

Theoretical Saturation in Grounded Theory Studies: An Evaluative Tool ¹

Züleyha ÜNLÜ ² - Henna A. QURESHİ ³

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Abstract

The three Grounded Theory (GT hereafter) schools, Classic, Straussian, and Constructivist GT, differ from each other based on their paradigmatic perspectives. The major difference is in terms of the data analysis procedure. Common features exist among the three GT traditions such as constant comparison method, simultaneous data collection and analysis, memos, theoretical sensitivity, theoretical sampling, and theoretical saturation. Among these features, theoretical saturation acts as a key factor that initiates each coding stage of GT while ending the preceding one. This paper focuses on Theoretical Saturation in GT and evaluates how different GT paradigms approach the concept of Theoretical Saturation. Additionally, facilitating novice GT researchers, the paper suggests the Q-Ü Theoretical Saturation instrument to offer possible solutions to overcome the paradigm-related and practical challenges.

Keywords: *Theoretical Saturation, Grounded Theory, Paradigms, Evaluative Criteria, Instrument*

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² Tokat Gaziosmanpasa University, Faculty of Science and Letters, Department of Western Languages and Literatures, zuleyha.unlu@gop.edu.tr, ORCID: 0000-0002-9119-7042

³ School of Social Sciences and Humanities, National University of Sciences and Technology, q.henna@gmail.com, ORCID: 0000-0002-6219-6550

Temellendirilmiş Kuram Çalışmalarında Kuramsal Doyum

Züleyha ÜNLÜ⁴ - Henna A. QURESHİ⁵

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Öz

Üç Temellendirilmiş Kuram (TK) yaklaşımı, Glaserci, Straussçı ve Yapılandırmacı TK, paradigmatik bakış açılarına göre birbirinden farklıdır. Sürekli karşılaştırma yöntemi, eş zamanlı veri toplama ve analizi, notlar, kuramsal duyarlılık, kuramsal örnekleme ve kuramsal doyum gibi birçok ortak özellik mevcutken, en büyük fark veri analiz prosedürü açısındandır. Bu özellikler arasında kuramsal doyum, Temellendirilmiş Kuram'ın her bir kodlama aşamasını başlatırken bir öncekini bitiren kilit bir faktör olarak hareket eder. Bu makale Temellendirilmiş Kuram'da Kuramsal Doyuma odaklanmakta ve farklı TK paradigmalarının Kuramsal Doyum kavramına nasıl yaklaştığını değerlendirmektedir. Ek olarak, Temellendirilmiş Kuram'a yeni başlayanların çalışmalarına rehberlik eden bu makale, paradigma ile ilgili ve pratik zorlukların üstesinden gelmek için olası çözümler sunmak için Q-Ü Kuramsal Doyum aracını önermektedir.

Anahtar Kelimeler: Kuramsal Doyum, Temellendirilmiş Kuram, Paradigmalar, Değerlendirme Kriteri, Ölçek

⁴ Tokat Gaziosmanpaşa Üniversitesi, Fen-Edebiyat Fakültesi, Batı Dilleri ve Edebiyatları, zuleyha.unlu@gop.edu.tr, ORCID: 0000-0002-9119-7042

⁵ School of Social Sciences and Humanities, National University of Sciences and Technology, q.henna@gmail.com, ORCID: 0000-0002-6219-6550

Introduction

Glaser and Strauss (1967) introduced the concept of Theoretical Saturation (TS hereafter) in qualitative research with Grounded Theory (GT hereafter). Over time, TS has proved its usefulness as a criterion for developing a well-grounded theory, yet it poses a challenge to novice GT researchers. Multiple papers in qualitative research have tried to address this issue and have devised ways to help novice qualitative researchers with TS. This paper will add to the debate, and it also provides a Q-Ü Theoretical Saturation Instrument to streamline the research process for novice GT researchers.

Saturation or, theoretical saturation as it is known in GT has been one of the indispensable features of any qualitative studies (see: Fusch and Ness, 2015; Morse, 2015; Sparkes et al., 2011; Denny, 2009; Guest et al., 2006; Morse et al., 2002; Morse, 1995; Leininger, 1994). In Glaser and Strauss's (1967) GT, seven pillars, adding rigor to qualitative research, exist: having a broad research focus, delayed literature review, constant comparison method, simultaneous data collection and analysis, memos, theoretical sensitivity, theoretical sampling, and theoretical saturation (Qureshi and Ünlü, 2020). TS became synonymous with rigor and gained the status of a 'rule' (Sparkes et al., 2011; Denny 2009); an 'edict' (Morse 1995), and quality criteria in qualitative and GT studies (Charmaz, 2006; Morse et al., 2002; Leininger, 1994).

In 1999, Strauss started a new tradition in GT, and later Charmaz added a constructivist approach to GT in 2006. The three schools differ from each other based on ontological and epistemological principles as well as coding procedures. Yet, in GT, the three schools-Glaserian or Classic (1978), Strauss and Corbin (Straussian) (1999; 2014), and Charmaz (Constructivist) (2006)-, despite offering their versions of GT, have TS as their integral part. TS is presented as a core feature of all GT schools, therefore, necessitates a close examination of the concept from various GT perspectives to understand how each school treats TS.

This paper will focus on TS in GT and highlight the potential conflict points for handling TS. Presenting a close examination of this concept will guide novice qualitative researchers. Also, the article presents a Q-Ü Theoretical Saturation Instrument developed by the authors to ensure novice GT researchers would reach TS keeping in mind the theoretical saturation-related problems indicated in the literature. Additionally, the researchers will retrospectively evaluate their Ph.D. studies with the Q-Ü Theoretical Saturation Instrument they developed to better illustrate how the instrument could be used.

Literature Review

The literature review on TS reveals three lines of potential conflict for researchers, novices especially. These are:

- a. Definition of theoretical saturation
- b. Minimum criteria for theoretical saturation
- c. Practical problems with theoretical saturation

The first potential conflict point is the variation in definitions of TS. The earliest definition of TS was provided by Glaser and Strauss (1967, p. 61), theoretical saturation is the point where 'no additional data are found'. Later, they added 'saturation is based on the widest possible range of data on the category' (Glaser and Strauss, 1967, p.61). Glaser (2001) clarified this description by underlining that seeing the same patterns repeatedly is not necessarily saturation. Rather, Glaser (2001, p. 113) stated that saturation is reached when 'no new properties of a pattern emerge'. In 1998, Strauss and Corbin defined TS as the point 'where collecting additional data seems counterproductive; the "new" that is uncovered does not add that much more to the explanation at

this time' (p. 136). Charmaz (2006, p.113) described TS as 'when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical categories.'

