


## Development and Use of the Alphabetical Analysis Technique in Qualitative Research

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### Abstract

Researchers utilize data analysis methods according to the questions they explore and analyze the data accordingly. However, current qualitative techniques may be insufficient, and many different research designs and techniques have been proposed in recent years. As Patton (1990) stated, if there is no existing method or technique suitable for the research, the researcher should develop and conceptualize one. This study first discusses the importance of choosing the appropriate qualitative research method for the research topic. It then explains which analysis technique should be used in qualitative research and depicts the development process of alphabetical analysis. Finally, the alphabetical analysis technique is introduced. Alphabetical analysis provides a framework for presenting content using the letters of the alphabet. The stages of alphabetical analysis consist of five steps: 1) reading the data multiple times and deciding how to analyze it; 2) preparing a table with the letters of the alphabet; 3) placing each feature under the relevant letter; 4) determining the frequency of each concept or word; 5) writing the features under each letter in a meaningful way. This technique aims to make data more understandable and offers a novel approach for qualitative researchers, increasing interest and readability by presenting characteristics of professions in a different format.

### Keywords

qualitative data analysis, alphabetical analysis, data presentation, meaning making.

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## **Introduction**

Researchers utilize data analysis methods according to the questions they explore and analyze the data accordingly. The choice of a method, often framed as an approach (Patton, 1990) or a paradigm (Kuhn, 1996), either contributes to our understanding of a phenomenon or attempts to solve a problem. Yet, it is not always possible to apply the same analysis technique to solve all problems. As Patton (1990) stated, if there is no existing method or technique suitable for the research, the researcher should develop and conceptualize one.

In recent years, many different research designs have been proposed, and techniques have been developed. Yıldırım and Şimşek (2016) stated that data analysis in qualitative research involves diversity, creativity, and flexibility, with each qualitative research having different characteristics and requiring new approaches in data analysis. Patton (2002) emphasizes that the final decision in analysis belongs to the researcher, who must use all their intellectual capacity to ensure a fair reflection of the data in transforming collected data into findings according to the research's purpose. Because research depends on the skill, education, insight, and competencies of the researcher at every stage, qualitative analysis ultimately relies on the analytical acumen and style of the researcher.

This study explains the development process and use of an analysis technique called the alphabetical analysis technique by giving an example from a research study exploring the characteristics of school principals. Since the alphabetical analysis technique is a qualitative data analysis technique, the features of qualitative data analysis will be explained first. Then, the development process and usage areas of the alphabetical analysis technique will be described.

## **What is Qualitative Data Analysis?**

Researchers employing qualitative research have expressed various perspectives on qualitative data analysis. Sandelowski (1995) highlights that “one of the most paralyzing moments in conducting qualitative research is beginning analysis” (p.375). She suggests the following steps for starting analysis: “getting a sense of the whole, extracting the facts, identifying key topics or major storylines, and using frameworks to reduce data” (p.371). Kuş (2006) notes that qualitative data analysis styles vary in line with the ontological, epistemological, and methodological approaches adopted by researchers. Patton (2002) defines analysis as the transformation of data into findings and emphasizes that there is no strict formula for this transformation, although guiding principles exist. Wolcott (1994) similarly describes qualitative analysis as transforming qualitative data, involving stages of description, analysis, and interpretation. Merriam (2013) views data analysis as the process of making sense of data.

Bogdan and Biklen (1992) consider qualitative data analysis an ongoing process that starts in the field and continues after data collection. They stress that qualitative data analysis should be systematic and detailed, comprising stages such as data collection, coding, theme and pattern identification, data visualization, drawing meaningful conclusions,

and report writing. Kvale (1996) describes qualitative analysis as occupying the space between description and interpretation. Miles et al. (2019) see analysis as “three concurrent flows of activity: data condensation, data display, and conclusion drawing/verification” (p.8). Their approach offers a systematic and in-depth process involving data reduction, visualization, and validation. Tools like coding, theme determination, matrices, and graphs facilitate a better understanding of the data and meaningful results. Merriam (2013) also emphasizes the iterative nature of qualitative data analysis, the importance of coding and categorization, the use of the constant comparative method, memoing, contextualization, ensuring trustworthiness, and achieving data saturation. Her framework guides researchers in systematically analyzing qualitative data, ensuring that findings are grounded in the data and reflective of participants’ experiences.

