at least from the, well, the physical side of things. The contrary in fact. I was sort of pretty keen to get down to teaching at last.** You're studying, you see, for the teaching certificate and that is your course, the academic part of it, I mean, up to the First State Examination, that is... that has nothing to do with teaching as such, and in my practical - we have to do a sort of practical - and I had the luck to be able to teach a full two weeks- that was the time I was there - at a senior elementary school. Normally all you do during these practicals is sit in on other people's classes - just sit at the back; which is incredibly boring of course just listening to someone else teach for two whole weeks. And it so happened that at that time they were a bit short of teachers and the principal says to me: "Listen, I know what we'll do. You take the 8th and 9th grades in physics and mathematics, then I don't need to do that myself any more; that's extra work for me, you see and if you do it, I'll have more time for my administrative stuff."

Q: So that was still during your undergraduate period?

I: That's that's the same for everyone. The practical has to be done by everyone at a high school, senior elementary or junior elementary school. So I was able to teach two whole weeks there and I had a marvellous time. Senior elementary school is of course relatively simple as far as preparation is concerned, as the content is not so difficult. In 9th grade maths there's Pythagoras, well...

Q: We know!

I: ...which you can do more or less straight off if you're a science student, and to the students you're a magician anyway when you give them a demonstration with the circle of Thales. They say, "That's incredible, it's almost magic!" And that's what I enjoyed. that's why **I was already looking forward to being able to teach at a seminary school. Certainly, there are disappointments that the students are not as one thinks they ought to be. I mean, in a big city like this there are just a lot of problems, what with the big firm here. And it is certainly not as you really thought it was going to be, but well, it was certainly not a practice shock for me.**

Q: Hm. Not even with the large number of teaching hours you have, with preparation - and, well a lot have told us this - that the postgraduate training phase is terribly stressful, with all the work.

I: Well, I... on that point you have to remember that in the first period, the first half-year in the training school and in the third period as well, you have to remember that as a rule you only have one class per subject. So as a rule that means between 4 and 8 hours. O.K., someone with English or French might have ten hours - 5 hours English, 5 hours French in one class. But that's only 2 classes as a rule. So that's not such a problem. Where it does get a bit problematic is in the branch school, and that's probably what the people meant, there, in Bavaria postgraduate trainees work for hours...

Q: Yes, exactly.

I: ...per week, one day off. The training regulations stipulate one free day per week, if possible, which should be Monday or Tuesday. Let's say you have one day off, then there are four days left; so with sixteen teaching hours a week you average four hours a day. You certainly have work to do, no doubt about it. The point is, though,it tends to vary from school to school. If you're at a school, for instance an inner city school where you've got discipline problems, where the students just - are completely different personality-wise, then maybe you do get somehow frustrated as a teacher. But in my case at the country school - and I had the maximum number of hours, eighteen per week, and had a great many classes, a very great deal of preparation in other words, and completely - different, varied, whether it's a sixth grade class in geography or an eleventh grade in geography, that makes a difference you know. So I got to know practically all the students at the school, from the children to the adolescents. But for me that was a great, sort of, compensation - **I didn't even notice that I had so much work because I enjoyed it so much. because I saw that the students enjoyed it too.** And a little while ago I went back to the school, and you should have seen them as I arrived at the school building, immediately came running up to me when they saw me and said "Well, how are you, and are you coming back to us now?" and things like that. And they, well for me, for my part, I was really over the moon, and they said, "Oh dear, we've got such and such a teacher now and it's just not the same as it was with you,", that sort of thing. And I said "Yes", and "Where are you now?" they asked. And when I said, "I'm unemployed"
- "Incredible, we don't believe it, how could you be unemployed?"

Q: But...are they, weren't there any problems caused by the fact that when you're teaching you can't properly adjust to the children. You have rather a lot of students and - well, a lot of teachers have told us that you imagine beforehand a lot about how

you're going to devote time to each student and that people are then disappointed by what school life is really like.

I: Well, it may be that I didn't really have any advanced ideals or anything, because I'm just too realistic, I mean, if I've got a class of 35 students and I have one lesson of 45 minutes with them each week then I can only begin to think about applying general educational principles in a very very small way. I must, sort of, or rather I certainly use the, well not just the approach, but I aim for a high level, of course, in my whole work, but of course what comes out at the end is very little, because 45 minutes, 35 students, that means for each student I've got a time "ration" of about one minute. And I mean, I can't even use that time to deal with real educational issues because I have to get through the syllabus.