Despite the descriptions of TS offered by the pioneers of GT, those who examined the concept identified several conceptual problems with the descriptions of TS. For instance, the abstract descriptions of TS provide no didactic guidance to researchers to understand 'how researchers could determine such a point' (Low, 2019, p.6). Additionally, the descriptions were logically problematic since it is always possible to find 'new theoretical insights as long as new data is gathered' (Low, 2019, p.1). Therefore, a comprehensible and applicable description of TS is required.

The second conflict point is the lack of minimum criteria to achieve TS. Despite the criticism of the definition of TS, the main problem lies in 'how to articulate' TS (Aldiabat and Navenec, 2018, p. 247). Also, there is a lack of consensus on the minimum criteria to achieve TS. The clarity in criteria would help researchers to avoid presenting a study without TS with unclarified dimensions (Glaser and Strauss, 1967).

Similarly, equating TS with theoretical sampling with no consensus on the sample size results in varying accounts of credibility (Low, 2019; van Rijnsoever, 2017). Following a similar line, several scholars offered strategies to achieve TS in GT studies. For instance, the data collection procedure could play a vital role in establishing TS (Thomson, 2011). Thus, collecting further data even though TS seems to have been reached (e.g., conducting two more interviews) is recommended. However, researchers should realize that the 'one-size fits all method to reach data saturation' is not realistic as each study design is unique therefore data collection procedure should be according to the need of the study (Fusch and Ness, 2015, p.1409). Fusch and Ness (2015) recommended focusing on the richness and depth of the data to replicate the study rather than a specific criterion to reach TS. This, in turn, foregrounds the evaluative criteria for GT studies.

The third potential point of conflict is the practical problems associated with TS. GT researchers have included practical problems as a cause of not achieving TS, thus suggesting the need to overcome these problems first. For instance, the researcher's agency in determining TS, the researcher's experience with qualitative research in general, the researcher's familiarity with using a guiding theoretical framework, insufficient time to conduct the study, insufficient budget, limited resources, training and monitoring the study or researcher's conceptual insight and skills (Low, 2019; Aldiabat and Navenec, 2018; van Rijnsoever, 2017; Green and Thorogood, 2004; Strauss and Corbin, 1998;); participant attrition (Tuckett, 2004) and researcher burnout (Bernard, 2000) are among the potential practical problems. Among the practical problems, however, the lack of clear guidelines, the nature of the concept of TS, and data-instrument-related ambiguities attracted particular attention as these issues would be the key to overcoming the confusion about TS.

In terms of the lack of clear guidelines on TS, ambiguity arises when researchers are expected to reach saturation and declare in certain terms if they have attained or have not attained saturation. It contradicts with nature of qualitative research which encourages the researchers to look for nuances. Saturation should be looked at 'as a matter of degree' instead of absolute terms (Stauss and Corbin, 1998; Saunders, et al., 2018, p.1904); this in turn would compensate for the lack of guidelines and provide space to novice researchers to decide what degree of saturation they were able to attain keeping their research limitations in mind.

Another practical problem, as highlighted by Saunders et al. (2018) is identifying saturation as a process or an event. An expert may claim to have reached saturation, as an event or point in their research (Kazley et al. 2015; Jassim and Whitford 2014; Otmar et al. 2011) while novice researchers state that they have achieved saturation remains an uncertain domain. For novice researchers, treating saturation as a process would be more

appropriate. They may take Strauss and Corbin's (1998, p. 138) view of saturation as a 'matter of degree' which will allow them to state they have reached some degree of saturation leaving room for their inexperience (for the time being) yet maintaining the credibility of their research.

Furthermore, literature on qualitative studies has also raised questions about several interviews required for achieving saturation, which can also be defined as data-collection instrument-related issues. In qualitative research, many experts advocate a minimum of 12-15 interviews (Charmaz, 2014) or in multiple tens as is evident from a plethora of qualitative studies (Mason, 2010). There are many reasons suggested for this high number of interviews such as rigor, credibility, funding party requirements, depth of information, and saturation by a specific number of interviews (Hennink et al., 2017; Francis et al., 2010; Guest et al., 2006; Bloor and Wood, 2006; Fossey et al., 2002). In GT, theoretical saturation is not dependent on several interviews rather it advocates theoretical sampling. Nonetheless, the question of several participants arises due to funding requirements. Marshall et al.'s (2013) three methods to justify sample size, are 'citing recommendations', 'acting on precedent by citing sample sizes in similar studies, and internal justification' (pp. 12-13).

With these considerations in mind, several alternatives to TS have been offered. Instead of TS, researchers might consider 'theoretical sufficiency' (Dey, 1999, p. 257), meaning 'having reached a sufficient or adequate depth of understanding to build a theory'. Other perspectives as an alternative to TS could be 'conceptual density or conceptual depth' (Nelson, 2016, p.556); 'information redundancy or conceptual rigor' (Low, 2019, p. 136); 'articulating assessment criteria can be helpful' (van Rijnsoever, 2017, p.2) to establish TS. Zhao and Davey (2015, p. 1178) referred to saturation in terms of 'theoretical completeness' and suggested sampling should stop 'when dimensions and gaps of each category of the grounded theory had been explicated.' Other variations of the concept for other qualitative methods include data saturation (Francis et al., 2010; Guest et al., 2006), thematic saturation (Guest et al., 2006), and in some cases simple saturation (Starks and Trinidad, 2007). Although alternative terms and means may help clarify the meaning of the concept and may hint at ways to accomplish TS, these alternative terms and means still do not offer any guidelines.

Furthermore, Saunders et al. (2018, p. 1186) presented models of saturation to help develop an understanding of TS from different perspectives. The first model, labelled as TS within the classic GT terms, focuses on the development of theoretical categories via a focus on sampling. The second model, Inductive Thematic Saturation, aims to reach new codes or themes via a focus on analysis. The third model, Priori TS, focuses on sampling and examines the extent to which existing codes or themes could be exemplified in the data. The final model, Data Saturation, once again highlights the data collection and focuses on revealing how the new data re-exemplify what the previous data showed. Novice qualitative researchers could benefit from developing an understanding of these models and incorporating them into their research process to clarify their approach to TS. These models could also enable novice researchers to present a justification for their sample size. However, it is the course of the data collection when novices will only have theoretical sampling as their only guide to achieving theoretical saturation.

