**Qualitative Data Collection and Analysis**

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**Introduction**

This was my first time conducting qualitative research interviews, and I wanted to explore how AI, particularly ChatGPT, impacts higher education. To capture different perspectives, I interviewed a graduate student specializing in business analytics and an undergraduate student who works at the William & Mary Writing Center. These individuals were selected because their experiences offered insights into both academic practices and administrative decision-making, allowing me to understand AI's impact in both contexts.

**Methodology**

I decided to interview individuals who had relevant experience with AI in both administrative and academic settings. The graduate student in business analytics was a natural choice because of their extensive use of AI tools in decision-making, while the undergraduate student provided valuable insights into how students are currently utilizing AI in their academic work, particularly in writing. These two different perspectives helped me explore the role of AI in higher education more broadly.

The individuals I chose to interview were a graduate student specializing in business analytics with professional experience in both health and business sectors, and an undergraduate student majoring in linguistics and psychology who works at the Writing Center. The graduate student could offer insights into AI’s administrative efficiency, while the undergraduate student could share their experiences with students using AI for academic purposes.

Fortunately, both individuals agreed to participate in the interviews. This made the process much smoother, as I did not have to seek out additional candidates. I approached both of them in person, which made it easier to introduce the project casually and invite them to participate. Given that I work closely with them, this personal approach worked well.

I conducted both interviews in person, which allowed the conversations to flow naturally. This setting also enabled me to ask spontaneous follow-up questions based on their responses, leading to deeper discussions. I used Notability on my iPad to record the interviews, which also automatically transcribed the conversations. During key moments, I took brief notes to help me flag important points to revisit later when reviewing the transcription.

During the interviews, I asked follow-up questions spontaneously. For instance, in the first interview with the graduate student, I inquired about the ethical challenges of AI in business analytics and higher education administration. In the second interview, I asked more in-depth questions about academic dishonesty and the issue of AI-generated fake sources, which the Writing Center student had encountered in their work with peers.

After the first interview, I realized that ethical concerns were becoming a central theme in the conversation. As a result, I adjusted my approach for the second interview to focus more on academic integrity and how students are using AI tools like ChatGPT. This adjustment helped me gather more detailed insights on this important issue.

Throughout the interviews, I paraphrased key points and sought clarification when needed to ensure I accurately captured the interviewees' thoughts. Both participants were helpful in confirming or expanding on my interpretations, which gave me confidence in the accuracy of the data I collected.

**Data Analysis**

Using Notability’s transcription feature, I reviewed and coded the data in stages. After transcribing, I read through the text several times, highlighting key themes such as AI efficiency, ethical risks, and the impact on student learning.

Initial Coding:

* Interview 1 (Graduate Student in Business Analytics):
  + AI improves decision-making: “AI helps analyze large sets of data.”
  + Bias in AI data: “Challenges arise when AI is trained on incomplete data.”
  + Over-reliance on AI: “Students might rely too much on AI and lose critical thinking skills.”
  + Need for human judgment: “AI can’t replace human judgment in ethical considerations.”
* Interview 2 (Undergraduate Student in Writing Center):
  + Academic dishonesty: “I have seen cases where students ask AI to write entire papers.”
  + AI-generated misinformation: “AI sometimes makes up sources, and students don’t realize they aren’t real.”
  + AI helps with brainstorming: “ChatGPT can be useful for organizing ideas.”

Final Coding:

* **AI Efficiency vs. Ethical Risks:**
  + Both interviews highlighted AI’s ability to improve decision-making and efficiency. However, bias in AI data and over-reliance on AI in student learning were significant ethical concerns.
* **Impact on Student Learning:**
  + AI risks weakening students’ critical thinking skills. AI-generated misinformation and academic dishonesty were major challenges identified by the undergraduate student.