Case B:

I: Practice shock, yes, I used it in the thesis that I wrote too (laughs), I must say I've never really suffered from it - not directly. I was roughly aware - **you start the job really with a very positive attitude**, don't you, something like sort of "Here I am, this is me!". I know I told a friend of mine who's just finishing what I was doing in class, in the sports lesson. And he said, "No, impossible, there must be another way of doing that." And I said, "Ah, that's what I said when I was still studying," I said, "`You're all incompetent, just wait till I get there and you'll see', and that with the methods you mean, - above all with talking to them, encouraging them, saying things like `That was stupid, don't do things like that' it is really only possible in the rarest of cases." And I must say, **with the class I had initially**, **eighth graders**, **a bit of a difficult lot**, **I managed in the course of the year to get onto a good footing with them** and I never really suffered from any shock, I must say. **I just took things as they came** - and I particularly noticed very quickly that the others, the experienced teachers, had the same difficulties I had, that was it, you see. And if they have difficulties, I thought, well, then I really don't (laughs) need to get uptight about "Am I a failure or am I not a failure?" Do I, really? There are very few teachers who admit to having problems, I mean there are also very - at the schools I've been at so far - there are also teachers who're nothing but successful, apparently, and then you happen to be passing the classroom one time, and you hear the rumpus, the racket going on, and then you know. But - I was at a high school, and the staff there were very young, open for new ideas, and even the older ones, those who'd been at school for 6, 7 years, would come up to me and ask, "How would you do this?. This or that student behaves so badly, how were you taught in your training to deal with things like that?" And I felt that was great, really great, that people were willing to converse openly with one another and to say "Listen, I've got problems with this or that student, what do you do and how does he behave with you?" And that's what I found was the best solution for practical problems that occurred. But I had no direct practice shock. I'm really very flexible (laughs), and if anything shocking really happened, then - or whenever it did happen - then **I always knew how I should react.** Whether it was educationally valuable, my reaction, whether I could have reacted differently, well, things always look different with hindsight, don't they; but at that particular moment, especially in a sports class, shouting (laughs) is often much more useful than going up to the person and talking to them intently, because then it's probably too late...

And then particularly in class, I always had very large classes, you see, in geography above all, 30 was the smallest number, but I often had around 38, and that's, I mean, then there really are situations arising which cause problems, I mean, you're talking to one student and the rest just start messing about, you talk to

another student, and...that's...you have hardly any chance, you see, and you're really forced then to do things, act in a way that - (laughs) to be really honest - I could never have imagined behaving, and the stupid thing is, you're in that situation, the situation is there, has arisen, the students expect you to do something. You've got to react and - things get done and said of course which I think to myself now, "Jesus, that was ridiculous the way you dealt with that one", or "Wouldn't it have been better to have reacted in such and such a way?" But...then...

Q: Is the way you learn to deal with discipline problems in the postgraduate training phase adequate? Or is that...

I: Well, ...I...must...you learn, you adopt or develop a certain, well, repertoire, I suppose, of certain reactions to situations. Quite honestly, I must add that a principal once pointed something out to me, he said, "Take the postgraduate phase as an experimental one. Try out whatever there is to try out. When you're a fully fledged teacher later, you'll find you have an image you're tied to. You can't just say `Well I'll react like this today and like that tomorrow!'" So I always had that in the back of my mind and tried out a few things. Somebody once said: "Just give the desk a decent thump with the atlas, then you'll get some quiet!" And then a situation arose where I thought, "O.K., that's what you're going to try right now!" And, well, it worked. Not for very long, mind you, but I just always tried out these things, these tips that I got from other people or had thought out for myself in answer to the question "What do you do when this or that situation arises?" And to that extent I've always worked at self-improvement and said to myself: "That was acceptable" or "That was a bad move, that one." Of course, you've got to be consistent and push on to the bitter end. You can't say "That has failed, time for a retreat." That is - it depends on the classes, but the classes I was in, I believe, wouldn't have tolerated retreat. That would just have meant emptiness, nothing. I mean you're certainly in a dilemma there a bit, aren't you. But a lot can be learned from a student's behaviour. And I must say, I've always basically had - only the negative points are coming out now - good relations with the students. And that partially comes from the fact that I was often with them on school ski-trips and then you get to know each other in a completely different way - and in sports classes you have a different relation to the class anyway, one that you can't really compare, I don't think, with the atmosphere of normal classroom work. In geography it takes a bit longer. Firstly you sometimes have only one hour a week in the subject, and if you don't also teach sport in the same class, then (laughs) then after half a year you know..., you can think yourself lucky if you know the students by sight and can sort of at least place their faces (laughs). But of course that's not very much, and then the contact to the class isn't so good. -

Case C:

I: Yes, that is a big problem, no doubt about it, but of course you must bear in mind that with, during the postgrad training phase everyday school life only partly falls on one's own shoulders, somehow - so you're always aware...because primarily, I'd say, you see the function, or I should say your own dependence on the seminary instructors, that's the thing that is the really dominant factor first and foremost, - during the university course there was this education practical, the practical credit you have to do, so that you have to go to school and do a few..., that's been made considerably more intensive now, I think.