The main reason for these points of conflict to exist in GT is the difference in ontological and epistemological perspectives of the three schools. To understand theoretical saturation in GT it must be viewed in the context of the school of GT the novice researcher is following. A brief overview of GT schools in terms of their ontological and epistemological perspectives and how these varying perspectives shape TS is presented below.

Paradigmatic differentiation in GT: Ontological and Epistemological Principles

The three schools of GT, Classic GT (Glaser and Strauss, 1967; Glaser, 1978), Straussian GT (Strauss and Corbin, 1994), and Constructivist GT (Charmaz, 2006) differ from each other mainly in terms of their coding

procedures, philosophical positions, and uses of literature review (Kenny and Fourie, 2015). TS is one of the key principles of GT schools, yet the paradigmatic differentiation among GT schools might result in confusion regarding TS for novices. Thus, it is necessary to evaluate the concept within three schools of GT to better understand the concept as well as to develop an assessment guideline to reach TS. While doing this, how the three schools of GT conceptualise emergence could reveal a better understanding of TS in three schools of GT. Classic GT (Glaser and Strauss, 1967; Glaser, 1978) has been accepted as holding a positivist/post-positivist paradigmatic position (Levers, 2013; Charmaz, 2013). Ontologically, positivist/post-positivist approaches believe that knowledge is one and exists independently (Levers, 2013; Charmaz, 2013). Epistemologically, Classic GT holds an objective/neutral view of knowledge (Keane, 2014). This stance requires the researcher to 'approach the data with an impartial mindset' to reveal the regularities in the chaos (Levers, 2013, p.4). The idea of emergence in Classic GT, thus, encourages the researcher to avoid forcing the data and accept what comes out of the analysis (Glaser, 1978; Levers, 2013). Finally, the researcher in Classic GT acts as an 'observer rather than a creator or participant' (Levers, 2013, p. 4). The positivist/post-positivist philosophical stance of Classic GT implies that decisions about TS are also objective as knowledge exists independently.

In the interpretive paradigm, which Straussian GT adopted (Corbin and Strauss, 2008), the researcher assumes a relativist ontology. That is, the researcher rejects the existence of a single reality to be discovered, but rather believes that it is not possible to understand the reality completely (Levers, 2013). Also, interpretive GT follows a subjectivist epistemology that acknowledges the role of the researcher in constructing interpretations while also refusing a meaningful co-construction between the researcher and the researched (Levers, 2013; Corbin and Strauss, 2008). In interpretive paradigms, in the Straussian approach, the researcher's agency becomes more important, so TS is subjective.

As for Constructivist GT (Charmaz, 2006), meaning is created mutually by both the researcher and the researched (Charmaz, 2000). Furthermore, how knowledge is created depends on how the researcher engages in the world, which highlights the impact of the researcher on the data (Keane, 2014). Another significant aspect of constructivist GT is the interaction between the researcher and the researched. Following a critical realist ontology and a relativist epistemology, Constructivist GT argues that 'there is a real world which the participants and the researcher can access in bits and pieces' (Levers, 2013, p. 5). A vital aspect of Constructivist GT is 'to understand people's realities and how these realities are constructed' (Keane, 2014, p. 418). Therefore, the idea of the emergence of the truth turns into 'construction' in Constructivist approaches (Charmaz, 2006; 2000; Keane, 2014). In Constructivist GT, TS is subjective but also can become multiple. TS is constructed through the interaction between the researcher and the researched. In short, to understand TS, novice researchers would benefit from understanding the ontological and epistemological perspectives of GT Schools (See Table 1 below).

Table 1
Theoretical saturation in GT schools

Philosophical Positions	Definition of Saturation	Researcher's Role In Saturation
Classic GT (Post-positivist)	The point where 'no additional data are found'	Saturation is objective Saturation independent of the researcher, there is a certain point where the researcher will reach it
Straussian GT (Interpretivist)	Collecting additional data <u>seems</u> counterproductive; the "new" that is uncovered does not add that much more to the explanation at this time	Saturation is subjective The researcher actively makes decisions Reaching a point of 'certain theoretical saturation' is not possible Theoretical saturation can only be approached
Constructivist GT (Constructivist)	Gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical categories.	Saturation is subjective The interaction between the researcher and the researched <u>construct</u> the saturation Multiple realities; multiple <u>points of saturation</u>

Due to differences in their ontological and epistemological perspectives, the GT schools create undue stress for novice researchers. Though not all potential conflicts can be addressed in the length of one paper, the paper presents a Q-Ü Theoretical Saturation Instrument to address Theoretical Saturation. The instrument is designed with a deep understanding of and respect for the ontological and epistemological differences of the GT schools to help novice researchers belonging to any school of GT.

Based on the TS-related problems, which have been highlighted in the literature, what would be the features of a useful instrument to evaluate TS in GT studies?

Methodology

The paper is based on two studies: Study A was conducted in England to study classroom spoken feedback interactions between teachers and students on academic writing in English for Academic Purposes (EAP hereafter) settings. Study B was conducted in Germany to study communication in mentoring between mentoring dyads. In these studies, GT guided the data collection and analysis. In Study A, Glaser's Classic GT was used, and Study B followed Charmaz's constructive approach. A detailed overview of studies A and B is shared below.

In Study A, adopting Classic GT, data was gathered via interviews with EAP teachers and students as well as classroom observations. Although multiple data collection methods were utilised in Study A, this paper focused on only interviews and the initial data collection phase due to space concerns. The participant profile for the initial part of the study in Study A was as shown in the table below:

Table 2
Teacher Interviewee Profile in the Initial Data Collection Interviews

Participant Type: Teachers				
Class Type	No of Participants	Gender	Pair/Single	Interview Mode
Generic Pre-requisite EAP	1	Male	Single	Face-to-Face
Generic In-Sessional EAP	1	Male	Single	Face-to-Face
Specialised EAP	1	Female	Single	Face-to-Face

Table 3
Student Interviewee Profile in the Initial Data Collection Interviews

Participant Type: Students					
Class Type	No of Participants	Gender	Pair/Single	Interview Mode	Nationalities
Generic Pre-requisite EAP	8	(4 Female/4 Male)	Single	Face-to-Face	Kazakhstan, Mexico, Saudi Arabia, Turkey.
Generic In-Sessional EAP	5	(2 Male/3 Female)	Single	Face-to-Face	Czech Republic, Kazakhstan, Burundi, Indonesia, China
Specialised EAP	2	Female (2 Female)	Single	Face-to-Face	Malaysia

In Study B, communication in mentoring between mentoring dyads was studied in an academic setting. The data was collected through twenty-five semi-structured interviews. Ten mentors (professors) and fifteen mentees (post-docs) participated in the study. The participants were enrolled in their university's mentoring programs for more than a year. The participants' demographics can be seen below (see Table 4).

Table 4
Participants' Demographics

Participants	No. of Participants	Gender	Pair /Single	Interview mode
Mentor	10	Female-8 Male -2	Single-23	Face-to-face -22
Mentee	15	Female-14 Male -1	Pair- 1	Skype-1
Number of Interviews	25	Female-22 Male -3		Phone-2

The interviews were conducted using multiple modes: Face-to-face, Skype, and Phone over a period of one year with the response rate fluctuating from good to low and slow (Qureshi, 2019). The data was collected using the Nested Sampling technique (Qureshi, 2018). The participants were contacted through their mentoring programs and Snowball sampling. The interviews were conducted as per convince of the participants for a duration of one hour to one-and-a-half hours. The interviews were transcribed, coded, and analysed using Charmaz's Initial Coding, Focused Coding stages as well as Theoretical Coding following Glaser (1978). The Coding stages were guided by Ü-Q Analysis Instrument (Qureshi and Ünlü, 2020). Study B was successfully concluded with an emerging theory about communication in mentoring.

In both studies, GT was adopted to analyse the data, and all tenets of GT were employed to ensure authentic GT research. One of the tenets, Theoretical Saturation was of particular importance and certain measures were taken to ensure Theoretical Saturation. These measures will be discussed in the next section.

Findings

Both Study A and Study B took certain measures to ensure TS has been achieved at a minimum level. These measures can be categorised under three steps:

- a) **Synchronising TS with other tenets of GT:** TS will be hard to achieve in any GT studies without ensuring the existence of GT tenets.
- b) **Data collection instrument-related measures:** At this stage, both researchers concentrated on the specific data collection tool to evaluate TS.
- c) **End of the study evaluation:** Both researchers evaluated the complete study by using the evaluative criteria together with the evaluative questions offered by the GT school they followed.

Focusing on the three components, Authors A and B developed Q-Ü Theoretical Saturation Instrument as an evaluative tool. This evaluative tool consisting of all three aspects is presented and defined in Table 5 next.

Table 5
An Instrument For Theoretical Saturation

Synchronising TS with other tenets of GT			
Criteria No	Check List Items	Suggested Targets	Accomplished
1	Constant Comparison Method		Y/N
2	Simultaneous data collection and analysis		Y/N
3	Memos		Y/N
4	Theoretical Sampling and Theoretical Sensitivity		
5	No. of thesis read	At least 2 theses of same GT School	Y/N
Data collection instrument-related measures			
Criteria No	Check List Items	Suggested Targets	Accomplished
1	No. of Participants	12- upwards	Y/N
2	Interview Length	1:30 hr.- upwards	Y/N
3	Topics in Guideline	5-7	Y/N
	a. Use of probes	2-4	Y/N
	b. Examples Elicited	1-3	Y/N
	c. Opposing views Elicited	Y/N	Y/N
	d. Requested Interviewees' suggestions/perceptions	Y/N	Y/N
4	Diversity		Y/N
	a. Site variation	3-upwards	Y/N
	b. Age group Variation	Y/N	Y/N
	c. Gender Variation	Y/N	Y/N
	d. Opposing Groups	Y/N	Y/N
5	Multiple Data Sources	An additional data collection instrument	Y/N
End of the study: Evaluative Criteria of GT Schools			

Q-Ü Instrument for Theoretical Saturation: Describing the Key Components

The Q-Ü Instrument for Theoretical Saturation comprises 3 major categories which have a direct impact on TS. The first category is ***Synchronising TS with other tenets of GT***. Under this category, the researcher ensures that the essentials of any GT study including constant comparison method, simultaneous data collection and analysis, memos, theoretical sampling and sensitivity, and the number of theses read. Among these criteria, especially the number of thesis read would benefit novice researchers greatly by reading works/theses of their peers in the same school of GT. Many questions regarding data collection, theoretical sampling, theoretical saturations, and analysis pertaining to the epistemology of the GT school could be answered by reading theses. Reading the thesis would make the novice researchers aware of the standard and depth of work required from them and how to achieve it. In both studies, the researchers were advised by their supervisors to read thesis related to their school of GT, which were Classical GT and Constructivist GT. The researchers found the advice quite helpful in the long run.

The second category is the ***Data collection instrument-related measures***. Here both researchers focused on the specific instruments they utilised. *Criteria under this category included the Number of Participants, Interview Length, Data Sources, Topics in Guidelines, and Diversity.*

Regarding the *Number of participants*, Charmaz (2014) suggested 12 participants would provide good data depending on the topic and requirement/constraints of the research. In Study A and Study B, the number of participants was 18 (initial phase) and 25 in total, respectively. The decision to invite more than 12 participants was based on multiple factors. One reason was working towards a Ph.D. dissertation. Thus, making the Ph.D. an in-depth study of the selected topic required as many participants as possible for interviews. The second factor for having more than 12 participants was to ensure maximum viewpoints.

The second component, the *length of interviews*, was also important. For Study A, all interviews lasted approximately 45 minutes. Following the main interviews, participants were contacted for follow-up interviews. In Study B, a pilot interview was conducted to check the interview guide. The pilot interview lasted for 45 minutes, and included a warmup exercise, introducing the topics, discussing the consent form, as well as asking for the interviewee's queries. Once this pilot interview was transcribed and the coding process started, it was found that 45 minutes was not enough for an in-depth discussion on the topic. The rest of the interviews for study B were more than one-and-a-half-hour long and each interview was closed when all the topics in the interview guides were discussed in detail. To ensure the time requirement, the interviewees were informed clearly in an e-mail that the interview would be one-and-a-half-hour long and the interviewees had the choice to decide on time, date, and location as per their convenience. For novice researchers, keeping the length of the interview in mind could help as a measure to ensure theoretical saturation by conducting interviews of good length in which topics are discussed in depth with the interviewee.