While qualitative data analysis is often given as a separate title in qualitative research books, the data analysis of specific designs is also addressed individually. For example, Türk and Eksi (2017) discuss data analysis in ethnography while explaining ethnographic methods. Saban and Ersoy (2016) explain the analysis of each design separately after outlining qualitative designs. Kvale (1996) suggests five approaches to interview analysis: condensation, categorization, narrative interpretation, and ad hoc methods. Braun and Clarke (2006) report that thematic analysis is a flexible and comprehensive method used to analyze qualitative data, providing a systematic framework with six steps: familiarization with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. This clear framework provides flexibility and applicability for researchers.

Kabakçı Yurdakul (2016) defines qualitative data analysis as the process of creating a holistic, meaningful, and symbolic structure from qualitative data. Patton (2002) emphasizes that qualitative data analysis should be a flexible, creative, and in-depth process. Key elements include closeness to data, coding, theme identification, validation, and drawing meaningful conclusions. Patton’s approach provides a framework suitable for the dynamic and exploratory nature of qualitative data analysis, guiding researchers in deriving meaningful conclusions from their data.

### **Which Analysis Technique Should Be Used in Qualitative Research?**

Qualitative data analysis involves organizing, analyzing, and interpreting data to capture themes and patterns using valid and reliable mechanisms to answer research questions. Patton (2002) states that the suggestions made through analysis can be adapted to suit the researcher’s particular situation and the study’s purpose. However, researchers are obliged to reflect and report their analysis processes, detailing and accurately showing all aspects.

Valid and reliable qualitative data collected through qualitative data collection methods are generally analyzed manually or using computer software. Merriam (2013) considers data analysis a complex process used to answer research questions. Researchers in the field of qualitative research classify and explain qualitative data analysis techniques in various ways. For example, while Miles et al. (2019) focus on visualization in data analysis, linguists

might consider “the text itself as an object of analysis” (Glesne, 2013) and focus on meaning. Sandelowski (1995) argues that a systematic and disciplined approach will avoid empty coding, reduce resistance to starting analysis, and advance the analysis process. It is well-known that many researchers, especially those new to qualitative research, often proceed with previously created codes or themes.

In recent years, with the widespread use of technology and developments in artificial intelligence, AI-based models, especially GPT-based models, have been recommended for qualitative research analysis (Christou, 2023; Zhao et al., 2023). As a qualitative researcher, I asked ChatGPT 4.0 how it could be used for qualitative research analysis. After providing detailed information, the conclusion given by ChatGPT 4.0 is summarized below:

*“ChatGPT can be a powerful tool for qualitative research analysis, offering support in summarizing data, generating codes, identifying themes, interpreting findings, and drafting reports. By leveraging ChatGPT’s capabilities, researchers can enhance their analytical process, gain new insights, and streamline their workflow. However, it is crucial to use ChatGPT thoughtfully and ethically, complementing it with the researcher’s expertise and judgment.”*

ChatGPT 4.0, which has recently been a topic of discussion, can be used to organize qualitative data and analyze and visualize it. Additionally, by uploading the raw version of the data you have coded and categorized, you can compare the categories created by ChatGPT with your own. The researcher’s task is to control these processes and check their accuracy.

The most well-known qualitative data analysis methods include content analysis, thematic analysis, narrative analysis, grounded theory analysis, and discourse analysis. As a qualitative researcher, I encountered difficulty categorizing my data under limited concepts while conducting research on school principals’ characteristics. When current qualitative techniques were insufficient, I decided to find different ways of presenting and explaining my data in a more understandable format. During this quest, I discovered using letters of the alphabet to explain the characteristics of school principals.

### **How Did the Alphabetical Analysis Technique Emerge?**

Considering that the characteristics of school principals would change significantly in the 2000s, associations related to Educational Administration and Leadership wrote books, conducted research, and organized congresses in the 1990s about the characteristics, competencies, and skills that principals should have in the 21st century. As a researcher in the field, I felt the need to investigate what kind of characteristics school principals, who are at the center of these discussions, think they should possess in the 21st century and to what extent these characteristics reflect the literature. Within this framework, my research explored the question: “What kinds of characteristics should school principals have?”

This research was designed as a qualitative survey study. An online qualitative survey was prepared to reach more diverse participants in a limited time (Jansen, 2010) and to give participants the freedom to answer closed and open-ended questions at their convenience.

The research data were collected online with an open-ended questionnaire via Google Forms, with responses from 83 school administrators from different education levels and 36 different cities.

The following question was posed to school principals: “What kinds of characteristics do you think a school principal should have? Why?” Before analyzing the data, the identified features were read several times. School principals’ opinions were coded according to the concepts expressed. The characteristics of school principals are described in the literature as personality traits, 21st-century skills, competencies, or the top five or top ten characteristics most seen in school principals. In this research, the following procedures were carried out:

1. The characteristics stated by the school principals were listed as 131 characteristics. These characteristics were recoded as personality characteristics and professional characteristics. However, it was observed that some characteristics were not differentiated into either personality or professional characteristics and were coded as common. Of these, 62 characteristics were stated as professional characteristics, 35 characteristics were coded as both personality and professional characteristics, and 34 were coded as personality traits.
2. These codes were reviewed by experts, who suggested that the two headings (personality and professional) were too general and would benefit from being more detailed. However, as seen in the personality traits listed below, it was challenging to categorize the mentioned traits under specific categories:

*Characteristics of school principals coded as personal characteristics include: patient, empathetic, honest, charismatic, tolerant, determined, hard-working, disciplined, flexible, self-sacrificing, cultured, calm and emotionally controlled, intelligent, dynamic, humorous, energetic, trustworthy, enterprising, relaxed, well-intentioned, protective, modest, cheerful, clear, able to share, prudent, respectful, tolerant, consistent, and conciliatory.*

3. The identified characteristics of school principals were also coded as technical, human, and conceptual characteristics, but many characteristics did not fit these concepts.
4. The top ten most frequently mentioned features identified in the introduction of the research were determined, but more than a hundred features remained unclassified beyond the top ten.
5. A matrix was created to examine how much the characteristics determined by school principals reflect 21st-century skills, and these skills were checked.

After all these trials, it was found that some features did not fit into the established categories, and forcing them into such categories would cause a loss of meaning. Therefore, recognizing that flexibility and creativity are essential for qualitative data analysis, I decided it would be more appropriate to specify a broader range of features rather than limiting them to

specific categories. To prevent the loss of meaning, I chose to write each feature under the corresponding letter of the Turkish alphabet. This approach serves as an alternative for researchers who do not wish to categorize their data under specific themes and categories, allowing practitioners to present the characteristics of their profession in more detail. Additionally, presenting the characteristics in this novel format was expected to increase interest and readability of the study. For example, the ABCs of being a School Principal. Ultimately, the aim is to convey the features directly to the reader as expressed by the participants, without being overly conceptual.

### Alphabetic Analyzing Steps

The steps of alphabetical analysis consist of five stages, each explained below:

**Step 1: Reading the Data Multiple Times and Deciding How to Analyze It.** First, you need to read your data multiple times to understand whether it can be organized according to certain categories or themes. Assess if you can create a classification, category, or theme based on what you read. If there is difficulty in making categories and too many features are reflected, you can code and use alphabetical analysis.

**Step 2: Preparing a Table with the Letters of the Alphabet.** After all the data is coded, it should be checked whether the features could be categorized according to specific categories again. If there are too many features that cannot be included under a certain category or theme, and these features would lose their meaning under such categories, then the features will be listed under the corresponding letter in the prepared alphabet table.

**Step 3: Putting Each Feature Under the Relevant Alphabet.** While writing each feature under the relevant alphabet letter, also note how often each specified feature is mentioned. See the display below.

**Table 1**

*Principal's Qualities*

A -Frequency	B -Frequency	C -Frequency	Ç -Frequency
Adaletli (15) Anlayışlı (9) Adil (4) Azimli (2) <b>Alanında uzman</b> Alicıları her zaman açık Anında müdahale edebilmeli- Aidiyetli olmalı Araştıran olmalı	Bilgili (6) Becerili Bilimsel gelişmeleri takip eden Babacan Bütünleyici Bulunduğu ortamda etki yaratmalı		<b>Çözüm odaklı (4)</b> Çalışkan (2) Çevresi olan Çevre ilişkisini yönetebilmeli Çalışanları tam kapasite çalıştırabilmeli
D -Frequency	E -Frequency	F -Frequency	G -Frequency
<b>Dinlemeyi bilmeli (3)</b> Donanımlı(3) Dürüst (3) Disiplinli (2) Dinamik Değişime açık Destekleyen Dirayetli Değer gören <b>Duygularını kontrol edebilen</b> <b>Duygudaşlık kurabilen</b>	Empati kurabilen/yapabilen (4) Esnek-esnek olmalı (2) Eşit mesafeyi sağlamalı <b>Etkili iletişim sağlamalı</b> Esprili olmalı Entelektüel olmalı Enerjik Ekip ruhu ile hareket eden Eleştiriye açık	<b>Fedakâr (2)</b> Farklılıklara saygı gösteren	Güvenilir olma(6) Gelişmeleri takip eden(2) <b>Gelişime açık olmak (2)</b> Görevin bilincinde olmak- Güçlü yönlerini bilmek Görev ahlakı Geleceği görmek Güven vermeli Girişimci Güç kaynaklarını iyi kullanabilmeli Geniş olmalı(Rahat olmalı)
H -Frequency	I -Frequency	İ -Frequency	J -Frequency
Hoşgörülü (3) Herkesle eşit mesafede olmak (2) Hakkaniyetli olma Huzurlu çalışma ortamı oluşturmalı		İletişim güçlü olmalı/ iyi olmalı/iletişim becerilerine sahip/iletişim cambazı/iletişime açık (16) İnsan ilişkileri iyi olmalı/ insancıl becerileri olan (6) İyi bir eğitimci/eğitim bilimci olma(2) İşbirliğine açık olan(2) İşini sevmeli <b>İyi bir dinleyici olmalı</b> İnisiyatif alabilmeli İyi niyetli olmalı İnsanlara inanıp bunu insanlara yansıtabilmek İnsanlara değer vermeli İsteklendirme unsurlarını keşfetmek İletişimi iyi olanlara pozitif bakabilmeli İstisare etmeli İdareci olmalıİradeli olmalı İşlere öncülük etmeli	

K -Frequency	L -Frequency	M -Frequency	N -Frequency
Karizmatik (3) Kültürlü (2) Kararlı(2) Kendini sürekli geliştiren(2) Kriz yönetimi güçlü Koruyucu Karar verme süreçlerini iyi bilmeli Kişisel gelişime açık Kavramsal becerileri olan Kifayetli Karar alabilen Kapsayıcı Kendini güncel tutan Kurumdaki üyeleri harekete geçirmeli Kaynakları amacına uygun doğru kullanmalı	Lider olmalı-lider ruhuna sahip olmalı ve liderlik etmeli (16) Liyakat sahibi olmalı	Mevzuata hakim olmalı (2) Motivasyon gücü Mesleki gelişime açık olmak Mesleki tecrübesi olmalı Manipülasyon yapabilmeli Mütevazı olmalı	Ne istediğini ne yaptığını bilen olmalı Neşeli Net olmalı Nazik Net bir kişilik
O -Frequency	Ö -Frequency	P -Frequency	R -Frequency
Organizasyon becerisi olmalı(3) Otokontrolü yüksek olmalı Ortak hedef oluşturma Otoriter Okul-aile işbirliğini önemsemeli Ortak akılla yönetimi benimsemeli Objektif	Öngörülü(2) Önyargısız Örnek olunmalı Öğretimsel lider Öğrenmeye açık olmalı Öğretmenleri mesleki geliştirmeye teşvik etmeli Ötekileştirmeyen Özverili olma	Planlama/program yapma becerisi (3) Pratik olmalı (2) Profesyonel Problem çözen Potansiyeli ortaya çıkarma becerisine sahip Paylaşımçı (lider) Paylaşmayı bilen Personele değer veren	Risk alabilen Risk yönetebilmeli Rol model
S -Frequency	Ş -Frequency	T -Frequency	U -Frequency
Sabırlı(13) Sorumlulukların bilincinde olan(4) Sakin (2) Sorumluluk almaya ve sorumluluk vermeye hazır olmak Sorun çözme becerisi yüksek Sorunları yakından takip eden Sağduyulu Saygı sevgi göstermeli/görmeli Sevgi ve saygıya dayalı disiplini benimsemeli Sorunlara pratik çözümler üretebilmeli Saygılı Sosyal becerisi yüksek	Şeffaf (2)	Tecrübeli (2) Tarafsız(2) Teknik becerisi olan (2) Tolere etme özelliği olmalı Temsil yeteneği olan Tutarlı Tüm branşlarda fikir sahibi olmalı Tahammüllü Teknolojik gelişmelere açık	Uzman olmalı Uzlaştırmacı



Ü -Frequency	V -Frequency	Y -Frequency	Z -Frequency
	Vizyoner/Vizyon sahibi (6)	Yenilikçi/yeniliklere açık (10) Yönetişim ile okulu yönetmek/yönetişim uzmanı olmak (4) Yetkin Yol gösterici Yönetim süreçlerini uygulama becerisine sahip Yönetmeyi bilmeli Yetenekli Yetkisini dağıtabilmeli Yönlendirici Yapıcı	Zeki (2) Zayıf yönlerini bilen

In the table above, under each letter are the characteristics that school principals expected to have. These features can be written under each letter (See step 5). Again, there are different colors in the table above. These colors reflect words that evoke the same concept but are expressed in different words. These words are especially important when you determine the frequency related to that concept. In my study, I wanted to look at the top ten characteristics that reflect school principals. I had to look at the first ten features according to the words that reflect that feature and the frequencies. For example, there were many words expressing the concept of leadership. I put them under the concept of leadership and looked at its frequency. Thus, I identified the most frequently recurring feature. Researchers who will analyze in this way can put a feature expressed in different words under a concept or category and analyze it in that way as well.

**Step 4: Determine the Frequency of the Concept or the Word.** A list is created to see under which feature the data features are gathered in terms of frequency. In this research, if a feature was expressed with different words, they were included under one word to determine the frequency. For example, being a visionary, being foresighted, and seeing the future were expressed under different letters. They were listed under “vision” as a feature when viewed by frequency under one word.

**Step 5: Writing the Features Under Each Letter in a Meaningful Way.** Write the features under each letter in a meaningful way. The characteristics stated by the school principals participating in the research were written under the letter of the alphabet that started with that letter, and then those characteristics were written meaningfully with a title. For example, school principals’ characteristics starting with the letters A and B are written as follows.

**A harfinde müdürde olması beklenen özellikler:** Okul müdürü adaletli (15), anlayışlı (9), adil (4), azimli (2), alanında uzman, alıcıları her zaman açık, aidiyetli ve araştıran olmalıdır.

**B harfinde müdürde olması beklenen özellikler:** Okul müdürü bilgili (6), becerili, bilimsel gelişmeleri takip eden, babacan, bütünleyici ve bulunduğu ortamda etki yaratmalıdır.

When writing article in any other foreign languages, the features appear differently. The features below the Turkish letters A and B have been added so that you can see how they change when written in English. Therefore, each researcher can analyze by using the letters of his/her country's alphabet and place the feature starting with that letter among the features specified in the table.

**Characteristics expected in the principal with the letter A:** The school principal should be fair (15), understanding (9), fair (4), determined (2), an expert in his field, always open to the recipients, committed and inquisitive.

**Characteristics expected in the principal with the letter B:** The school principal should be knowledgeable (6), skillful, follow scientific developments, fatherly, integrative and create an impact in the environment he is in.

### How and Where Could Alphabetic Analysis Be Used?

The technique you choose for qualitative research should align with your research questions, objectives, and the nature of your data. Each technique offers unique advantages and is best suited for different types of inquiries. For instance, thematic analysis is versatile and widely applicable, grounded theory is ideal for theory generation, phenomenological analysis is suited for exploring lived experiences, and ethnographic analysis is best for studying cultural contexts. Ultimately, the choice of technique should be guided by what will best help you achieve your research goals and provide meaningful insights into your research topic. If existing analysis methods cannot answer your research question or reflect your data meaningfully, you can develop a new analysis method.

Alphabetic analysis provides a framework for the rich and detailed presentation of content using the letters of the alphabet. With this framework, researchers can make data more understandable and present it in a clearer manner to the reader. This approach offers a novel analysis technique for researchers conducting qualitative research. It serves as an alternative for researchers who have difficulty categorizing their data under specific themes and categories. Moreover, it allows practitioners to present the characteristics of their professions as expressed by those in the field in greater detail. Additionally, presenting the characteristics in this novel format is expected to increase interest and readability of the study. Alphabetical analysis aims to convey and translate features directly to the reader as expressed by the participants, without being overly conceptual. In the mentioned research, features were determined under each letter and their frequencies were noted. However, other researchers may explain or thematize their data under specific categories if the features under the letters are similar or related.

The Alphabetical Analysis Technique is particularly well-suited for qualitative data or studies where the data is rich, detailed, and diverse, and where traditional categorization methods might lead to a loss of nuance or meaning. This technique is flexible and creative, making it suitable for a variety of research contexts. Descriptive studies, survey studies and document analysis are some types of data or studies that could benefit from alphabetical

analysis. Descriptive studies that related with profiles of individuals or professions like characteristics of leaders, teachers, students, or any other group with diverse traits can be suitable for alphabetical analysis. Responses from surveys with open-ended questions where participants provide a wide range of answers and qualitative feedback from stakeholders, such as customers, employees, or community members could be analysed by alphabetical analysis technique. Alphabetical analysis can be applicable for document analysis mainly related with analysis of policy documents, legal texts, historical texts, letters, archival materials or educational curriculums where specific features or elements need to be highlighted.

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