Q: Hm, yes.

I: They didn't have that in the past and you only went into one or other class for two weeks or so, mostly only as an observer, and then you held a lesson, and I thought, Jesus, that's pretty meagre, really, that's not what I expected, it really ought to be done like this and that, but on the point that - this idea that you sort of develop, you can't put that into practice at all during postgrad training, I've seen it myself, - I didn't really see it myself that way, of course, more - the role I was playing more, like all the others too, I suppose, - all the other trainees too, that we were all concentrating really - somehow **looking to get assessments which were as good as possible**, and everybody tries there somehow to (laughs) work out a plan, or thinks he has worked one out.

Q: Hmm.

I: A plan or an idea of how he can best fulfil the expectations of the seminary instructor and that of course **leads to a conflict situation if you, - yourself really wanted to be doing something else in that situation, but because of these external criteria, which are quite openly assessed.**

Q: Hmm.

I: By the seminary instructor. - teacher, this - this, well, this or that action is not appropriate and therefore things shouldn't be done like that, as much as if to say, putting it in clear terms, that you have to fit in from the beginning with what the seminary instructor has in the way of ideas and policies. And that was not so...

Q: And did you have problems on that point?

I: Pardon?

Q: Did that create any problems for you, was it difficult for you?

I: Oh yes, it was, because I didn't, because I'm not really the type that can apply mechanical rules from the beginning, right from the first meeting with a new class.

Q: Hmm.

I: Instead of that and despite everything, one looks to develop some sort of relationship to the students, which means that as a consequence your reactions, or rather one reacts in some cases perhaps differently from the way one is somehow expected to react according to the official credo. One reacts partly in the way one thinks fit, although of course occasionally one makes mistakes (laughs).

Q: Hmm.

I: It might also be the case, that this, and I quite admit this, that this might not be - well, speaking objectively, perhaps not quite so pronounced as I thought myself. **Perhaps I'm a bit, well perhaps a bit over-sensitive on that point**, I suppose.

Q: Hmm.

I: But I do know from conversations with other trainees at the seminary that most of the others felt the same way as I did.

Q: And that has particularly to do with the ideas the seminary instructors have?

I: Yes, with their ideas on the one hand and then - with the permanent feeling or awareness you have that you must get a good mark, as good a mark as possible.

Q: Hmm.

I: And - you get told in more or less as many words that the average mark must somehow be adjusted on the basis of how you shape up generally with your instructors. So the marks are not just a reflection of what happens in the classroom itself, but of how you're assessed verbally, so that of course you - you try for all you're worth to get as good an assessment as possible.

Q: So that is what you might call "pressure to conform"?

I: Yes, certainly, that's the way I see it, yes.

Q: Hmm.

I: It could of course be that in the immediate future that will lose some of its force, as everybody knows there will be no chance of employment (loud laughter).

Q: (Also laughs) And how was it solved, that problem?

I: **I'd say, right up to the end**, the oral in the Second State Examination, which only counts one-seventh of the total postgrad phase, I'd say that the problem was with us right to the bitter end, really.

Q: Hmm.

I: Well, all right, after the third lesson test it had probably disappeared.

Q: Hmm.

I: Up to the autumn in other words.

Q: Did it in any way take its toll on your nerves?

I: Yes, it did, I must say. The opportunity is also given you to repeat the postgrad training phase if you want a better mark.

Q: Yes, yes.

I: Then it would be counted again, - but quite honestly I'd never have been able to do that, just from a psychological point of view.

Q: Hmm.

I: Especially as there's be no advantage in terms of formal calculation, as it only counts for two-fifths of the total mark.

Q: That of course isn't very much.

I: And I mean, I've got no illusions, grade one lesson tests are not within my province and the impression that I'd never get a one, that makes the whole thing illusory. In any case you can only improve your total mark by a maximum of three-tenths, I think. So you're not helped much by improvement in just one single assessment mark.

Q: Hmm. Did that in any way affect your self-confidence, this pressure to conform?