The third component pertains to topics in *interview guidelines*. In study A, two sets of guidelines were prepared for Initial Data Collection and Focused Data Collection (See Appendix A and B). In both Study A and B, interview guides were constructed over a period of a month with deliberation on what should be included, how the questions should be posed, and so forth. In the end, these guidelines were cut short to five major topics/questions. During the interviews, these five topics were discussed in detail. Additionally, the interview guide was revised as guided by theoretical sensitivity.

Similarly, in both studies, interviewees were requested to supplement their responses with examples. Requesting examples adds depth to the data and makes it easy for interviewers to grasp the essence of the interviewees' experiences. Comparing different examples adds dimensions to the category.

Related to interview guidelines, opposing views were also important for the studies. To warrant Theoretical Saturation in both studies A and B, opposing views were also elicited from the interviewees to add to the depth of the data generated. For instance, while exploring the responsibilities of a mentor two different responses were received, one mentor was open to all questions and the other was concerned about the boundaries of each role (i.e., mentor or Ph.D. supervisor). Similarly, opposing views could be of both female and male participants depending on the nature of the study, or in the case of Study B, of opposing sides of a mentoring relationship, which were mentors and mentees. In Study A, this was achieved through a focus on teachers and students as two opposing sides of feedback interactions. Getting opposing views helps enrich the categories and they can be complemented by requesting participants for their opinions and suggestions. Yet, when the researcher explored the topic further, it became an important part of the study. Suffice it to say, to answer the question 'Have I reached Theoretical Saturation', the interview guide should be simple. The interviewer should elicit examples and suggestions from participants to ensure data is rich and thick to achieve TS and that the theory thus generated would be comprehensive.

The fourth component of the Data Instrument-related measures is *Diversity* in data. The first element of diversity could be site variation. When researchers add more sites to their data collection scheme, they ensure multiple voices in their study which adds richness to the data. Though one site for data collection is not overruled, every site has a culture and most responses from one site may be similar. It may lead the researcher to think that they have achieved theoretical saturation, but in reality, it would be thin data. In Study A, interviews were conducted across different types of English for Academic Purposes (EAP) classes. These classes were Generic EAP classes, Specialised EAP Classes, and In-Sessional EAP Classes. Each had its own purpose with different student profiles. In Study B, the participants from different parts of the country were invited because such variation adds nuances to the topics being studied. For instance, different mentoring programs had different pairing strategies which affected mentees' experiences. The variation in both studies added to the health of a category, hence leading toward Theoretical Saturation.

Another *diversity* aspect is the age group. Getting views from people of different age groups could bring new ways of looking at the same issues. For instance, in Study B, the age of mentors varied from 32 to 72 and their responses to questions were very different. Though not all studies would have the flexibility of age variation in such cases other variations can be added such as gender variants or opposing group variations to add to the health of the categories. For instance, in study B female mentor participants were more than male mentor participants. Although their mentoring styles were not found to be different based on their gender, they still added both perspectives. Similarly, opposing group variation can also add valuable depth to the data. For example, in Study A, how teachers and students positioned themselves in feedback interactions was examined. Likewise, in Study B mentoring relationship was explored from the mentees' as well as the mentors' perspectives.

The fifth component under Data-Instrument related measures is *Data Sources*. To ensure Theoretical Saturation, novice researchers must ensure multiple data sources. In both studies A and B, multiple data sources were used. In study A, data triangulation was achieved by using interviews and observations with field notes as data sources. In study B, in-depth interviews, field notes, and memos were used as data sources. By having multiple sources, novice researchers can check, and counter-check the finding of the data, and each data source can add dimensions to the categories and supplement them with supporting examples. The decision to stop collecting data has a far-reaching impact on the health of the categories being developed. If it is stopped prematurely, this will affect the outcome of the research. However, if a researcher has 12 interviews with no additional data sources, the questions of the health of the categories will remain a point of contention. Therefore, along with 12 or more interviews, novice researchers should have other data sources as well, as was seen in Study A and Study B.

The third major category in the Q-Ü instrument is the *Evaluative Criteria*. As has been shown, the three schools of GT have different evaluative criteria. The TS-related evaluative criteria for Glaserian GT are Fit, Work, Relevance, and Modifiability, for Straussian GT the evaluative criteria are Validity, Reliability, and Credibility. However, the evaluative criteria of Constructivist GT are Credibility, Originality, and Usefulness (see table 6 below).

Table 6
Evaluative Criteria of GT Schools

Philosophical Positions	Definition of Saturation	Researcher's Role In Saturation	Evaluative Criteria
Classic GT (Post-positivist)	The point where 'no additional data are found'	Saturation is objective Saturation independent of the researcher, there is a certain point where the researcher will reach it	Fit Work Relevance Modifiability
Straussian GT (Interpretivist)	collecting additional data <u>seems</u> counterproductive; the "new" that is uncovered does not add that much more to the explanation at this time	Saturation is subjective The researcher actively makes decisions Reaching a point of 'certain theoretical saturation' is not possible Theoretical saturation can only be approached	validity reliability credibility
Constructivist GT (Constructivist)	Gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical categories	Saturation is subjective The interaction between the researcher and the researched <u>construct</u> the saturation Multiple realities; multiple <u>points of saturation</u>	Credibility Originality Usefulness

In Study A and B, both authors evaluated their complete study by using the above-shown evaluative criteria of different GT schools. Based on the criteria of the respective GT schools the authors followed, evaluative questions were asked and answered with examples to ensure TS has been achieved at a minimum level. These questions are shown in Table 7 below.

Table 7
Evaluative Criteria for Theoretical Saturation

Philosophical Positions	Evaluative Criteria	Possible Questions to Ask
Classic GT	Fit Work Relevance Modifiability	Q1: Do categories emerge from data? Q2: Does your theory provide predictions, explanations, and interpretations of what was going on in the area under study? Give at least 1-3 examples for each. Q3: Does your theory have solid examples for all categories? Q4: Is your theory adaptable to different situations? How? (Lomborg and Kirkevold, 2003)
Straussian GT	Reliability Validity Credibility	Q1: How was the original sample selected? On what grounds? Q2: What major categories emerged? Q3: What were some of the events, incidents, or actions (indicators) that pointed to some of these major categories? Q4: On the basis of what categories did theoretical sampling proceed? That is, how did theoretical formulations guide some of the data collection? After the theoretical sampling was done, how representative of the data did the categories prove to be? Q5: What were some of the hypotheses pertaining to conceptual relations (i.e., among categories), and on what grounds were they formulated and validated? Q6: Were there instances in which hypotheses did not explain what was happening in the data? How were these discrepancies accounted for? Were hypotheses modified? Q7: How and why was the core category selected? Was this collection sudden or gradual, and was it difficult or easy? On what grounds were the final analytic decisions made? (Strauss and Corbin, 1999, p. 269)
Constructivist GT	Credibility Originality Usefulness	Q1: Are there strong logical links between the gathered data and the argument, and analysis? Q2: Has the research provided enough evidence for the claims to allow the reader to form an independent assessment-and agree with your claims? Q3: What is the social and theoretical significance of this work? Q4: How does your grounded theory challenge, extend or refine current ideas, concepts and practices? Q5: What is the contribution of the study to the existing knowledge? Q6: How does the analysis reveal future directions for research? (Charmaz, 2006)

As an end-of-study evaluation, the Evaluative Criteria offered by each school of GT might help novice researchers strengthen and refine TS in their studies. This is mainly because answering questions about each criterion by providing examples from the research will show how strongly the theory was established with all its aspects. In Table 7 above, the questions that specifically require answers with examples are shown. In both Study A and Study B, Classic GT and Constructivist GT respectively, these criteria were used to evaluate the complete study as well as TS in each stage of analysis. A positive response to these questions not only reflected the quality of the study but also the fact that TS was achieved.

In short, the retrospective evaluation of both GT studies show that the question of TS can be answered if the novice researchers use the Q-Ü Instrument for Theoretical Saturation, keeping in mind that not all categories would apply to all studies, yet if novice researcher would try to use this instrument as closely as possible, they would be able to generate healthy, rich and deep data achieving TS.

Discussion

The purpose of this paper is to introduce an instrument that can be used by novice researchers following any GT school to achieve TS for successful research. The instrument was designed to ensure two major aspects of qualitative and GT research. One, it may have the flexibility to cater to the needs of novice researchers from qualitative and GT backgrounds so that they may choose options and their range for achieving TS. The flexibility in the Q-Ü instrument for TS responds to Barbour's (2001) argument that prescriptive adoption of any checklists may provide confidence to researchers, but they become counterproductive when applied without giving thought to the demands of a specific study. The second aspect, the Q-Ü instrument for TS responds to, is the reality that every qualitative study is different from another based on multiple factors; therefore, *one criterion fits all* cannot be applicable in qualitative studies (Guba and Lincoln, 2005; Mays and Pope, 2000). The Q-Ü instrument is designed to incorporate major requirements/points of conflicts of qualitative and GT so that novice researchers can conduct successful research.

As established in the literature review, TS in qualitative research has three major lines of potential conflict that may hinder novice researchers in their quest for valid and reliable research. These are the definition of theoretical saturation, minimum criteria for theoretical saturation, and practical problems with theoretical saturation. The case definition of TS requires novice qualitative researchers to understand in depth the definition of TS as per their school and follow it to the letter. In doing so, they may save themselves from confusion and unnecessary delay in their research process. Since the schools of GT have different paradigmatic stances on TS reading all and trying to make sense of all would only add to novice researchers' burden.

The three major schools of GT, Classic GT (Glaser and Strauss, 1967; Glaser, 1978), Straussian GT (Strauss and Corbin, 1994), and Constructivist GT (Charmaz, 2006) differ from each other mainly in terms of their coding procedures, philosophical positions and uses of literature review (Kenny and Fourie, 2015). However, all GT schools consider TS as an integral part of the GT process. They all provide definitions of TS based on their paradigmatic stance. For instance, Classic GT has a positivist/post-positivist paradigmatic position (Glaser and Strauss, 1967; Glaser, 1978; Levers, 2013; Charmaz, 2013). Straussian GT adopts an interpretivism paradigm (Corbin and Strauss, 2008; Levers, 2013) and Charmaz endorses a Constructivist paradigm in GT (Charmaz, 2006). Based on these differences, novice researchers would always find themselves in a quandary lest they follow one school and focus on its definition of TS and apply it to their research and cross-reference it with the evaluative criteria to ensure the successful accomplishment of TS. However, novice researchers would still find themselves at a loss due to the enormity of the task. In such a situation, having an instrument that could guide the novice researcher could be an enormous help and the Q-Ü instrument for TS is a step towards it.

The second point of conflict is the minimum criteria for TS, regarding which multiple strategies are available such as collecting data till TS is achieved and then some more to ensure no stone is left unturned (Thomson, 2011). Similarly, some suggest focus should not be on reaching TS, but rather it should be on the richness and depth of data (Fusch and Ness, 2015). Some researchers suggest credibility of research becomes questionable when equating TS with theoretical sampling with no consensus on the size (Low, 2019; van Rijnsoever, 2017). Keeping in view the conflicting issue of the minimum criteria for TS, the Q-Ü instrument for TS is designed to ensure novice researchers following any GT would not have issues related to the credibility and validity of

the research. The Q-Ü instrument for TS suggests a minimum of all necessary aspects such as a minimum number of participants, minimum length of interview time, minimum data collection sources, and minimum data sites to name a few. As discussed in the results, the minimum criteria provided in the Q-Ü instrument for TS rule out the possibility of not achieving TS by ensuring all important aspects have been covered. Moreover, using the Q-Ü instrument for TS also guarantees the credibility and validity of research without the restriction of the schools of GT as was observed in the two studies where it was used. One study was using Classic GT (Glaser and Strauss, 1967) and the other study was following Charmaz's Constructivist approach (Charmaz, 2006). The Q-Ü instrument for TS was found helpful in both studies as a useful tool.

Of particular importance, one of the constructs of the Q-Ü instrument for TS, the minimum number of participants, has garnered attention in qualitative research for some time now. A pre-determined number of interviews is not new in qualitative research. Many studies show saturation as the core of their research and analysis process yet also shared prescribed number of a sample size to attain saturation (McNulty et al., 2015; Long-Sutehall et al., 2011; Niccolai et al., 2016; Fusch and Ness, 2015). Marshall et al. (2013), in their systematic review of qualitative literature, revealed that experts suggested different numbers of participants for qualitative studies. For instance, at least 20 to 30 interviewees (Creswell, 2007); 30 to 50 interviews (Denzin and Lincoln, 2005), and 20 to 30 interviewees with 2 to 3 interviews per person (Morse, 2000).

The Q-Ü Theoretical Saturation Instrument suggests a minimum of 12 interviews to ensure saturation. The number 12 for the minimum interview was suggested by Charmaz (2014), but it has also been supported by various studies that claim that saturation is achieved by 10-12 interviews. Marshall et al. (2013) found no evidence that 30 or more interviews had yielded better categories. On the other hand, Boddy (2016) suggested that 30 or more interviews become difficult to manage and analyse. This is true in the case of novice researchers, especially in the case of Ph.D. students, who are solely responsible for all research-related activities from data collection to coding. Therefore, the suggested number of interviews in the Q-Ü Theoretical Saturation Instrument will ensure a manageable workload for novice researchers as well as data with enough depth to ensure categories are well-developed and their relationships well-established (Green and Thorogood, 2004). Saunders et al. (2018, p.1901) study raise the question of 'how much saturation is enough?' which is a decision to be made by the researchers based on the requirement of their study. Novice researchers may keep in mind that new data as suggested by Strauss and Corbin (1998) will always be emerging as the interviews progress, but it is a researcher's task to recognize when the new data becomes counterproductive and adds no new dimension to the data.

The third point of conflict in GT is the practical problems with theoretical saturation. For instance, the researcher's agency in determining theoretical saturation, the researcher's experience with qualitative research in general, the researcher's familiarity with using a guiding theoretical framework, insufficient time to conduct the study, insufficient budget, limited resources, researcher burnout, training and monitoring the study or researcher's conceptual insight and skills are among the potential practical problems that might influence theoretical saturation (Aldiabat and Navenec, 2018; Low, 2019; van Rijnsoever, 2017; Bernard, 2000; Strauss and Corbin, 1998). The researchers in both studies were aware of these practical issues and hence found the Q-Ü instrument for TS as the solution for novice researchers to deal with practical issues discussed earlier.

Some of the practical issues can be resolved if the novice researchers conduct an in-depth study of their school of GT such as the researcher's agency in determining TS and reading a similar thesis that showcases novice researchers' GT school practices in action as suggested in the Q-Ü instrument for TS. The purpose is not to copy their style but to become aware of acceptable norms for a specific GT school. It will also help with issues like the researcher's experience with qualitative research in general and the researcher's familiarity with using

a guiding theoretical framework. A novice researcher, for sure, would have no or limited experience in both cases, and following the Q-Ü instrument for TS and reading theses would help researchers to overcome these shortcomings to some extent.

The Q-Ü instrument for TS also caters to issues such as insufficient time to conduct the study, insufficient budget, limited resources, and researcher burnout. From the very beginning, a researcher using the Q-Ü instrument for TS would be aware of minimum requirements and they will pace their research accordingly. In both studies, the researchers were aware of the minimum requirement, so they did not stop mid-way to start looking for TS. Instead, they interviewed more than the minimum requirement because they planned their data collection phase in such a way that they will meet the minimum requirement and will have time to interview more participants if need be. In both studies, the researchers found this preparedness based on their awareness of basic requirements useful and it led to the successful completion of credible studies.

Moreover, the Q-Ü instrument for TS covers a significant amount of issues, yet there are some not directly addressed by the instrument such as training and monitoring the study or the researcher's conceptual insight and skills. The field of GT is enormous, and issues may arise in any number of forms. However, the use of the Q-Ü instrument for TS could take care of multiple such issues. For instance, *reading the thesis* requirements in the instrument would make novice researchers realize that they require training in coding or developing conceptual insight and skills. Novice researchers can then look for training in these specific areas or any other they might feel as every researcher is different and so are their individual needs as researchers.

Additionally, the Q-Ü instrument requires using evaluative criteria of the specific GT school to ensure TS based on specific epistemological grounds (Caelli et al., 2003). Moreover, one quality control criterion cannot be useful for the diverse range of qualitative studies (O'Reilly and Parker, 2012). The Q-Ü instrument for TS, therefore, is not designed as an evaluative checklist or quality criteria checklist. It is an instrument that can guide novice researchers towards saturation by bringing to light the 3 must-take-into-account categories if the novices want to achieve saturation. Application of the instrument will ensure that all important aspects of qualitative research have been considered, which will indirectly lead the researchers toward saturation. However, the prescriptive application of the Q-Ü instrument for TS, similar to all other checklists, would not yield desired results (Barbour, 2001). The researchers' agency is required to analyse the nuances of their research requirements and apply the Q-Ü instrument for TS accordingly.

Shortly, the Q-Ü instrument for TS was applied in two studies and it was found to be useful for novice researchers. Used in its entirety, it could help novice researchers to accomplish TS regardless of their school of GT.

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Genişletilmiş Özet

Amaç

Bu makale Temellendirilmiş Kuram'da Kuramsal Doyuma odaklanacak ve Kuramsal Doyumu ele almak için olası çakışma noktalarını vurgulayacaktır. Bu kavramın yakından incelenmesi, yeni başlayan nitel araştırmacılara rehberlik edecektir. Ayrıca makale, araştırmacıların literatürde belirtilen kuramsal doyumla ilgili sorunları göz önünde bulundurarak Kuramsal Doyuma ulaşmalarını sağlamak için Q-Ü Kuramsal Doyum aracı sunmaktadır. Makale, aracın nasıl kullanılabileceğini daha iyi göstermek için geliştirilen Q-Ü Kuramsal Doyum Ölçeği ile doktora çalışmalarını geriye dönük olarak değerlendireceklerdir. Bu bağlamda, aşağıdaki araştırma sorularının cevaplanması hedeflenmektedir: 1) Literatürde Kuramsal Doyum ile ilgili üzerinde durulan problemlere dayanarak, Temellendirilmiş Kuram çalışmalarında Kuramsal Doyumu değerlendirmek için geliştirilebilecek bir ölçeğin özellikleri neler olabilir?

Tasarım ve Yöntem

Bu makale iki çalışmaya dayanmaktadır: Çalışma A, Akademik Amaçlı İngilizce (bundan sonra EAP) ortamlarında akademik yazma konusunda öğretmenler ve öğrenciler arasında sınıfta sözlü geribildirim etkileşimlerini incelemek için İngiltere'de yürütülmüştür. Çalışma B, mentörlük katılımcıları arasındaki iletişimi incelemek için Almanya'da yapılmıştır. Bu çalışmalarda Temellendirilmiş Kuram rehberliğinde veri toplama ve analizi yapılmıştır. Çalışma A'da Glaser'in Klasik Temellendirilmiş Kuram'ı kullanıldı ve Çalışma B, Charmaz'ın yapılandırmacı yaklaşımını izledi.

