Empirically Testing Thematic Analysis (ETTA)

Methodological implications in textual analysis coding system

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Text analysis is not a question of a right or wrong way to go about it, but a question of different traditions. These tend to not only give answers to how to conduct an analysis, but also to provide the answer as to why it is conducted in the way that it is. The problem however may be that the link between tradition and tool is unclear. The main objective of this article is therefore to present Empirical Testing Thematic Analysis, a step by step approach to thematic text analysis; discussing strengths and weaknesses, so that others might assess its potential as an approach that they might utilize/develop for themselves. The advantage of utilizing the presented analytic approach is argued to be the integral empirical testing, which should assure systematic development, interpretation and analysis of the source textual material.

Keywords qualitative methods, research methodology, symbolic interactionism, textual analysis
When it comes to text analysis, it would seem that there is not a single right or wrong way to go about it. There are only different traditions, and these tend not only to give answers to how one should conduct an analysis, but also provide the answer to why an analysis is conducted in the way it is. The problem for students and newcomers, however, is that the link between tradition and tool may often be blurred, non-existent or simply taken for granted. If research quality is to be evaluated, one could argue that minimum levels of stringency and transparency are required, not only in the sense of a clear thread in the logical construction of how the analysis was conducted, but also in the sense that the methodological issues are clearly accounted for and that limitations, strengths and weaknesses are addressed [1]. Consequently, having developed an approach to qualitative text analysis (consistent with the central tenants of symbolic interactionism (SI)) known as Empirically Testing Thematic Analysis (ETTA), the main objective of this article is therefore to present a step by step approach to thematic text analysis and in so doing, to discuss strengths and weaknesses of such an approach; so that others might assess its potential as an approach that they might utilize/develop for themselves.

Being a student or having worked with colleagues side by side over the years, the choice of a particular method to perform a text analysis can seem a straightforward business executed with very few reflections in regard to the ‘how’s’ and ‘why’s’; the use of the particular tool is perhaps being taken for granted [2]. Depending on how well-established or challenged one’s own field is, newcomers and/or young disciplines (e.g., nursing research) might find the opposite to be the case and the choice of method is no longer a question of ‘method and use’ but a question of exactly ‘how and why’. On reviewing the literature, it becomes clear that both the definition and purpose of text analysis (e.g., thematic and content analysis) varies considerably [3–6] and can be subdivided into an array of traditions/approaches [7–9]. Whereas content analysis is engaged in categorising and attaching importance to systematics [10], and in its classic form is concerned with reducing text into variable dependent units and analysing this quantitatively [11], thematic analysis is concerned with the establishment of themes, interpretation and internal structures in the text [12]. Research literature tend to describe thematic analysis as the qualitative version of text analysis that is engaged in the non-numerical pursuit of themes with the aim: “...to understand the latent meaning of the manifest themes observable within the data, which requires interpretation” [13, s.57]. Or “...an analysis where the researcher identifies themes and patterns...It involves searching the data for related categories with similar meaning. These are then grouped together and themes inferred and generated from the data” [14, s. 152]. In other words, the establishment of themes, in-
terpretation, internal structures and semantic relations in the text (12) seems to be pivotal in thematic analysis. The underlying methodological natures of the method or approach are seldom made clear and the connection between the “how” and “why’s” are subsequently left unaddressed. Therefore, in contradistinction, we identify ETTA as drawing on the methodological approach from within symbolic interactionism (SI) associated with the work of Herbert George Blumer (1900 – 1987) (15, 16). It should be seen as an approach for systematic exploration of text, involved in grouping, sorting and interpreting semantic relations from text with the aim of answering a specific set of analytic questions to present an empirically tested answer in terms of themes.