I: - **(in a small voice) Yes, I suppose it did really**, - it's sort of, well, it lost some of its edge in everyday school life, I'm not too sure how to put that (laughs) - I didn't, well, it wasn't like what you had thought in advance, I mean the ideas you had, it wasn't as if they were completely wrong, or you said to yourself "I can't deal with children after all", I mean I didn't come to that conclusion, - it's more, I think - **it eats away at you, and for that reason - makes inroads into your self-esteem**, I suppose.

Q: Hmm.

I: Although it varies according to what type you are, I think. Some are not so bothered, they put on more of a face, they regard it more as, let's say you could see it this way, that the educational qualities they already have, though I'd put "educational qualities" in inverted commas, that they say to themselves, well, it has to be done like that, it has to be done like that, and then they do it like that. And if they're lucky it goes well for them, precisely because they've done it like that, and that's all right, isn't it.

Q: Hmm.

I: This might be a bit of an exaggeration, but I'd say it's very important, especially in sport, and I'm certainly not the type, not at all, no - well, I wouldn't quite say extravert, but the more lively you are personally, in speaking or dealing actively with adults, or constantly - having new ideas or even making the odd criticism of seminary instructors, but in a witty or jocular way, more a "master-of-ceremonies" type; they are a great success, I believe.

Q: Yes, hmm (a little insecure).

I: But that of course is a question of mentality. How can that sort of thing be assessed (laughs) or made into a yardstick?

Case D:

I: That all depends on what expectations one has about school life. I had very very low, well, slight expectations on let's say an ideological or educational level as far as my seminary training was concerned. I had no intentions of following a certain, a certain pattern, let's say, or of putting certain ideas into practice through my teaching. I was solely interested in whether the children would like me and that I would do the job that I had to do as well as I could do it. And then try to teach them something personal: those two components, in other words: subject-biased/personal.

Q: And did that work?

I: No! (laughs). It didn't work. I mean, let's put it this way: these pragmatic demands, expectations, they're in any case a bit, they're rather petty, unimportant, not even they worked. And the reasons were a) **because one has had no experience**, one just stands there in front of the class as a human being, not as a teacher. And that is not accepted. Then, secondly, conditions at the seminary school. The children in a seminary school like that always say, aha, here comes another new teacher trainee. One could be the third trainee within a single year, that's something you shouldn't forget, especially what the children all have to put up with. Another one, they say, here comes another one!

Q: They know that of course.

I: They know exactly that one is not an independent teacher, but just someone who gets a lot of stick from above. That's the second point. And then the third point is that the, the pressure from seminary instructors... **That you, they make you feel so small, everything - every word, every gesture, everything. Whoever you are, they'll first destroy you through criticism. All they do is criticize, that was the case with me. And then you are, your self-confidence is zero-level** and then you're supposed to go in front of a class and exude self-confidence and, and knowledge and authority and leadership. You just can't master a conflict like that.

Q: Well how did you solve that problem for yourself?

I: I did it like this. Every time when, when, well, the first and third periods of the postgrad phase were totally chaotic. In the branch school it was better. We were relatively independent there. And for me personally, well it really finished me off, but it was the same with all of us. So it was, well we finished our seminary training feeling that big: very very very small.

Q: And the main factor was the pressure put on you by the seminary instructors?
I: Yes, and the criticism you were exposed to. Towards the end

now, you thought, well, **you'd taught classes for a whole year quite satisfactorily. Or sometimes you really did have a good relationship, got on well with the class.** Then out you came and sure enough, every lesson you held was pulled apart until nothing was left of it. And you thought, my God, what am I? Your self-confidence..that all you'd done the whole year was apparently nothing but rubbish, that nothing you'd ever done was correct. That's the feeling you have.

Q: And all the other problems, like not getting on with classes, followed on from that?

I: **But we did get on with the class**, as we now had a bit more teaching experience, I mean we know on the basis of a year's experience at the branch schools, there we did...we know now how children are taught things. What really got to us was the fact that that wasn't accepted by the seminary instructors.

Q: I mean particularly right at the beginning as well, when you're starting fresh.

I: That was completely...when I think back to...

Q: That was complete chaos.

I: Yes, complete chaos. Inwardly, personally and then this shock at the seminary instructors and the classroom situation. When we were left alone the first time, without a seminary instructor sitting at the back, they went mad, all hell was let loose and (laughs) that was the first shock, how to go about imposing your will on the class for the first time. That's the first step. The second step is that when you're standing there in front of the class and you can keep them all quite, that you can actually convey something, teach something to them. And at the beginning we never managed that at all, because a certain method is necessary for that and that is what you must first learn.

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