Klasik Temellendirilmiş Kuram'ı benimseyen Çalışma A'da, veriler EAP öğretmenleri ve öğrencileri ile yapılan görüşmelerin yanı sıra sınıf gözlemleri yoluyla toplanmıştır. Çalışma A'da birden fazla veri toplama yöntemi kullanılmış olmasına rağmen, bu makale, makalenin limitli olması endişeleri nedeniyle yalnızca görüşmelere ve ilk veri toplama aşamasına odaklanmıştır.

Çalışma B'de, mentörlük katılımcıları arasındaki iletişim akademik ortamda incelenmiştir. Veriler yirmi beş yarı yapılandırılmış görüşme yoluyla toplanmıştır. Çalışmaya on mentor (profesör) ve on beş danışan (doktora sonrası düzeyde) katılmıştır. Katılımcılar, üniversitelerinin mentorluk programlarına bir yılı aşkın süredir kayıtlıdır.

Görüşmeler Yüz yüze, Skype ve Telefon gibi araçlarla bir yıllık bir süre boyunca gerçekleştirildi. Veriler İç İç Örnekleme tekniği kullanılarak toplanmıştır (Yazar B, 2018). Katılımcılarla mentorluk programları ve Kartopu örnekleme yoluyla iletişime geçilmiştir. Görüşmeler, katılımcıların ikna edilmesi üzerine bir saat ile bir buçuk saat arasında gerçekleştirilmiştir. Görüşmeler, Charmaz'ın Öncül Kodlama, Odaklı Kodlama aşamalarının yanı sıra Glaser'i (1978) takip eden Kuramsal Kodlama kullanılarak deşifre edildi, kodlandı ve analiz edildi. Kodlama aşamaları Ü-Q Analiz Ölçeği (Yazarlar, 2020) tarafından yönlendirilmiştir. Çalışma B, mentorlukta iletişim hakkında ortaya çıkan bir teori ile başarıyla sonuçlandırıldı.

Her iki çalışmada da verileri analiz etmek için Temellendirilmiş Kuram benimsendi ve Temellendirilmiş Kuram ilkelerine bağlı kalınarak, yaklaşımın tüm öğeleri kullanıldı. Bu öğelerden biri olan Kuramsal Doyum her iki çalışma için özel bir önem taşıyordu ve Kuramsal Doyumun sağlanması için her iki çalışmada bazı tedbirler alındı.

Bulgular

Araştırma sonucunda çeşitli öğelerden oluşan Q-Ü Kuramsal Doyum ölçeği geliştirilmiştir. Q-Ü Kuramsal Doyum Ölçeği, Kuramsal doyum üzerinde doğrudan etkisi olan 3 ana kategoriden oluşmuştur. İlk kategori, *Kuramsal doyumunu temellendirilmiş kuramın diğer öğeleriyle senkronize etmektir*. Bu kategori altında araştırmacı, sürekli karşılaştırma yöntemi, eşzamanlı veri toplama ve analizi, notlar, kuramsal örnekleme, kuramsal duyarlılık ve okunan tez sayısı dahil olmak üzere herhangi bir temellendirilmiş kuram çalışmasının esaslarına odaklanılmasını sağlar. Bu kriterlerden özellikle okunan tez sayısı, temellendirilmiş kuramın benzer yaklaşımlarındaki araştırmacıların çalışmalarını/tezlerinin incelenmesini sağlayarak araştırmacılara büyük fayda sağlayacaktır. İkinci kategori, *Veri toplama aracıyla ilgili önlemlerdir*. Bu kategori altındaki kriterler, Katılımcı Sayısı, Görüşme Uzunluğu, Veri Kaynakları, Kılavuzdaki Konular ve Çeşitliliği içermektedir. Q-Ü ölçeğindeki üçüncü ana kategori *Değerlendirme Kriterleridir*. Çalışma içerisinde belirtildiği gibi, temellendirilmiş kuramın üç yaklaşımı farklı değerlendirme kriterlerine sahiptir. Glaserci temellendirilmiş kuram için kuramsal doyum ile ilgili değerlendirme kriterleri Uygunluk, Çalışma, Uyum ve Değiştirilebilirliktir. Straussçu temellendirilmiş kuram için değerlendirme kriterleri Geçerlilik, Güvenilirlik ve Sürekliliktir. Yapılandırmacı temellendirilmiş kuram değerlendirme kriterleri ise Güvenilirlik, Orijinallik ve Faydadır.

Sınırlılıklar

Daha önce Barbour (2001) tarafından önerildiği gibi, Q-Ü aracının kuramsal doyum için körü körüne uygulaması, istenen sonuçları vermeyecektir. Araştırmacıların, araştırma gereksinimlerinin nüanslarını analiz etmesi ve kuramsal doyum için Q-Ü aracını bu doğrultuda uygulaması gerekmektedir.

Öneriler

Bu makalenin amacı, başarılı bir araştırma için kuramsal doyumunu elde etmek için herhangi bir temellendirilmiş kuram yaklaşımını takip eden araştırmacılar tarafından kullanılacak bir ölçek tanıtmaktır. Ayrıca, kuramsal doyum için Q-Ü ölçeği, Barbour'un (2001) herhangi bir kontrol listesinin kesin kural olarak benimsenmesinin araştırmacılara güven sağlayabileceği, ancak belirli bir çalışmanın talepleri düşünülmeden uygulandığında ters tepebileceği yönündeki argümanına yanıt vermektedir. Kuramsal Doyum için Q-Ü ölçeği ayrıca her nitel

çalışmanın birden çok faktöre dayalı olarak birbirinden farklı olduğu gerçeğine dayanmaktadır. Q-Ü ölçeği, araştırmacıların başarılı bir araştırma yapabilmesi için nitel araştırmalar ve temellendirilmiş kuram arasındaki temel gereksinimleri/noktaları birleştirmek üzere tasarlanmıştır.

Özgün Değer

Ontolojik ve epistemolojik bakış açılarındaki farklılıklar nedeniyle, temellendirilmiş kuram yaklaşımları özellikle yeni araştırmacılar için aşırı stres yaratmaktadır. Tüm olası çatışmalar bir makale içerisinde ele alınamasa da bu makale kuramsal doyuma odaklanmakta ve bu doğrultuda Q-Ü Kuramsal Doyum ölçeğini sunmaktadır, bu da çalışmanın birincil katkısı olarak öne çıkmaktadır.

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