

Using ChatGPT in Research

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1. How Does ChatGPT Work?

ChatGPT is a **generative AI** tool capable of producing text, images, audio, and more. It is a **large language model** which means that it is trained on extensive text data to predict and generate likely responses based on your prompts. While its predictions can be highly useful, it doesn't "know" facts, but **predicts the most likely answer** based on the prompt and context.

Key features:

- **Context-Aware:** ChatGPT remembers the conversation within a session to offer more relevant responses. While helpful, this can lead to confusion if ChatGPT misunderstood something earlier or if your direction shifts mid-conversation. In these cases, start a new session to avoid incorrect or outdated context influencing new responses.
- **Probabilistic Output:** ChatGPT does not retrieve exact answers from a database; it predicts likely responses. This means it can generate incorrect or misleading information if not carefully guided—a phenomenon known as *hallucination* (e.g., ChatGPT stating a study used random sampling when it did not).
- **Reference Point Limitations:** ChatGPT has a knowledge cutoff (often around 2021-2022). For any recent policy changes, research findings, or new programming strategies, you will need to independently verify the content.

Tip: Always cross-check AI-generated content with reputable sources (e.g., peer-reviewed journals, government reports, official statistics) to verify accuracy.

2. Creating Effective Prompts: CRISPE Framework

For better outputs from ChatGPT, consider using CRISPE framework.

Step	Meaning	Description
C	Character & Role	Define the role or persona you want ChatGPT to adopt (e.g., "community research specialist").
R	Required Info & Context	Provide background details, constraints, context, relevant data.
I/S	Instruction or Statement	Explicitly state what you want: tasks, questions, or instructions (e.g., "List 3 intervention models...").
P	Personality or Presentation	Indicate style, tone, or level of complexity (e.g., "Explain for an 8th-grade reading level").
E	Experiment & Iterate	Ask for multiple versions, alternative approaches, or follow-up clarifications. Refine your prompt to improve the output.

C - Character and Role

- **Assign a Specific Role:** Tell ChatGPT exactly who you want it to act as.
 - *Example:* "Act as a research methodology expert helping me design a survey..."
 - *Example:* "Take on the role of a grant proposal reviewer evaluating my program description..."
- **Specify Knowledge and Experience Level:** Define how knowledgeable this character should be.
 - *Example:* "You are a statistician with 10 years of experience in community program evaluation..."
 - *Example:* "You are an expert grant writer who specializes in youth development programs..."

R - Required Information and Context:

- **Provide Background:** Share relevant context about your project, target audience, and goals.
 - *Example:* "I'm developing a youth mentoring program in a rural community with limited resources. Our program is designed for youth aged 9 to 12 in rural communities with limited budget (CAD \$500) and limited digital access."
- **Define Parameters:** Mention constraints like budget, timeline, or available resources.
 - *Example:* "We have only three staff, each available 8 hours/week, and no reliable public transportation in the region."
- **Include Relevant Data:** When applicable, share key data points or findings that should inform the response.
 - *Example:* "We have focus group notes indicating that lack of extracurricular activities correlates with higher risk of substance use."

I/S - Instruction or Statement: What should the knowledge and information provided above be used to do?

- **Be Specific and Direct:** Clearly state what you need ChatGPT to do.
 - *Example:* "Generate five evidence-based strategies for increasing parent engagement in after-school programs, and include references where possible."
- **Break Down Complex Requests:** For multi-part tasks, number your questions or break them into sequential prompts.
 - *Example:* "First, help me identify key metrics for measuring program success. Then, suggest how to collect this data efficiently."
- **Specify Output Format:** Request exactly how you want information presented.
 - *Example:* "Provide your response as a bulleted list with brief explanations for each point."
 - *Example:* "Create a table comparing the advantages and limitations of these three evaluation approaches."

P - Personality or Presentation

- **Set the Tone:** Indicate the desired communication style.
 - *Example:* "Use simple language and short sentences to ensure comprehension by staff with different levels of research experience."

- o *Example:* "Present this information in a professional tone suitable for a grant application."
- o **Specify Complexity Level:** Indicate the desired reading level or technical depth.
 - o *Example:* " Explain as though you are speaking to a general audience without a research background.
 - o *Example:* "Simplify this explanation to a 5th-grade reading level."

E - Experiment and Iterate

- **Request Alternatives:** Ask for multiple approaches or variations.
 - o *Example:* "Provide three different ways we could frame this research question."
 - o *Example:* "Provide two additional approaches or variations on these intervention ideas."
- **Refine Through Dialogue:** Use ChatGPT's responses as starting points for further refinement.
 - o *Example:* "This is helpful, but could you make the language more concise and action-oriented?"
 - o *Example:* "Highlight areas where this grant proposal could be improved and provide recommendations for how to do so to increasing the likelihood of receiving the grant funding"
- **Test Different Approaches:** If one prompt doesn't yield the desired results, try reformulating it.
 - o For example, if one approach seems too costly, reframe the question with a smaller budget of CAD \$200 and fewer staff

Full Example Prompt Using CRISPE

"(C) Act as a community program evaluation expert who specializes in Canadian rural youth mental health. (R) Our after-school program targets 9- to 12-year-olds in a small town with only one community centre, limited online access, and a total program budget of CAD \$500. (IS) Propose three innovative yet low-cost methods for collecting feedback from youth participants over a 3-month period. Provide step-by-step instructions on implementation, and highlight potential ethical considerations for minors. (P) Use clear, plain language suitable for staff with minimal research experience. (E) Also suggest one alternative approach that uses digital tools for communities with better internet access."

Good vs. Bad Prompt Examples:

Bad Prompt

Good Prompt with CRISPE framework

"Help with data." (C) Act as a data analysis specialist. (R) I have pre-post survey data measuring self-reported confidence scores for 30 participants in our youth program. (IS) List step-by-step how to analyze this data in Excel, including how to run appropriate statistical tests and interpret the results. (P) Explain each step as if teaching someone with basic Excel skills but limited statistical knowledge. (E) Include both a simple approach for quick insights and a more thorough method for deeper analysis.

"Simplify this text" (C) Take on the role of a plain language expert who specializes in making complex information accessible. (R) The following text is from our program manual that will be used by parents of elementary school children, many of whom have limited literacy or speak English as a second language. (IS) Revise this text for clarity, conciseness, and flow using a grade-5 reading level. Remove jargon, use active voice, and break long sentences into shorter ones. (P) Maintain a friendly, supportive tone that empowers rather than talks down to the reader. (E) Show the before and after versions side by side, and highlight key changes you made to improve readability.

3. Sample Use Cases for Community Program Leaders

ChatGPT and Co-Pilot can support various stages of program measurement and implementation including but not limited to:

- **Literature Review:** "Generate a list of different definitions used for classifying [insert construct of interest]"
 - Recommend using SciSpace custom GPT because it's knowledge base is tailored to a research database.
- **Generating Ideas:** "What questions should I include in a community needs survey for youth mental health services?" "What factors could affect individuals engagement in my program?"
- **Developing Plans:** "Help outline an intervention plan based on top three identified needs from our focus groups." "Provide a list of free, validated measures that can be used to measure X in Y population."
- **Material Templates:** ChatGPT can generate first drafts of consent forms, recruitment flyers, or short email templates—review them for accuracy and compliance with your organization's guidelines.

- **Data Analysis:** “Walk me through a basic pre- vs. post-program comparison in Excel using t-tests or descriptive stats.” “Explain how to calculate descriptive statistics for 30 participants’ data in Excel.”
 - **Interpretation & Dissemination:** “Summarize the main findings and implications of this study in 3 bullet points.” “Rewrite these research findings at a grade 6 reading level for a one-page community handout.”
 - **Communicating Research Findings:** “Translate this peer-reviewed article into language an 8th grader could understand.”
 - **Funding and Proposals:** “Provide an outline of a grant proposal section that discusses expected program outcomes.” “Draft a succinct needs statement for a federal grant application, referencing local community health statistics.”
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4. Limitations and Key Considerations

Data Privacy:

- **Do not input confidential or identifiable information** (e.g., participant names, detailed case notes). Personal identifiers, especially health data or data on minors, should not be shared with AI tools unless policies and data agreements permit it.
- **Adjust your settings** so your chats are not used to train future models. When using ChatGPT, you can go into *Settings > Data Controls* to ensure your chats are not used to train future models.

Ethical Use of AI:

- **Cultural Sensitivities:** If working with Indigenous or other marginalized communities, consult with local leaders to ensure culturally respectful use of AI-generated outputs.
- **Bias Awareness:** AI may reflect biases present in the data it was trained on. Always review and revise outputs to ensure inclusive and non-discriminatory language.

Accuracy:

- **Fact-check all information:** ChatGPT may confidently provide inaccurate or outdated responses.
- Ask for alternate versions or opposing views to evaluate balance.

Transparency:

- **Disclose AI Involvement:** When relevant, let stakeholders know if ChatGPT helped create or refine sections of a proposal, report, or publication.

- o Canadian Tri-Agencies provide policies and guidelines for [the use of AI in the development and review of research grant proposals](#)
- o *Example:* “Portions of this grant proposal were generated with the assistance of ChatGPT and subsequently reviewed and edited by the project team.” Or “Parts of the preliminary analysis plan described herein were generated through ChatGPT (an AI-based large language model) and subsequently reviewed by [Name/Team]. The inclusion of AI assistance is disclosed in compliance with emerging Tri-Agency guidelines for AI usage in research and proposal development.”

Human Oversight:

- **Supplement, Don’t Replace:** Use ChatGPT or Co-Pilot as an assistant, not your sole expert. Especially in interpretation or final decision-making, a trained professional must review the AI’s suggestions to ensure they are accurate and context-appropriate.
 - **Team Review:** If feasible, involve multiple staff in reviewing AI outputs to catch any errors or biases
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Let ChatGPT be your assistant, not your expert. When used thoughtfully, it can save time, spark ideas, and support your research and program evaluation work—but human insight remains essential to ensure accuracy, ethics, and relevance.