



What are they going to ask? Preparing for Question-and-Answer Sessions with ChatGPT

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Abstract

Roleplaying enhances experiential learning by creating opportunities for students to apply and practice newly learned concepts and skills in different scenarios. ChatGPT's capacity for simulating natural language responses and human-like conversations suggests that ChatGPT may be useful for roleplay simulation practice in preparation for the question-and-answer (Q&A) segment in oral presentations. This study adopted a one-group pre-test post-test design to investigate how undergraduate students in a business and technical communication skills course used ChatGPT as a coach to help them anticipate questions and prepare for the Q&A session in their business pitch presentations. A thematic analysis was conducted to analyze questions that students anticipated before ChatGPT use, questions that were generated by ChatGPT during the students' independent practice sessions, and actual questions that were asked during the final pitch Q&A. The questions were also mapped to the categories in Anderson and Krathwohl's Revised Bloom's Taxonomy (Krathwohl, 2002) to identify the level of cognitive processing necessary to answer each question. Findings suggest that ChatGPT can ask realistic, meaningful, higher-order thinking and probing questions that can help students prepare for their Q&A, as well as give students ideas about the kind of questions they as audience members could ask their classmates. However, the lack of nonverbal and paralinguistic cues in ChatGPT-generated questions potentially limits its application for comprehensive Q&A skill practice, particularly in responding to prosodic elements in audience questions.

Keywords: business pitch, ChatGPT, oral presentations, pitch presentations, Q&A practice, roleplay simulation

1. Introduction

Oral presentation skills are an important workplace competency taught at university. Post-presentation question-and-answer (Q&A) sessions are an equally important component of oral presentations. These impromptu sessions provide a platform for student presenters to demonstrate not only the depth of their knowledge but also their ability to think on their feet and engage effectively with the audience (Cohen & Dreyer-Lude, 2019). The Q&A assesses not only the student presenters' grasp of the subject matter (Streeter & Miller, 2011) but also their interpersonal and communication skills, essential for successful interactions in both academic and professional spheres. A presenter's skillful handling of the Q&A can enhance their reputation as a knowledgeable and reliable professional in their field. Conversely, difficulty in this area might inadvertently cast doubts on their expertise and preparedness, impacting their professional image (Guest, 2018).

In the teaching of oral presentation skills, much time and attention is often dedicated to helping students prepare the speech (Leopold, 2023) focusing on the structure and delivery of the speech. As a result, Q&A skills are often under-taught (Leopold, 2023), under-practiced (Smith et al., 2022), and under-investigated (Xu, 2022). Therefore, students commonly face greater challenges with the extemporaneous speaking required in Q&A than with delivering the presentation itself (Leopold, 2023).

From experience, in most business communication skills courses, the teaching of Q&A skills tends to focus on the interpersonal aspects of managing questions from the audience, such as how to paraphrase questions to check one's understanding of the question, how to respond when they do not have the answer, how to reframe or refocus questions, and so on. When it comes to the content of the Q&A, students are often encouraged to independently anticipate possible questions on their own, and prepare and practice answering these questions on their own. However, students often prioritize rehearsing their presentations over preparing for the Q&A. Moreover, attempts to simulate authentic Q&A scenarios in the classroom, such as having students present a business pitch and engage in Q&A with a mock audience of their classmates and instructor, can be awkward and unrealistic (Akimoto et al., 2022). One reason is students who are new to and unfamiliar with the subject matter often do not know what questions to anticipate and prepare for, and what questions to ask their classmates during the mock Q&A session (Xu, 2022).

In light of these challenges, ChatGPT's ability to simulate natural language responses and human-like conversations (Kostka & Toncelli, 2023) offers a unique opportunity for students to independently practice and refine their Q&A skills through independent role-play simulations. However, this area is currently under-researched. Therefore, this study investigated how undergraduate students in a business and technical communication skills course could simulate roleplays with ChatGPT to help them prepare for the Q&A session in their business pitch presentations.

2. Literature Review

Question-and-answer (Q&A) skills

According to the Constructivist learning theory, students learn by engaging in experiences that allow them to build on their prior knowledge (Doolittle, 2014). The post-presentation Q&A is an example of such an experience. In post-presentation Q&A sessions, student presenters tap on their prior knowledge to respond to audience questions. Such responses commonly require students to formulate their thoughts and articulate responses on the spot, all the while maintaining a professional demeanor without depending on pre-written scripts (Evans, 2013). Q&A sessions benefit both the students who ask questions as well as the student presenters who answer the questions (Streeter & Miller, 2011). Well-thought-out questions have the potential to elicit answers that lead to greater insights and knowledge about the topic (Arwae & Soontornwipast, 2022).

Questions may be classified based on the amount of cognitive effort needed to answer them (Corley & Rauscher, 2013). A widely accepted framework for this purpose is Bloom's Taxonomy, published in 1956, which classifies questions into 6 levels: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. Questions that elicit responses in the Knowledge, Comprehension, and Application levels are commonly considered lower-order thinking questions. More challenging higher-order thinking questions are those that elicit cognitive processes in the Analysis, Synthesis, and Evaluation levels (Miri et al., 2007). In 2001, Anderson and Krathwohl revised Bloom's Taxonomy, updating the terminology and changing the order of the last two levels (Krathwohl, 2002). The revised taxonomy uses verbs instead of nouns for each category, and the levels are now: Remember, Understand, Apply, Analyze, Evaluate, and Create (formerly Synthesis).

Higher-order thinking questions promote deeper and more critical engagement with the topic (Nappi, 2017). Such questions allow student presenters to demonstrate their ability to transfer their prior knowledge to new demands, to think on their feet, and to provide well-thought-out answers to unexpected and tough questions (Evans, 2013).

The Q&A can be challenging for students who answer questions as well as those who ask them. Not all students automatically know how to ask good questions, although they can get better at it with some modeling, coaching, and repeated practice (Corley & Rauscher, 2013). Student presenters often struggle to maintain credibility when they do not know how to answer a question and when they face hostility from the audience (Evans, 2013). To address this challenge, Leopold (2023, p. 92) recommends using roleplays to teach student presenters how to respond to questions "spontaneously and authoritatively".

Roleplay simulation

Roleplay is an active learning approach where participants take on the role of specific characters and act out those roles in a given scenario (Rao & Stupans, 2012). Roleplaying is used to teach a range of skills in many fields; such as conflict resolution in accounting

(Craig & Amernic, 1994); therapeutic communication skills in mental health (Rønning & Bjørkly, 2019); empathetic communication (Larti et al., 2018) and self-efficacy and critical thinking skills (Kim, 2018) in nursing; communication in palliative care (Novaes et al., 2022); communication skills in pharmacy (Alshahrani, 2023); foreign language learning (Krebt, 2017), English language learning (Amirkhanova & Bobyrevva, 2020), and business communication skills (Riapina, 2023).

Roleplaying enhances experiential learning by creating opportunities for students to apply and practice newly learned concepts and skills in different scenarios (Mollick & Mollick, 2023; Saito et al., 2023). Roleplaying can be employed to provide deliberate practice in specific skills (Ericsson et al., 1993) to push students out of their comfort zones and force them to think on their feet. Repeated roleplaying is an effective way to facilitate application of skills from theory to practice, and transfer of skills from one context to another (Mollick & Mollick, 2023).

Roleplaying with ChatGPT

Generative Artificial Intelligence (AI) chatbots like ChatGPT can generate human-like responses in response to tailored prompts. ChatGPT can also recall earlier conversations (OpenAI, 2024). It therefore offers a realistic (Webb, 2023), personalized (Baskara, 2023), and convenient (Maurya, 2023b) tool for students to independently engage in repeated roleplays without the fear of saying something embarrassing in front of peers and others. These qualities make ChatGPT a useful conversation practice partner tool (Kohnke et al., 2023) and roleplay simulator (Mollick & Mollick, 2023).

ChatGPT has been used to practice language learning (Kohnke et al., 2023), patient-doctor communication (Topsakal et al., 2023; Webb, 2023), and counseling skills (Maurya, 2023a). In a Harvard Business Publishing webinar, Ajjan (2023) spoke about creating ChatGPT roleplays for students to practice creative decision-making in real-time, where her students roleplayed as family medical practice owners and ChatGPT took on the role of an insurance billing service representative. The internet is rife with tips on how to use ChatGPT to simulate and practice for job interviews (Chantiri, 2023; de Waal, 2023; Vodiano, 2023), but a literature search on the internet has currently revealed scarce scholarly publications in this area, particularly in the use of ChatGPT to prepare for and practice Q&A skills in pitch presentations.

The quality of ChatGPT roleplays depends on the effectiveness of the prompt, the instructions inputted into the chatbot (Nikolic et al., 2023). Most guidelines on ChatGPT prompting advise including these elements: the context, the task or expected output, the user's role, ChatGPT's role, and specific step-by-step instructions (Giray, 2023; Liu, 2023). Many guidelines also advise refining prompts through trial and error to obtain the required output. Mollick and Mollick's (2023) proposal for the use of AI as a simulator provides a sample prompt for roleplaying with ChatGPT. They point out that the prompt needs to include these elements: the AI's role and goal (who is the AI, how it should behave, what it will do for the user), step-by-step instructions, constraints (instructions to prevent the AI from acting in unexpected ways), and pedagogy (the learning goal of the exercise).

Mollick (2023) shared the prompts he used in his explorations into simulating a business negotiation with ChatGPT. These prompts served as a model for Webb's (2023) initial prompt in his study on the use of ChatGPT to train emergency department physicians in breaking bad news to patients. These prompts, in turn, inspired the initial prompt used in this present study.

Study objectives and significance

This study investigated how undergraduate students in a business and technical communication skills course used ChatGPT to anticipate questions and prepare for the Q&A session in their business pitch presentations. The specific research questions are: (1) To what extent can ChatGPT help students anticipate and prepare for questions in their pitch presentations? (2) Can ChatGPT help students ask more challenging questions of their peers? (3) What are students' thoughts about practicing for the Q&A with ChatGPT?

The findings of this study provide insight into challenges and opportunities for implementing generative AI tools to support independent learning, personalize learning experiences, and improve learning engagement in English language communication courses. This study ultimately contributes to the rapidly growing body of knowledge on ways to integrate AI into teaching and learning.

3. Methodology

3.1 The context

This study was conducted in a 13-week Business and Technical Communication Skills course that I was teaching to undergraduate years 1 and 2 computing students at a university in South East Asia. In this course, students work in project teams of three to four persons and roleplay as information technology (IT) consultants for an IT solutions company. One of their assignments is to identify a small and medium-sized company that has a business problem that could be solved with an IT solution, and conceptualize a suitable IT solution for the business problem.

Table 1 shows the sequence of teaching and learning activities relevant to this study. In Week 8, each team submits a written business proposal document for grading. In the same week, students attend a lesson on conducting proposal pitch presentations. They are asked to include the following content in their final pitch presentations: problem definition, alignment between proposed solution and company goals, how the proposed technology works and compatibility with the company's current system and processes, cost breakdown, return on investment, risk management, technical support and maintenance, and call to action. In Week 11, each team then conducts a 10-minute business proposal pitch presentation. During the pitch presentation, each team gets assigned a group of 3-5 classmates who roleplay as the business clients, and engage the presenters in a 10-minute Q&A session at the end of the pitch presentation.

In the semester when this study was conducted, in Week 9, before the pitch presentation, each student was asked to write down 10 questions that they anticipated getting at the pitch presentation Q&A session. They were then asked to select 2 questions to share with their teammates and discuss how they would answer these questions. The class then discussed interpersonal communication skills techniques for managing the Q&A session and handling tough questions. Then, the class was shown a sample prompt (Figure 1) that they could use to get ChatGPT to simulate a Q&A roleplay so that the students could prepare and practice answering questions for their pitch. The students were asked to try out the prompt by replacing “Zalora” and its details with their own “client’s” name and details. This was followed by a discussion where students shared and explored ideas for varying and refining the prompt. The students were then asked to independently practice with ChatGPT using their own prompts to prepare for the pitch presentation.

Example prompt for ChatGPT

I am an IT solutions consultant. I am going to deliver an IT solution proposal pitch to Zalora, an online retail clothing store, to help it improve its operations.

You are a managing director at Zalora. I want you to help me practise answering questions in a Q&A after my proposal pitch. You will listen to my pitch and ask me questions to assess my proposal.

You will respond to me and ask one question at a time and wait for my response. You may ask further questions to clarify my answer.

Start by asking me to deliver my pitch.

Figure 1: Initial prompt shown to students

In the final presentation in Week 11, students take turns to roleplay as IT consultants cum presenters, audience members, and clients. The students are graded on their presentation skills delivery, how well they manage the Q&A session, and how they address the audience’s questions in terms of quality of answers and interpersonal communication skills displayed when interacting with audience members (e.g. acknowledging and clarifying questions, responding to tough questions, etc.) and their fellow team members (e.g. supporting and building on team members’ answers, inviting team members to contribute, etc.). Students who ask questions are awarded class participation marks based on quality of questions asked. The session is video-recorded, and the videos are made available to the students on the university’s learning management platform for self-reflection.

At the end of Week 13, students submit a reflection logbook of their learning journey through the 13-week course. In the semester when this study was conducted, students were asked to include reflections on their use of ChatGPT for Q&A preparation.

Table 1
Sequence of activities

| Week | Activity |
|---------|--|
| Week 8 | Each team submits a written business proposal document. Students attend a lesson on how to conduct proposal pitch presentations. |
| Week 9 | Students write down questions they anticipate getting during the Q&A. Students are introduced to using ChatGPT for Q&A preparation and practice. |
| Week 10 | Students independently practice with ChatGPT to prepare for the final pitch Q&A. |
| Week 11 | Each team conducts a 10-minute pitch presentation and engages in a 10-minute Q&A with another team of students roleplaying as the clients. |
| Week 13 | Students submit a reflection of their learning journey, including their experience and views on the use of ChatGPT for Q&A preparation and practice. |

3.2 Design

This study adopted a one-group pre-test post-test design (Figure 2) to investigate the role of ChatGPT in helping the students to anticipate questions (as presenters) and ask questions (while roleplaying as clients and audience members) in the final pitch presentation. Despite the validity threats inherent to this research design (Knapp, 2016), it offers a systematic way to investigate new teaching interventions for the purpose of improving students' learning experience as well as the instructor's own teaching practice, and contributing to theoretical knowledge, in line with the goals of pedagogical action research paradigm (Norton, 2019).

Qualitative analysis was conducted to compare the type and range of questions anticipated by the students (pre-intervention) before the ChatGPT lesson (the intervention), with the questions generated by ChatGPT during the students' independent practice sessions, and the actual questions asked during the final pitch presentation (post-intervention). The students' written reflections were examined to derive further insights into their experience of preparing for the Q&A with the aid of ChatGPT.

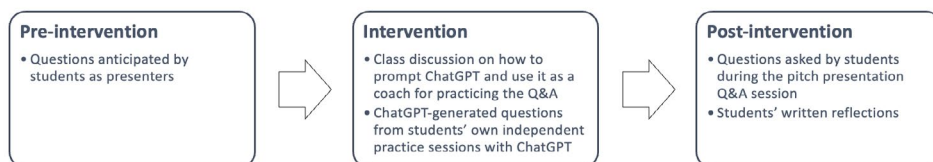


Figure 2: Research design

3.3 Participants and data collection

Prior to the commencement of the study, ethics approval was obtained from the university's Institutional Review Board. All data collection and analysis procedures were conducted in accordance with the university's research ethics requirements.

Because I was the researcher as well as the course instructor, to prevent a conflict of interest, a colleague's help was enlisted to invite the twenty-seven students in my two teaching sections to participate in the study. Twenty-one students signed consent forms to allow me to analyze their lists of anticipated questions and answers, to have access to their ChatGPT chat histories that are relevant to the Q&A practice, and to analyze their written reflections for the purpose of this study. Participants' and non-participants' identities were not made known to me until after all course grades had been submitted and finalized by the course coordinator after the semester had concluded.

Of the 21 students who consented to participate in the study, only four students gave me access to their ChatGPT chat history after the course had concluded. The chat history would provide insight into how well ChatGPT is able to ask follow-up questions based on students' responses as they simulated the Q&A roleplay and therefore contribute to answering Research Question 1. Unfortunately, none of these four students had used ChatGPT to simulate a roleplay. Instead, their chat histories showed that they had merely used ChatGPT to generate a list of possible Q&A questions. Table 2 details these four students' engagement with ChatGPT and the specific prompt (task instructions) they provided ChatGPT.

Table 2
Students' engagement with ChatGPT

| Student (Pseudonym) | Engagement with ChatGPT | Specific prompt (task instructions) for ChatGPT |
|----------------------------|---|--|
| Tom | Inputted a summary of their team's pitch and prompted ChatGPT to generate a list of possible questions | <i>generate questions for q n a</i> |
| Zheng | Inputted a summary of their team's pitch and prompted ChatGPT to generate a list of possible questions | <i>Now anticipate 10 questions for qnA</i> |
| Lee | Inputted the script for her own introductory section to the pitch and prompted ChatGPT to generate a list of possible questions | <i>This is my script. Please ask me questions based on my script.</i> |
| Jan | Inputted his team's entire script and prompted ChatGPT to generate a list of possible questions | <i>based on the above script, what are some possible QnA questions</i> |

Of the 21 students who consented to participate in the study, only eight students wrote about their explorations with using ChatGPT to prepare for the Q&A, although only one of these eight (Zheng) was among those who shared their ChatGPT chat history with me.

Despite the small sample size, this study has revealed some promising findings attesting to the value of simulating roleplay with ChatGPT for the purpose of anticipating questions and preparing for the Q&A in business pitch presentations.

3.4 Data analysis

For the comparisons and findings to be meaningful, data analysis was confined to the anticipated questions and the ChatGPT-generated questions from the four students who shared their ChatGPT chat histories with me. Analysis of the final pitch questions was confined to the questions posed by the four students to other project teams, and the questions received by the four project teams that the four students belonged to.

To answer Research Question 1, the anticipated questions, the ChatGPT-generated questions, and the final pitch questions were analyzed following Braun and Clarke's (2006) six-step thematic analysis framework:

1. Be familiar with the data: A quick read-through was conducted. Initial observations and responses were noted.
2. Generate codes: An initial coding scheme was developed and refined through two rounds.
3. Generating themes: Codes were clustered into preliminary themes.
4. Reviewing themes: Similar themes were grouped together, resulting in main themes and sub-theme categories.
5. Defining and naming themes: Preliminary theme category names were refined to more clearly reflect the sub-themes and differentiate each theme.
6. Write up the report: A table was created to present the findings.

According to Braun and Clarke (2006), there are no “hard-and-fast” (p. 82) rules about how items are coded and assigned to themes; coding and theme development are dependent on the researcher's judgment of the relevance of the items to the research question. In this study, coding and theme development were conducted by only me using a mix of deductive (deriving codes and themes from topic headings suggested in the course materials on writing business proposals) and inductive methods (deriving codes and themes based on my understanding and interpretation of the questions, taking into consideration the task assigned to the students and the type and amount of information available for them to work with) (Braun et al., 2016).

To improve coding reliability, steps 3 to 5 (generating themes, reviewing themes, and defining and naming themes) were repeated after two weeks (Schreier, 2012) with minor changes.

To provide more depth into answering Research Questions 1 and to answer Research Question 2, I sought to determine the level of cognitive processing necessary to answer each question. Therefore, questions were mapped to the categories in Anderson and Krathwohl's revised version of the original Bloom's Taxonomy (Krathwohl, 2002). Each category had to be more specifically operationalized to fit the circumstances of the study. For example, a question like "How will you monitor and respond to customer feedback to continuously improve the system?" would be categorized as a Remembering question if the students are expected to have already discussed it, and so they would merely need to retrieve that info from their memory to answer the question. However, in the assignment in the present study, customer feedback monitoring is not a topic that the students were asked to or expected to have investigated. Therefore, questions like this would first require the students to quickly evaluate whether to answer in the affirmative; and if yes, they would need to make up something new on the spot. Therefore, this question would be categorized as a Creating question.

Table 3 shows the modified operationalization and sample questions for each category of thinking skills in Bloom's Revised Taxonomy.

Table 3
Sample questions mapped to Anderson and Krathwohl's Revised Bloom's Taxonomy

| Cognitive process categories | Anderson and Krathwohl's definition (Krathwohl, 2002) | Modified operationalization | Sample questions |
|-------------------------------------|--|--|---|
| Remember | Retrieving relevant knowledge from long-term memory | The students have this information in their business proposal report (but may not have included it in their presentation). They just need to retrieve it either from their memory or from their notes. | <ul style="list-style-type: none">• <i>Can you provide a detailed cost breakdown, including the initial investment and ongoing operational expenses?</i>• <i>What is the timeline for the implementation of ShockGuardian?</i> |
| