Category Positioning—A Qualitative Content Analysis Approach to Explore the Subjective Importance of a Research Topic Using the Example of the Transition From School to University

Cornelia Driesen

Abstract: Category positioning is a new methodological procedure for organizational (higher education) research which can be integrated in qualitative content analysis. The objective of this methodological procedure is to ascertain the subjective importance that management members attach to a researcher’s topic relative to other strategic topics. Using category positioning, including additional analyses, I try to overcome the problem that usually a coding frame is only identified and described by using qualitative content analysis of guided expert interviews and that this does not exactly reflect the subjective importance of the research topic. During my doctoral studies I developed an approach, where I combined the frequency and the sequencing of the inductive content analysis categories to emphasize the subjective importance of a particular category. Practically, the procedure is a combination of chronological category sequence analysis derived from German linguistics and category frequency analysis. I present the procedure using the analysis of my doctoral studies “The Transition From School to University in University Development Planning From the Perspective of University Management” as a case study.

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1. Introduction

Strategic planning in organizations is focused on various strategic topics. However, each of these strategic topics is assigned a different level of importance by the management of the organization (SCHEDLER & SIEGEL, 2004). If a researcher turns one of these strategic topics into a research topic, he or she has a particular research interest in determining the subjective importance of that topic, i.e., the subjective importance the manager attaches to his or her specific research topic, relative to other strategic topics. In the context of qualitative organizational (higher education) research, however, it is a methodological problem to find a suitable method to determine the subjective importance attributed to a topic. [1]
In general, interviews with management staff have successfully been used in organizational research (KIESER & WALGENBACH, 2010). As a consequence, qualitative content analysis is particularly important for data analysis (AMETOWOBLA, BAUR & NORKUS, 2017). After conducting the primary data analysis using qualitative content analysis, further analytical steps may be needed to fully answer the research question (STAMANN, JANSSEN & SCHREIER, 2016). Accordingly, the question that arises is: How can additional analyses be implemented in qualitative content analysis to discover the subjective importance of the research topic mentioned by the managers interviewed?

In this article, I illustrate a practical methodological procedure to identify the subjective importance of research topics. I outline this procedure using the example of a study investigating the transition from school to university. The rest is structured as follows. After briefly explaining the example used in this article (Section 2), I focus on data analysis. I illustrate additional analytical steps in an inductive, content-structuring qualitative content analysis (Section 3), namely category frequencies (Section 3.1) and category sequences (Section 3.2). These can be implemented in combination in qualitative content analysis, which I refer to as category positioning (Section 3.3). Overall, I stress that this new methodological procedure allows for determining the subjective importance of the research topic relative to other strategic topics mentioned by the manager interviewed. Subsequently, I critically discuss this new methodological approach (Section 4).

2. The Transition From School to University as an Exemplary Research Topic

The question of a suitable methodological procedure to investigate the subjective importance of a topic came up during an organizational (higher education) research study on school-university transition (DRIESEN, 2018; DRIESEN & ITTEL, 2017, 2019). While evaluating the current state of research on this subject, we noted that several researchers concluded that universities are concerned about the topic (WILDT, 2013) in addition to numerous other topics, such as research, teaching, and internationalization (ESDAR, GORGES, KLOKE, KRÜCKEN & WILD, 2011). However, few empirical studies on the transition from school to university have been conducted from the perspective of the university as an organization (BO SSE & TRAUTWEIN, 2014). Consequently, we intended to fill this gap by conducting a qualitative study on the transition from school to university from the perspective of university management.

Accordingly I interviewed 15 members of higher education management at 14 universities (abbreviated as HS 1 to HS14) during my doctoral research studies from July to December 2014. I considered the interviewees experts on this topic due to their decision-making power (LITTIG, 2008). Sampling followed a qualitative sampling plan (SCHREIER, 2010) using the criteria of institutional
status, university size, and regional location (BECKER, TADSEN, STEGMÜLLER & WILD, 2011). In the following, I explain how I analyzed the interviews and how my methodological procedure can be used to uncover the subjective importance of topics using qualitative content analysis in conjunction with further analytical steps. [5]

3. Implementation of Additional Analyses Within Qualitative Content Analysis

The data analysis is based on an open-ended introductory question that was identical for each participant and was stated at the beginning of each guided expert interview (BOGNER, LITTIG & MENZ, 2014). This introductory question referred to the topics relevant to university development planning, which is obligatory in Germany. These topics are set by university management and indicate the university’s thematic priorities during the survey period (BERTHOLD, 2011; SCHERM, 2014). The introductory question of the guided expert interviews was as follows:² "As part of your university's development planning, specific priorities are set for the next few years. Please state which of these will be especially emphasized over the next few years."³ [6]

