







# Introductions



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Slides available at: evalu-ate.org/webinars/nov24

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Advanced Technological Education Program www.nsf.gov/ate



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# Hello



**Brianna** Hooks Singletary



**Lyssa** Wilson Becho





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## Many ATE evaluators use qualitative methods.





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Slides available at:





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Rapid Qualitative Analysis (RQA)

a **systematic yet efficient** way to understand people's experiences and stories, using **structured methods** to **uncover meaningful patterns** while maintaining research quality.

# **Time-Saving Strategies for RQA**



Use Interview Summaries and Audio Clips Instead of Full Transcriptions



Implement Structured Frameworks for Streamlined Analysis



Create and Use a Data Reduction Table to Organize Key Insights



Apply Deductive Coding Techniques for Focused Data Interpretation











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# RQA Structured Frameworks and Approaches

help organize data consistently, streamline analysis, and maintain the quality and rigor needed to effectively identify key findings and insights.







# Consolidated Framework for Implementation Research (CFIR)

Framework Guidance:	
The CFIR is intended to be used to col	lect data from individuals who have power and/or influence over implementation outcomes. See the CFIR Outcomes Addendum for guidance on identifying t
selecting outcomes.	
The CFIR must be fully operationalized	d prior to use in a project:
	for the project (see guidance for each domain below).
	vith project-specific language if needed.
<ol> <li>Add constructs to capture salient the</li> </ol>	nemes not included in the updated CFIR.
I. INNOVATION DOMAIN	
Innovation: The "thing" being implem	ented, e.g., a new clinical treatment, educational program, or city service.
[Document the innovation being imple	emented, e.g., innovation type, innovation core vs. adaptable components, using a published reporting guideline. Distinguish the innovation (the "thing" tha
	emented, e.g., innovation type, innovation core vs. adaptable components, using a published reporting guideline. Distinguish the innovation (the "thing" tha : implementation process and strategies used to implement the innovation (activities that end after implementation is complete).]
implementation is complete) from the	i implementation process and strategies used to implement the innovation (activities that end after implementation is complete).]
implementation is complete) from the Construct Name	Implementation process and strategies used to implement the innovation (activities that end after implementation is complete).] Construct Definition
Implementation is complete) from the Construct Name A. Innovation Source	Implementation process and strategies used to implement the innovation (activities that end after implementation is complete).] Construct Definition The degree to which the group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable.
implementation is complete) from the Construct Name A. Innovation Source B. Innovation Evidence-Base	Implementation process and strategies used to implement the innovation (activities that end after implementation is complete).]  Construct Definition  The degree to which the group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable.  The degree to which the innovation has robust evidence supporting its effectiveness.
Implementation is complete) from the Construct Name A. Innovation Source B. Innovation Evidence-Base C. Innovation Relative Advantage	Implementation process and strategies used to implement the innovation (activities that end after implementation is complete).] Construct Definition The degree to which the group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable. The degree to which the innovation has robust evidence supporting its effectiveness. The degree to which the innovation is better than other available innovations or current practice.
Implementation is complete) from the Construct Name A. Innovation Source B. Innovation Evidence-Base C. Innovation Relative Advantage D. Innovation Adaptability	Implementation process and strategies used to implement the innovation (activities that end after implementation is complete).] Construct Definition The degree to which the group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable. The degree to which the innovation has robust evidence supporting its effectiveness. The degree to which the innovation is better than other available innovations or current practice. The degree to which the innovation can be modified, tailored, or refined to fit local context or needs.
Implementation is complete) from the Construct Name A. Innovation Source B. Innovation Evidence-Base C. Innovation Relative Advantage D. Innovation Adaptability E. Innovation Trialability	Implementation process and strategies used to implement the innovation (activities that end after implementation is complete).]  Construct Definition  The degree to which the group that developed and/or visibly sponsored use of the innovation is reputable, credible, and/or trustable.  The degree to which the innovation has robust evidence supporting its effectiveness.  The degree to which the innovation is better than other available innovations or current practice.  The degree to which the innovation can be modified, tailored, or refined to fit local context or needs.  The degree to which the innovation can be tested or piloted on a small scale and undone.

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**Create and Use a Data Reduction Table to Organize Key Insights** 

# RQA Data Reduction Tables

tools used in qualitative data analysis to organize, condense, and summarize large amounts of data into manageable, meaningful segments.





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# Deductive Approaches in Rapid Qualitative Analysis

A top-down approach where you apply a predefined set of codes based on existing theories, frameworks, or hypotheses.





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# Deductive Approaches in Rapid Qualitative Analysis

A top-down approach where you apply a predefined set of codes based on existing theories, frameworks, or hypotheses.



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+ (positive), - (negative), or D (neutral). Focus on	ly on whether the t	theme appe	ars ii	n the segme	ent,	, nat its free	que	ncy.				
	Clip 1	Clip 2		Clip 3		Clip 4		Clip 5		Clip 6		Clip 7
Theme 1: Overall Experience as a Partner												
Sub Code: Perceived Value		~	٠									
Sub Code: Engagement Level												
Sub Code: Satisfaction		~	•		_		-		_		-	
Theme 2: Satisfaction with Participant Skills												
Sub Code: Technical Proficiency		~	•	~								
Sub Code: Soft Skills		~										
Sub Code: Prepareciness		~	+									
Sub Code: Skills Gaps												
Sub Code: Curriculum Suggestions				~	0							
Theme 3: Alignment with Industry Needs												
Sub Code: Current Alignment				~	0							
Sub Code: Future Needs						~	0					
Theme 4: Hiring and Retention of Program Graduates												
Sub Code: Hiring Success						~	0					
Sub Code: Performance Satisfaction						~	٠	~	٠			
Sub Code: Retention												
Sub Code: Underrepresented Groups								~	0	~	0	
Theme 5: Saatainability of Partnerships												
Sub Code: Long-Term Partnership Potential										~	٥	
Sub Code: Key Sustainability Factors								~	0			
Sub Code: Employer Engagement												
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Hamilton RQA Method



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Slides available at:

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B

С



As an evaluator using **rapid qualitative approaches**, which specific approach might you choose to streamline and expedite your data analysis process?