**General Results**

* The interviews revealed that AI, particularly ChatGPT, has a substantial impact on higher education. The graduate student noted that AI can significantly enhance administrative decision-making by quickly analyzing large datasets, making processes more efficient. However, both interviewees expressed concerns about the ethical implications of AI, particularly regarding bias in the data and over-reliance on AI by students, which can erode critical thinking skills.
* In the second interview, the Writing Center employee highlighted the risks AI poses to academic integrity. Students sometimes rely on ChatGPT to generate papers or use fake sources without realizing it, causing problems for academic honesty. Both interviewees emphasized the need for clear guidelines around AI use in education, particularly concerning academic integrity and ethical decision-making.
* While AI has the potential to bring great benefits to higher education, it also presents significant ethical challenges that must be carefully managed. A balance between leveraging AI’s efficiency and maintaining academic integrity is essential to ensure students develop necessary skills while responsibly using new technologies.

Reflection on the Process

* As this was my first time conducting qualitative research, I learned the importance of creating a comfortable and open environment for the interviewees, which helped them share detailed responses. The process of coding the interviews allowed me to see the recurring themes of ethical concerns and the potential risks of AI.
* What surprised me the most was the extent to which AI-generated misinformation could affect academic integrity. The Writing Center employee’s experience with students unknowingly using fake sources was an issue I hadn’t anticipated. It highlighted the need for more robust academic guidelines surrounding AI use.
* I had to adjust my approach after the first interview when I realized that ethical concerns were much more central to the discussion than expected. Shifting my focus for the second interview allowed me to gather more targeted information.
* Overall, the transcription and data analysis process were straightforward, but time-consuming. Repeatedly listening to the recordings helped me ensure that I captured every detail accurately. The coding process, particularly in grouping themes, helped me draw meaningful conclusions about the ethical risks and opportunities AI presents in higher education.

**Appendices**

**Appendix A: Recording and Transcription**

I used Notability on my iPad to record both interviews, which automatically transcribed the conversations. This allowed me to stay engaged in the interviews without worrying about manual notetaking. The transcription was available immediately after each interview, saving me significant time in the data processing stage.

Appendix B: Transcription Segments

* Interview **1 (Graduate Student in Business Analytics):** "AI, including tools like ChatGPT, has been incredibly useful in data-driven decision-making. It helps analyze large sets of data that would otherwise take days. But there are challenges, especially when the AI is trained on biased or incomplete data. In higher education, I see AI impacting administrative efficiency, but there’s also a risk that students might rely too heavily on it and lose their critical thinking skills. AI can’t replace human judgment, especially when it comes to ethical considerations.”
* Interview **2 (Undergraduate Student in Writing Center):** "ChatGPT can be useful for brainstorming, helping students generate ideas for essays. But sometimes AI makes up sources, and students don’t realize those sources aren’t real. This can cause academic integrity issues, and there need to be clear guidelines about how to use AI in academic work.”

**Appendix C: Coding Process**

**Initial Coding:**

* AI improves decision-making: “AI helps analyze large sets of data.”
* Bias in AI data: “Challenges arise when AI is trained on incomplete data.”
* Over-reliance on AI: “Students might rely too much on AI and lose critical thinking skills.”
* Academic dishonesty: “Students ask ChatGPT to write entire papers.”

**Final Coding:**

* AI Efficiency vs. Ethical Risks: AI improves decision-making but raises ethical concerns due to biased data and over-reliance.
* Impact on Student Learning: AI risks eroding students’ critical thinking abilities and poses challenges for academic integrity.

**Appendix D: Handwritten Notes Taken During Interviews**

In addition to the transcription, I took brief handwritten notes during both interviews to highlight key points and observations that I wanted to revisit later. These notes, which were taken in real-time during the conversations, are attached in Appendix D for review. The notes helped guide my focus during the transcription and coding process.

**Appendix E**

**Transcription Segment (from Interview A, Graduate Student in Business Analytics)**

"AI,including tools like ChatGPT, has been incredibly useful in data-driven decision-making. It helps analyze large sets of data that would otherwise take days or weeks. But there are challenges, especially when the AI is trained on biased or incomplete data. In higher education, I see AI impacting administrative efficiency, but there’s also a risk that students might rely too heavily on it and lose their critical thinking skills. AI can’t replace human judgment, especially when it comes to ethical considerations."

**Step 2: Initial Review of the Transcription**

I reviewed the transcript and highlighted key sections that corresponded to my research questions on the role of AI in higher education. The initial review helped identify emerging themes and patterns.

**Highlighted sections from the transcription:**

* **AI improves decision-making**: “AI has been incredibly useful in data-driven decision-making. It helps analyze large sets of data that would otherwise take days or weeks.”
* **Bias in AI**: “But there are challenges, especially when the AI is trained on biased or incomplete data.”
* **Student over-reliance on AI**: “There’s also a risk that students might rely too heavily on it and lose their critical thinking skills.”
* **Need for human judgment**: “AI can’t replace human judgment, especially when it comes to ethical considerations.”

**Step 3: Taking Notes and Highlighting Key Points**

Using Notability’s highlighting feature, I flagged the following key points to explore in my analysis:

* **AI Efficiency**: The interviewee emphasized how AI can quickly analyze large datasets, making decision-making more efficient.
  + “It helps analyze large sets of data that would otherwise take days or weeks.”
* **Bias in AI**: The interviewee expressed concern about bias, noting that AI can produce inaccurate results if it’s trained on flawed or incomplete data.
  + “There are challenges, especially when AI is trained on biased or incomplete data.”
* **Over-reliance on AI**: The interviewee noted that students might become overly dependent on AI, which could impede the development of their critical thinking skills.
  + “There’s also a risk that students might rely too heavily on it and lose their critical thinking skills.”
* **Human Oversight**: AI cannot fully replace human judgment, especially when it comes to ethical decision-making.
  + “AI can’t replace human judgment, especially when it comes to ethical considerations.”

**Step 4: Initial Coding**

After reviewing the transcription and notes, I began the initial coding process. I extracted core ideas and grouped them into the following codes:

* **AI Efficiency**:
  + “AI has been incredibly useful in data-driven decision-making.”
  + “It helps analyze large sets of data that would otherwise take days or weeks.”
  + **Code**: AI improves administrative efficiency.
* **Bias in AI**:
  + “There are challenges, especially when the AI is trained on biased or incomplete data.”
  + **Code**: Bias in AI data.
* **Over-reliance on AI**:
  + “There’s a risk that students might rely too heavily on it and lose their critical thinking skills.”
  + **Code**: Students may become over-reliant on AI.
* **Human Judgment**:
  + “AI can’t replace human judgment, especially when it comes to ethical considerations.”
  + **Code**: Human judgment is essential in decision-making.

**Step 5: Final Coding**

During the final coding phase, I grouped the initial codes into broader, more comprehensive categories. This process helped refine the insights gained from the interviews:

* **AI Efficiency vs. Ethical Risks**:
  + I combined the discussions about AI’s ability to improve efficiency with concerns about the ethical risks posed by biases in AI data.
  + “AI has been incredibly useful but there are challenges, especially when AI is trained on biased or incomplete data.”
  + **Final Code**: AI improves efficiency but brings ethical risks.
* **Impact on Student Learning**:
  + The discussions about over-reliance on AI were combined with the need for human judgment, emphasizing the potential impact on students’ ability to think critically.
  + “There’s a risk that students might rely too heavily on it and lose their critical thinking skills.”
  + “AI can’t replace human judgment.”
  + **Final Code**: AI risks weakening students' critical thinking; human oversight is necessary.

**Step 6: Reflection and Analysis**

Reflecting on this coding process, I noted that the themes identified AI efficiency, ethical concerns, and over-reliance on AI directly connected to the broader question of how AI is impacting higher education. The graduate student provided critical insights into how AI supports data-driven decision-making while raising concerns about the ethical limitations of these systems. This analysis reinforced the need for human oversight, even as AI becomes more integrated into both administrative and academic processes.

**Appendix F**

**Transcription Segment (from Interview 2, Undergraduate Student and Writing Center Employee)**

Interviewer: "Thank you so much for agreeing to help me with this project. Can you share a bit about your role as a student and at the Writing Center?"  
Interviewee: "Sure! I'm a double major in linguistics and psychology, and I work as a Writing Center tutor. In my role, I help students improve their writing and critical thinking skills. We see a variety of papers, and lately, a lot of students have been using AI tools like ChatGPT to generate content for their essays."  
Interviewer (You): "How do you see students using AI, and what impact does it have on their writing?"  
Interviewee: "It’s a mixed bag. Some use it to brainstorm ideas or organize their thoughts, but there are cases where students rely too much on AI, sometimes asking it to write whole papers for them. The biggest issue we’re seeing is AI creating fake sources, which students include in their work without realizing they aren't real."  
Interviewer (You): "That’s a serious issue. How does the Writing Center handle this?"  
Interviewee: "We’ve been educating students about the risks. We emphasize that while AI can be useful for generating ideas, it can’t replace critical thinking, or the integrity needed for academic work. It’s important that they know how to properly use and cite any AI-generated content."

**Step 2: Initial Review of the Transcription**

During the initial review of the interview transcript, I highlighted key themes based on the conversation. The sections I highlighted include:

* **AI in student work**: "A lot of students have been using AI tools like ChatGPT to generate content for their essays."
* **Over-reliance on AI**: "There are cases where students rely too much on AI, sometimes asking it to write whole papers for them."
* **AI-generated misinformation**: "The biggest issue we’re seeing is AI creating fake sources, which students include in their work without realizing they aren't real."
* **Importance of critical thinking**: "While AI can be useful for generating ideas, it can’t replace critical thinking, or the integrity needed for academic work."

**Step 3: Taking Notes and Highlighting Key Points**

As I reviewed the transcription, I took notes and used highlighting tools to capture key points that I could revisit during the coding process. The key points are:

* **AI helps with brainstorming**: ChatGPT can be a useful tool for students to generate ideas for their essays.
  + "Some use it to brainstorm ideas or organize their thoughts."
* **Over-reliance on AI**: Some students are asking AI to generate entire essays for them.
  + "Students rely too much on AI, sometimes asking it to write whole papers for them."
* **Misinformation and fake sources**: The issue of students unknowingly using fake sources generated by AI in their papers.
  + "The biggest issue we’re seeing is AI creating fake sources."
* **Need for critical thinking**: AI should not replace students’ ability to think critically and produce original work.
  + "AI can’t replace critical thinking or the integrity needed for academic work."

**Step 4: Initial Coding**

Based on the key points I noted, I identified the following initial codes from the interview:

* **AI as a brainstorming tool**:
  + "Some use it to brainstorm ideas or organize their thoughts."
  + Code: AI assists with idea generation.
* **Over-reliance on AI**:
  + "Students rely too much on AI, sometimes asking it to write whole papers for them."
  + Code: Over-reliance on AI weakens independent learning.
* **Misinformation through AI**:
  + "The biggest issue we’re seeing is AI creating fake sources, which students include in their work."
  + Code: AI generates fake sources, impacting academic integrity.
* **Critical thinking vs. AI use**:
  + "AI can’t replace critical thinking or the integrity needed for academic work."
  + Code: AI undermines critical thinking if misused.

**Step 5: Final Coding**

During the final coding process, I grouped the initial codes into broader categories to form a more coherent understanding of the interviewee's insights:

* **AI as a useful tool vs. ethical risks**:
  + I combined the idea that AI helps with brainstorming but can also lead to misinformation, focusing on the balance between usefulness and potential risks.
    - Final Code: AI can be useful for generating ideas but comes with ethical risks like misinformation.
* **Impact of over-reliance on AI**:
  + I merged concerns about students asking AI to do too much work with the emphasis on critical thinking, to capture the educational impact.
    - Final Code: Over-reliance on AI diminishes critical thinking and academic integrity.

**Step 6: Reflection and Analysis**

This interview highlighted several critical aspects of AI use in academic settings. The Writing Center employee provided practical insights into how students are using ChatGPT both appropriately and in ways that raise ethical concerns. While AI can be a powerful tool for generating ideas, students often misuse it, leading to issues like the inclusion of AI-generated fake sources in their papers. This reinforces the need for education around AI and clear guidelines on how it should be used to maintain academic integrity. The themes from this interview align closely with the broader research question about AI's impact on higher education, particularly its role in affecting critical thinking and ethical standards in student work.