Initially, I conducted an inductive, content-structuring qualitative content analysis (MAYRING, 2014) of all the responses to the introductory question. I did this with the aim of indicating topics relevant to strategic planning. In this way, "the researcher is able to ascertain which topics are being dealt with, which statements the topics are included in and, if applicable, what these statements will result in"⁴ (KOCH, 2016, p.30).⁵ [7]

In this study, I applied this procedure to identify those topics that the university management staff interviewed had described as part of their university’s development planning. The final coding frame (in the terminology of MAYRING (2014): category system) comprised the following nine categories: "diversity and equal opportunities (a)," "research profile and structures (b)," "university structures and management (c)," "internationalization (d)," "teaching profile and quality (e)," "staff development (f)," "regional location (g)," "school-university transition (h)," and "further education and training (i)." In Figure 1, a schematic representation is given of the development of the category of "school-university transition" as a component of the final coding frame by means of material exploration, reduction, subsumption, and category formulation (MAYRING, 2014).

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² The opening question was not asked in interview 4b. This interview has not been taken into account.

³ "Im Zuge Ihrer Hochschulentwicklungsplanung hat sich Ihre Hochschule für die kommenden Jahre bestimmte Schwerpunkte gesetzt. Formulieren Sie bitte, welche Sie besonders in den kommenden Jahren im Blick haben."

⁴ "Der Forschende kann auf diese Weise feststellen, welche Themen verhandelt und mit welchen Aussage(richtungen)n diese Themen aufgegriffen werden."

⁵ All translations are mine.
However, this usually results in an overview of topics in the form of a coding frame that "has the character of a descriptive inventory" (KOCH, 2016, p.29). Even if qualitative content analysis is considered to stand between description and conceptualization, as proposed by SCHREIER (2016; see also JANSSEN, STAMANN, KRUG & NEGELE, 2017), the resulting categories lead merely to the identification of the topics. However, this does not allow for gauging the subjective importance of each topic. In this research project, my goal is to determine the subjective relevance of the research topic "school-university transition," which I identified as one category of many while analyzing the data. In order to determine the subjective importance of this research topic, STAMANN et al. (2016) have suggested to augment the coding frame with further analytical steps. Hence, the result of the inductive qualitative content analysis, the coding frame, serves as a foundation for the subsequent analysis. [9]
3.1 Category frequencies

To further analyze the coding frame, Philipp MAYRING (2014) recommends, among other things, the implementation of quantitative steps within the qualitative content analysis in order to substantiate the relevance of a category. Such frequency analyses the number of occurrences of the individual categories in the final coding frame is compared. Accordingly, the nine categories of the example were counted across all cases to ascertain their total frequencies (Table 1).

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Category name</th>
<th>Category frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Diversity and equal opportunities</td>
<td>3</td>
</tr>
<tr>
<td>b</td>
<td>Research profile and structures</td>
<td>14</td>
</tr>
<tr>
<td>c</td>
<td>University structures and management</td>
<td>6</td>
</tr>
<tr>
<td>d</td>
<td>Internationalization</td>
<td>6</td>
</tr>
<tr>
<td>e</td>
<td>Teaching profile and quality</td>
<td>20</td>
</tr>
<tr>
<td>f</td>
<td>Staff development</td>
<td>4</td>
</tr>
<tr>
<td>g</td>
<td>Regional location</td>
<td>6</td>
</tr>
<tr>
<td>h</td>
<td>School-university transition</td>
<td>5</td>
</tr>
<tr>
<td>i</td>
<td>Further education and training</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 1: Analysis of the category frequencies [10]

The frequency analysis indicates the most frequently coded categories across all interviews (e.g., all five occurrences of "school-university transition"). However, equating the pure frequencies of the categorized paraphrases with their relevance and, thus, their importance, is disputed in the literature (RAMSENTHALER, 2013). On the one hand, MAYRING (2014) assumes that the combination of qualitative content analysis and quantitative analysis is an appropriate means of assessing the importance of a category within the coding frame. This position results from the epistemological assumption “that there is a correlation between the frequency of occurrence of certain categories and the subjective importance of the topic described in the category” (GLÄSER & LAUDEL, 2009, p.198). On the other hand, Christina RAMSENTHALER (2013) explains that the number of times a category is mentioned does not necessarily allow one to make a statement about the subjective importance of these categories, as such a quantification does not represent the content of the interview. Added to that, a lack of case-relation and low frequencies of categories can lead to distortions. Consequently, such an analytical procedure can lead to premature generalizations, with qualitative relations being ignored. Accordingly, additional frequency analyses in qualitative content analysis, on their own, do not allow for a conclusion about the subjective importance of a topic in relation to

7 “dass es einen Zusammenhang zwischen der Häufigkeit des Auftretens von bestimmten Kategorien und der Bedeutung des Sachverhalts gibt, den sie beschreiben.”
other topics in each case. The quantification of the qualitative content proposed by MAYRING (2014) is therefore not sufficient for determining the subjective importance of the research topic relative to other topics. However, this epistemological assumption provides a starting point for finding a suitable procedure. Therefore, I suggest supplementing the coding frame with a category sequence analysis. [11]

3.2 Category sequences

In German linguistics, the overall importance of an element is subject to the maxim: "Address the most important topic first, followed by the less important one" (LÖTSCHER, 1991, pp.91-92). Accordingly, the subjective importance of a topic can be reconstructed by reviewing its chronological occurrence within a statement. As far as the subjective importance of the research topic compared to other topics is concerned, I based further analysis on the assumption that the chronology of the category sequences reflects the subjective importance of a topic. Applied to the example used in this article, the earlier a university management member mentions a topic, the greater its supposed importance for university development planning. [12]

Based on this premise, I analyzed the chronological occurrence of the categories in each interviewee’s initial statement. Based on Christian-Rainer WEISBACH (1979), I generated a graphic representation of the chronological occurrence of the categories for each case. In Figure 2, such a representation is depicted, using case HS 5 as an example.

Figure 2: Graphic representation of the category sequences of case HS 5 [13]

Figure 2 indicates the occurrence and the chronology of the categories. For HS 5, the category sequence is b-d-f-b-d-g-a-c-e-h-c-e. However, comparing the graphs of all cases simultaneously is difficult with graphic representation. Therefore, I represented the category sequence by means of a sequential timeline for each

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8 “Thematisiere zuerst das Wichtigste, dann das weniger Wichtige.”

9 Linguistics provides fundamental concepts for the analysis of interviews (MAYRING, 2014). This includes the understanding as well as the explanation of the thematic text structure by German linguistics (LÖTSCHER, 1991). Such paradigms, developed in such scientific disciplines can be drawn upon for qualitative content analysis (MAYRING, 2014).
The so-called category sequence (WEISBACH, 1979). Figure 3 shows the category sequencing of the initial responses for all cases using abbreviations for each category.

<table>
<thead>
<tr>
<th>Case</th>
<th>Timelined category sequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS 1</td>
<td>e</td>
</tr>
<tr>
<td>HS 2</td>
<td>b</td>
</tr>
<tr>
<td>HS 3</td>
<td>b</td>
</tr>
<tr>
<td>HS 4a</td>
<td>b</td>
</tr>
<tr>
<td>HS 5</td>
<td>b</td>
</tr>
<tr>
<td>HS 6</td>
<td>b</td>
</tr>
<tr>
<td>HS 7</td>
<td>c</td>
</tr>
<tr>
<td>HS 8</td>
<td>e</td>
</tr>
<tr>
<td>HS 9</td>
<td>b</td>
</tr>
<tr>
<td>HS 10</td>
<td>b</td>
</tr>
<tr>
<td>HS 11</td>
<td>h</td>
</tr>
<tr>
<td>HS 12</td>
<td>g</td>
</tr>
<tr>
<td>HS 13</td>
<td>b</td>
</tr>
<tr>
<td>HS 14</td>
<td>b</td>
</tr>
</tbody>
</table>

Figure 3: The timeline of category sequencing [14]

It can be observed, for example, that the "school-university transition" category occurs in 7th position for HS 2 and in 1st position for HS 11. As every case is unique, an interpretation of these timelined category sequences, taken on their own, is difficult since the case orientation limits the possibility of more generalized conclusions (JANSSEN et al., 2017). A general statement about the subjective importance that the manager interviewed attaches to the research topic relative to other strategic topics, therefore, remains difficult. Nevertheless, by combining the case-oriented method with a category-based method it becomes possible to obtain more generalizable results (JANSSEN et al., 2017). Thus, I combined the two supplementary methods and implemented them into qualitative content-analysis. [15]

3.3 Category positioning

Category positioning as a solution of the methodological research problem was developed on the basis of the example illustrated in this article. The epistemological assumptions with regard to frequency analyses and category sequences were combined and implemented as an additional step in qualitative content analysis. Specifically, a matrix was developed (Figure 4) with a focus on the quantification of the cross-case category frequencies in relation to their case-related category sequences to ascertain their category positioning.
Figure 4: Derived sequence-quantification matrix for category positioning [16]

Through this new method of category positioning, I show that certain categories occur more frequently in an earlier position. Moreover, by means of the derived sequence-quantification matrix it is possible to determine the importance of the categories relative to one another based on their positioning. In the example used here, the interviewees tended to present the categories of "research profile & structures (b)," "teaching profile & quality (e)," and "internationalization (d)" more frequently and earlier than "school-university transition (h)," in all instances. It can also be seen that the category "school-university transition (h)" occurs by itself and is scattered among the other categories. This indicates the subordinate subjective importance of "school-university transition (h)" for the university management relative to the three above-mentioned topics of university development planning. Compared to the categories of "diversity & equal opportunities (a)" and "further education & training (i)," however, it is of higher importance. With this additional analytic step, it becomes possible to reconstruct the subjective importance the interviewees attach to the research topic in comparison to the other strategic topics. It can be concluded, for instance, that "school-university transition (h)" is positioned in the middle of all categories. Thus, the combination of the results of the preceding analytical steps is one solution to the methodological research problem. [17]

4. Summary and Discussion

In this article, I presented a methodological approach for determining the subjective importance of a research topic mentioned by the managers interviewed in relation to other strategic topics. I illustrated the individual steps of the methodological process by using the example of school-university transition as a component of university development planning. Overcoming the problem of a mere identification and description of the coding frame following a qualitative content analysis of guided expert interviews, I focused on "how to proceed after the construction and application of the coding frame" [10] (STAMANN et al., 2016, §20). I combined the epistemological assumption regarding frequency analysis (MAYRING, 2014) and the German linguistic paradigm of category sequences (LÖTSCHER, 1991; WEISBACH, 1979) to develop category positioning as a new qualitative-analytical tool. Overall, by implementing category positioning as an additional analytical step in qualitative content analysis, it becomes possible to investigate the subjective importance of research topics in comparison to other strategic topics.
make sure that the results closely match the original interview statements and to fully answer the research question. The steps I described in this article thus constitute a practical research method for indicating the subjective importance of the research subject relative to other topics in the strategic planning undertaken by executives in organizations. [18]

Of course, a few limitations should be noted. A first limitation concerns the research question itself. The main interest of the researcher is to ascertain the importance of the research topic relative to other competing topics in the organization at the beginning of the process of planning research. The open-ended introductory question of the expert interviews must be used to prompt the interviewees to mention topics in the strategic planning of their organization without them having been primed with the research topic. A request for them to state the specific priorities of the organization at a later point in the interview may lead them to emphasize the research topic in particular. [19]

Second, a "critical, reflective consciousness"11 (JANSSEN et al., 2017, §21) is also necessary for generalizability. Thus, the results presented here remain a subjective view and are restricted to the qualitative sample. It should also be noted that the coding frame of qualitative content analysis so far can only be used to provide statements about the explicit content of the communication (KOCH, 2016). Factors that, for instance, may have led to the particular sequencing of the topics mentioned by the interviewees have previously not been taken into account. In accordance with the content-analytical communication model (MAYRING, 2014), an explanation of the communicative context, at least during interpretation, may lead to a more nuanced view of the results. An analysis of the interviewees' emotional, cognitive, or behavioral backgrounds may be used to clarify their adherence to the structure of a written strategic planning document or to current events. However, other methods, such as hermeneutics, are required for the reconstruction of such latent structures of meaning (JANSSEN et al., 2017). Since the research interest and the research question that are the focus of this article do not concern latent content, the methodological procedure presented is nevertheless adequate. [20]

Despite these challenges and limitations, it is possible to identify trends relevant to the initial subjective importance of the research topic by using the method of category positioning in qualitative content analysis. The strength of the method is primarily that the current state of research is augmented with subjective classification. Qualitative content-analytical data analysis, including category frequency, sequencing, and positioning, allows drawing conclusions about the interviewees' intra-organizational operational knowledge and supports subsequent interpretations of the research topic. The results of such analyses should always be taken into account when conducting further research. [21]

11 "kritisches, reflexives Bewusstsein"
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Author

Cornelia DRIESEN, M.A., is an external doctoral candidate at the Institute of Education/ Department of Educational Psychology of the Technische Universität Berlin. In her doctoral thesis, she investigates strategies and organizational structures for the school-university transition at German universities. The political sciences graduate thus combines her research interest in management and organizational research, and higher education research.

Contact:
Cornelia Driesen, M.A.
Technische Universität Berlin
Institute of Education, Department of Educational Psychology
Marchstr. 23, sec. 2-6, 10587 Berlin, Germany
Tel.: +49 30 314 73524
Fax: +49 30 314 73223
E-mail: driesen@campus.tu-berlin.de
URL: https://www.paedpsy.tu-berlin.de/menue/ueber_uns/team/wissenschaftliche_mitarbeitende/cornelia_driesen

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