Creating data reduction tables to organize and condense key themes and insights across interviews.

B Conducting in-depth, line-by-line coding of full interview transcripts.

Performing a comprehensive literature review before beginning data analysis.

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# **Chat Question**

How have you used AI-assisted technology to support your qualitative analysis?



Answer in the chat box

# Large Language Models

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Slides available at:



# **Considerations When Using AI**



Use Al as your assistant. It cannot replace you.



Al lacks context. It only has the data you give it.



Al needs supervision. It hallucinates.





## Al isn't good at "why" questions.

Its good at spotting patterns, not understanding motivations.

#### AI is biased.

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It exacerbates human error that is already there.

Not all AI data security is made equal.

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# Using AI to Support RQA AI-Assisted Transcription



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# Using AI to Support RQA AI-Assisted Data Organization





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# Using AI to Support RQA AI-Assisted Data Organization





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# Using AI to Support RQA AI-Assisted Coding



MAXQDA NVIVO insight Delve

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# Using AI to Support RQA AI-Assisted Coding





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# Using AI to Support RQA AI-Assisted Coding

from in	New chat	0	
Based on these interviews, develop a detailed thematic analysis report. Highlight key patterns, insights, an emerging trends to inform decision-making processe.	nd		
Base your responses strictly on the provided information and don't add any external information.			
Thematic Analysis Report: TechForward Robotics Workforce Development Project			
Introduction			
This report synthesizes feedback from two industry partners, RoboTach Solutions and AutoTech Robotics, regarding their experimence with the TechForward Robotics Workforce Development Project at Netwerbard Community College. The analysis identifies key patterns, insights, and emerging trends to inform decision- making processes for program improvement.			
Key Themes and Patterns			
1. Overall Positive Experience			
Both partners expressed a generally positive experience with the program.     Alex (RoboTech Solutions) highlighted consistent communication and a solid talent pipeline.     Taylor (AutoTech Robotics) noted the programs pontential but methoded communication challenges.			
2. Skills and Knowledge of Participants			



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# Using AI to Support RQA AI-Assisted Coding

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Copilot I have two tr	anscripts from in	① New chat	Ø	
	Areas for Improvement			
	<ul> <li>Precision Machining: Both partners identified a need for more focus on precision machining skills.</li> <li>Troubleshooting: Taylor emphasized the need for better troubleshooting abilities, particularly in real-world scenarios.</li> </ul>			
	3. Alignment with Industry Needs			
	Current Needs:			
	<ul> <li>The program aligns well with immediate industry needs in robotics and automation.</li> </ul>			
	Emerging Needs:			
	Systems Integration: Alex stressed the importance of integrating robotics with other industrial systems like IoT devices.     Ar-Driven Analytics: Sulpor highlighted the growing demand for skills related to robotics integration with Al-driven analytics.     Cybersecurity: Both partners underscored the need for training in safeguarding automated systems against cyber threats.			
	4. Real-World Problem-Solving			
	<ul> <li>Both partners suggested incorporating more real-world scenarios and hands-on experiences into the curriculum.</li> <li>Taylor recommended scenario-based training and case studies to simulate unexpected issues and enhance troublebotion skills.</li> </ul>			
	5. Hiring and Performance of Graduates			



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# Using AI to Support RQA AI-Assisted Coding





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# Using AI to Support RQA AI-Assisted Coding





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# Using AI to Support RQA AI-Assisted Exploration of Transcripts



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# Using AI to Support RQA AI-Assisted Exploration of Transcripts





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# Using AI to Support RQA AI-Assisted Exploration of Transcripts

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Copilot I have two transcripts from in	⊕ N	lew chat 🤣 … 🗉
Su	Summarize what industry partners said about students problem-solving sk	cills.
Industry partners provided valuable insights into students' problem  I. Positive Aspects:  Ace (RoboTech Solutions) preised the students' curoisty an idemonstrating strong problem-solving abilities.  I. Areas for Improvement:  Areas for Improvement:  Asylor (AutoTech Robotics) noted that while students are we normal conditions, they struggle with troubleshooting when need for more real-world problem-solving abilities.  Deretal, while students show torong foundational problem-solving on experience in troubleshooting and dealing with real-world scena  Edit in Pages Copy  Area for more real-world scena  Copy  Area for the pages  Area for more real-world scena  Area	and initiative in solving real-world problems. in an automated assembly line, well-versed in operating systems under an systems mulfunction. He emphasized the gesting that the program should simulate g skills, there is a clear need for more hands-	





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## **Key Takeaways**



Qualitative analysis can add depth and meaning to your evaluation findings.



RQA enables quick, in-depth analysis to meet project needs.



Al can be an effective assistant but will never replace you in qualitative analysis.





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# Feedback Survey



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