ETTA is designed to be a practical approach to working with text, but draws on the methodological approach of SI (16). SI is at its core about obtaining insight into the way humans create meaning as they relate to “things” they encounter in the world. Humans do that by perception, interpretation and if needed re-indication. ‘Things’ should be understood as anything that humans can relate to, including text (16). Of central importance is that the real world does not have a “fixed makeup” and that the truth about this world is made up by humans perceiving and interpreting it; thus concepts such as “truth” and “meaning” are conceptualised as human constructions (16, 17). ETTA is linked into this fundamental assumption, in that it deals with meaning at text level and acknowledges that the end product of any analysis that relies on interpretations can only be yet another human construction, because the world under investigation (the ‘empirical world’) itself is bound in a particular time and space (18). Perception, interpretation and assignment of meaning, however, may still be judged by oneself or others for the acceptability of any given analytic construction (19).

The question guiding the methodological use of ETTA therefore becomes ‘what is an acceptable interpretation of the subject at hand?’ To ensure acceptability, Blumer relies on a fundamental respect for the empirical world under study, the concept of empirical testing and inspection (16) and draws up the following basic methodological requirements of an empirical science:

To confront an empirical world that is available for observation and analysis;
To raise abstract problems with regard to that world; To gather necessary data through careful and disciplined examination of that world; To unearth relations between categories of such data; To formulate propositions with regard to such relations; To weave such proposition into a theoretical scheme; and to test the problems, the data, the relation, the propositions, and the theory by renewed examination of the empirical world (16, s. 47–48).

In relation to the use of ETTA, the empirical world should be understood as text, since it is a method for analysing text not gathering data. Conceptually,
ETTA draws on existing ideas inside the area of text analysis and reflects a need for a text analysis that clearly and systematically operationalizes the use of ‘first reading’ and the identification of themes, combined with the use of analytical questions and an empirical tested construction of themes. Also it reflects the need to take data qualities like authenticity in to account and present a clear description of how to sub group themes without losing the semantic coherency inside the main themes. In the following section the workings of ETTA are presented and methodological requirements as formulated above are drawn to attention, so as to explain not only “how” one could approach text analysis, but also “why” emphasis are put on specific elements and structures of the analysis in regard to the underlying methodology.

Fig. 1. The Empirically Testing Thematic Analysis (ETTA)
The inner workings of ETTA- step by step

In a recent study the researchers wanted to investigate the characteristics of forensic mental health staff interaction with forensic mental health inpatients and explore how staff give meaning to these interactions. Data was constructed using observations and interview and in the following walkthrough data from this study is used as an empiric text sample (20).

Step 1 – First reading

As shown in fig.1, the empirical source material is first read through (first reading) with the intention of creating an overview of the text elements and an immediate marking of thematic headlines (21). The identified themes derived from the reader's first grasp of meaning when answering the question 'what is this text about?' are identified as thematic headlines. The purpose of recording these elements is to identify overriding structures and themes, which at a later point would be unobtainable because of the impact of specific coding; thereby protecting the analysis from loss of completeness (21). The point is not to overlook overriding themes, concepts and structure in the text and thereby respect the nature of the empirical world under study (16). In the study, the many hours of interview and observational transcripts had to undergo a ‘first reading’ and an array of notes were made (e.g. humour connected to staff’s perception of normality vs mental health, staff being the ones that define normality, humour connected to the building of relationship and humour used with a double set of standards). In step 8 these observations turned out to be important in the formulation of propositions with regard to the relations between categories in the data, since this important meta perspective would otherwise have been lost (16).

Step 2 – The analytical question

Text analysis can be seen as: “... the set of questions one engages the text with in order to solve a specific thesis ...” (22). It is not only the question of systematic reading of text, but the systematic reading of text to answer a specific set of questions related to the underlying study (4). The notes from the first reading are at this point put aside and abstract problems with regard to the empirical world under study (16) and all attributes (theory, limitations, account inclusion and exclusion criteria etc.) are rephrased into analytic questions (Fig.2.). In other words, technical questions whose core concepts were defined with pre-established inclusion and exclusion criteria for use in the subsequent coding (4).

Fig.2. Example of the difference between an analytical question and a study aim.

<table>
<thead>
<tr>
<th>Study aim example</th>
<th>“... to investigate what characterizes the staff interaction with inpatients”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical question example</td>
<td>“What characterizes the ways* in which forensic mental health nursing staff** interact with the hospitalized, ethnic Danish patient over the age of 18, diagnosed with schizophrenia F20***?”</td>
</tr>
</tbody>
</table>

* This accounts for the semantic relation A is a way of B. ** This defines the concept of staff as being mental health nurses, nursing assistants ect. ***This defines the study demarcations
As shown in Fig. 2, there is a difference between the study aim: to investigate what characterises the staff interaction with inpatients and the analytic question, in that the construct of an analytic question takes into account inclusion and exclusion criteria, clarification of concepts, delimitations and other relevant issues depending on the study (e.g. semantic relations or underlying theory).

Of central importance is the relation between text, research question, methodologies and the ability of research materials to answer the analytic question. If one poses the question of what impact psychiatric nursing care has on inpatients, it makes no sense unless the question is directed at empirical source material such as an interview or observations with a potential of presenting an answer. In other words, the empirical source material and the construct of such material is essential in the construction of a usable and valid result when developing text analysis (23, 24). However, this article limits itself by dealing only with data analysis.

**Fig. 3 Codebook example**

<table>
<thead>
<tr>
<th>Raw text selection</th>
<th>Condensation &amp; interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;(talking about use of humour)[...] Everything doesn’t always have to be so serious and, like I said, what I think is also important is that the patients can see what we staff have... other sides apart from being very sort of serious and professionally-oriented the whole time, uh [...] [2489-2513]</td>
<td>Subject heading: Humour; Staffs other side. Humour is used by staff because the daily contact doesn’t always have to be so serious. It is important that the patients can see that staff have other sides apart from being very serious and professionally-oriented. Paragraph number: [2489-2531]. Authenticity marking – EH.</td>
</tr>
<tr>
<td>I: &quot;[...]and I do it tomorrow [use the same humour as staff], would it work then? P: &quot;I think they would just shake their heads and move off, [...]&quot; I: &quot;Yeah, because I think as well they would just take me for a stupid fool.&quot; P: &quot;Yeah, maybe... but actually they are very polite, so I don’t think they would say anything, but I think they would just go away... It wouldn’t surprise me. Yes. But it’s because I know them, I have a relationship with them... That’s why I can do it, and I do...&quot; [3377-3412]</td>
<td>Subject heading: Humour; Relationship and Trust Staffs interactions are characterized by the use of humour requires that one knows the person and requires a level of relationship in order to be perceived correctly Paragraph number: [3377-3412]. Authenticity marking – MH.</td>
</tr>
</tbody>
</table>
Step 3 – Coding
As shown in fig. 1., the source material is then coded by reading through the text searching for the answer to the analytical question in the empirical material (the text). The text that answers the analytical question and the nearest surrounding text is then marked, and the paragraph numbered, copied and pasted into a table every time the reading of text reveals a possible answer to the analytical question (see fig. 3). Only text that answers the analytic question, or is deemed important towards answering the analytic question, is coded. The paragraph number is kept all the way through the analysis, so that reconnection with the original text is possible at all times; so that it is possible to trace later interpretations back to their origin. The purpose of this step is to gather necessary data through careful and disciplined examination of the text at hand (16). By using the analytical question, every text section that answered the question was systematically filtered out from the body of text (e.g. text regarding humour as an answer to what characterises staff interaction).

Step 4 – Condensation
Opposite every code result the answer to the analytical question is interpreted from the coded text-piece (fig.3), presented in a condensed form and marked with an immediate subject heading (25) and a marking of authenticity. Conceptually, ETTA distinguishes between three kinds of authenticity markings:

- Empirical subject headings (EH): e.g. terms used by participants in the empirical source material.
- Mixed subject headings (MH): contain both empirical and analytical material.
• Analytical subject headings (AH): constructed from the researcher’s analytical interpretation of the answer to the analytic question in relation to the empirical source material (26).

The three distinct heading types above are used to indicate authenticity and, by so doing, qualify the subject headings and condensed material with an indication of distance between original text and analytic abstraction. Whereas empirical subject headings take their point of origin in the terms used in the text, and thereby contain a high degree of original and authentic expression, the analytical subject headings are analytical abstractions without the direct use of text terms (26). As a consequence, the text pieces marked as analytical subject headings are subject to repeated empirical testing in the original empirical material (16); similar to constant comparative methods used, for example, in grounded theory, to avoid incorrect interpretations and elaborations (27). Mixed subject headings are used to the extent that they find justification in both original text terms and analytical subject headings (26). As shown in fig 3, ‘humour; relationship and trust’ was coded as a mixed subject heading, mainly because only one of the concepts ‘relationship’ or ‘trust’ was present in the original text. ‘Humour; teaching normality’ was marked as an analytical subject heading, because the original text does not directly use concepts of ‘normality’ or ‘teaching’. The authenticity markings underline the concept of respecting the empirical world under study (16) and is kept as a code throughout the entire analysis, so that an assessment of strength in expression is possible.

Step 5 – Categorization
After coding the text, the condensed material including subject heading, authenticity markings and line numbers are sorted by the subject heading into categories (fig.3).

Step 6 – Thematization
Subsequently, every categorized subject heading with related condensed text is thematised by constantly moving between categories and the empirical source material (16); to construct themes taking not only the answering of the analytical question into account, but also from different angles looking at how the theme relates and interrelates to the textual context of the theme. Using this form of inspection, the empirical source material governs the establishment of themes and theme content. Inspection, as a Blumerian approach to theme construction, is used to ensure that internal theme connections and content are varied and improved in relation to the empiric source material (16).

Step 7 – Theme development
The thematization or inspection results in a varied and descriptive answering of the analytical question which, by testing all subject headings and condensations empirically, takes into account the internal connections inside
every theme. Together with the previous step and the taxonomic grouping, the purpose of these steps are to unearth relations between categories, formulate propositions with regard to such relations and to weave such proposition into a theoretical scheme; testing problems, data, relation, propositions, and the theory by renewed examination of the empirical world, in this case the text (16). In contrast to the subject headings and the condensed text, the theme text is therefore formulated in such a way that explicit articulation of inclusion and exclusion criteria is possible. This is done by testing and varying the themes in the empirical source material until saturation of themes is reached. The phrase 'satisfaction of themes' is used in the sense that no additional variation of the theme was possible within the limits of the source material and is, as such, not a new concept (28).

**Step 8 – Taxonomic Grouping**

As shown in fig. 1, notes from the ‘first reading’ of the empirical source material are used as secondary to the analytic questions at this point, to take into consideration overriding themes and structures when thermalizing the subject headings. Based on their semantic relation, the remaining themes are subsequently taxonomically grouped into themes and subthemes (29). Grouping the themes taxonomically is done by looking for the semantic relation ‘A is a part of B’ and answering the question ‘what are all parts of B?’ (B= the overriding theme, A= unknown subtheme) in relation to every theme and theme text (fig. 3). Next, the taxonomic analysis enables a thematic representation of the empirical answer to the analytic question in themes and subthemes (29, 30). This not only delivers a complex theme organisation, but also accounts for internal semantic theme coherency (29). The defragmentation of themes leads to a new textual understanding of the text as a whole. Following this, notes from the ‘first reading’ are used to ensure that central structures and overriding themes related to the process of answering the analytic question are not overlooked. In the case of staffs use of humour; during this step it became clear that staff did not refer to the patients’ mental health problems verbally when using humour in the actual interaction with the patient. The first reading pointed strongly to a hidden agenda of observing and pathologising the patient’s reactions to humour. Finally, and enforcing the concept of respecting the empirical world under study, the representation is compared with the empirical source material as a whole to avoid excessive interpretation (30).

**Limitations considered**

**Method limitation; core concepts of validity and reliability**

Whittemore, Chase and Mandle (2001) have put forward primary concepts such as: *credibility, criticality, integrity and authenticity*, and secondary concepts, like *creativity and vividness*. Set in relation to ETTA, credibility, criticality, integrity refer to the stance that the researcher must show critically in
producing results, and that interpretation and inference is carried out in a credible way with a high degree of integrity. The presented ETTA incorporates a repeated critical position in the construction of themes and interpretation of the empirical source material, because it constantly checks and rechecks the construct of themes and the inference against the empirical source material (empirical testing) to avoid distortion or excessive interpretations (31). A similar procedure can be identified in grounded theory (32). Retention of integrity is sought by assuming an open stance in relation to the possible construction of overriding themes and concepts through the ‘first reading’, but also maintains a critical stance that, in the answering of the analytic question, does not take the empirical source material for more than it represents (33). It follows that authenticity means respecting the nature of the empirical world when interpreting data and producing results. The claim of authenticity as a concept in judging qualitative research is compatible with the conceptual position of the Blumerian research approach; symbolic interactionism (16), which constitutes the methodological point of origin of the presented ETTA. Authenticity is sought by constant empirical testing and by attaching a higher importance to the use of authenticity markings – in particular the use of empirical subject headings, rather than the use of analytical concepts (26); being subject to rigid empirical scrutiny and rejection if unfounded in the empirical source material.

According to Wittemore, Chase and Mandle (2001) the concept of vividness is of central importance when it comes to producing results and the presented ETTA should be able to deliver ‘thick’ credible descriptions of the empirical world under investigation and present outcomes in an artful way. Whether this is possible or not seems to depend on the empirical source material, the artfulness of the researcher, tradition and the definition of ‘thick’. In the development of ETTA, the theme producing part of ETTA (fig.1. steps 6–8) was constructed in such a way that it contained openness toward creative elements from the ‘first reading’ of text and a constant pendulum between theme text and empirical data to create a coherent, varied, descriptive and empirically tested outcome. Whether the produced description is ‘thick’ enough would depend on the definition of ‘thick’. If ‘thick’ means that the themes are presented as coherent text with coherent descriptions of internal theme connections, the incorporation of semantic analysis in ETTA accounts for this by subcategorising the themes; combining this with the use of ‘first reading’ should bring forward a clear qualitative description of the internal theme connections, if they exist. This is however not unproblematic if one is trying insistently to create and describe a theme connection for which there is very limited evidence in the empirical source material. In the spirit of the methodological positions underpinning ETTA and in agreement with Wittemore et al., researchers cannot in the
name of thickness or artfulness weld themes together at random and at the same time claim to respect the nature of the empiric world under investigation (16).

Method limitations; the concept of interpretation and the use of a ‘first reading’

Stige, Malterud and Midtgarden (2009), for example, urge the engagement of a more reflective dialogue in the judgment of qualitative research, even though it can be unclear how to do that in practice (34). Central to this is reflecting on the concept of interpretation; creating meaning by identifying patterns and connections in the empirical source material. In the presented ETTA, this is achieved by searching for the answer to the aligned analytic question in the empirical source material (35). Using ETTA, it is in the answering of the analytical question and the subsequent interpretation and thematisation that patterns in the empirical source material are ‘revealed’. Added to this is the identification of overriding themes through the process of ‘first reading’. There are close links between analytic question, empirical source material, interpretation and the construction of findings. The construction of patterns in relation to the chosen analytical questions seems to depend on the relevance and ability of the empirical source material in one or more ways to answer the analytical question (24). A pivotal point is that the establishment of themes in the presented ETTA is achieved in a constant pendulum swing between data and findings, varying the theme until saturation. In other words, interpretations are not achieved solely by answering the analytical question, but also in constant empirical source testing. A central critique would be ETTA’s use of ‘first reading’ results secondarily compared to the results derived by coding the empirical data (fig.1. Step 1 (I)). This represents a weighting of what is, or should be, governing the interpretation and analysis. Contrary to, for example, Ricoeur-inspired approaches (36), ETTA relies heavily on the analytic question to govern the interpretation and analysis. This choice was made based on the realization that a reading of text does not occur in an unconditional way, but instead with an anticipation of meaning. In this case, it is the anticipation that the text is able to answer the analytic question (37). ETTA attempts to grasp the wholeness of the text using ‘first reading’ before the text is dissolved and decontextualised. In other words, ETTA does not by ‘first reading’ embody a ‘naïve reading’ (cf. 38). Moreover, it seeks to create a first insight into the composition of the text as a whole.

Method limitations; Responsiveness, Methodological Coherency and Rigor

One of the central contributions to the debate comes from Morse, Barrett, Mayan, Olson, and Spiers (2002), who point out the importance of: responsiveness, methodological coherency, thinking theoretically, sampling sufficiency and data saturation. Responsiveness & methodological coherency
points to the need for researchers to be creative and skilled in shaping verification strategies intended to increase validity and reliability, subsequent to ensuring coherency between research question, method and answer (39). The fact that the process in the presented ETTA is governed by an analytic question, which again is constructed out of elements relevant to the underlying study; such as aim, research questions, criteria of inclusion and exclusion, central study concepts or study delimitations, seeks to ensure that empirical source analysis precipitates answers coherent to the subject under study. The purpose of constructing analytic questions is to ensure coherency between study aim and setting, method of analysis and study outcome. One could criticize the procedure, construct and use of analytic questions as pre-determining the outcome and in the process overlook important issues outside the analytic questions. This seems to be true in the sense that the result will always be produced in relation to the analytic question and the ability of the empirical source material to produce an answer (24). The use of ‘first reading’ makes involvement of overriding themes and structures possible to some extent (21). One could argue that the simple use of analytic questions could never determine the outcome completely because of the central role played by the selected empirical source material (24), sufficiency of sampling and data saturation (39). In other words, the use of analytic questions within the presented ETTA is applied to ensure that the analysis stays within the focus of investigation, thus ensuring an important degree of reliability.

To think theoretically and to ensure rigor are inextricably linked to the earlier discussions, according to Morse et al. (2002), researchers are required to vary, develop and verify findings and connections in the empirical source material. As a consequence of the symbolic interactionist origin of the presented approach, ETTA is characterized by extensive empirical testing. In other words, themes are tested empirically to vary, validate and consolidate findings until saturation of the theme is reached – or not – in which case this should be noted in the presentation of results or additional material included (28). In relation to openness and creativity, openness in testing findings is attained in line with a fundamental respect for the nature of the empirical world under investigation (16). In the name of rigor and empirical testing, one could argue that the analysis would lack openness and creativity in thematizing the empiric material. There is a clear risk of ending up with a creativity dead analytic apparatus by exaggerated scrutiny (40), regardless of the use of a ‘first reading’. In the question of rigor and how heavily one should strive to attain this, the research literature seems two-pronged (41). Where the line is drawn between ‘rigor’ and ‘rigor mortis’ in this two-fronted debate falls outside the objective of this article (42). The main objective of this article was to present a systematic code system (fig.1. Step 1–8) in accordance
with the central underlying concepts (9) of symbolic interactionism, which is why empirical testing and the scrutiny of investigation into data (16) was prioritised in the construction of ETTA.

**Conclusion**

In conclusion, ETTA attaches particular importance to empirical testing, and tries to emphasise openness toward overriding themes and internal semantic relations. In accordance with the central underlying concepts from symbolic interactionism, respect for the empirical world under investigation and the constant empirical testing of findings and theme construction is heavily weighted. The immediate advantage of using the presented ETTA is the use of analytic questions operationalized from the underlying study ensuring coherency between study, analysis and outcome. Relying heavily on empirical testing, ETTA focuses on the development and interpretation of themes in respect for the nature of the empirical world under study. However, the empirically testing dimension to ETTA could be criticised for excessive rigor, posing a risk of killing creativity in theme construction. This is countered with the use of ‘first reading’. Even though ‘first reading’ is used secondary to analytical questions, it should ensure that overriding themes and text structures are not overlooked. ETTA should be seen as an approach for systematic exploration of text, involved in grouping, sorting and interpreting semantic relations from text with the aim of answering a specific set of analytic questions in order to present an empirically tested answer in terms of themes. The intention of this article has not been to present a fixed method for text analysis, but to present an approach so that others might assess its potential for use within their own textual analysis work.

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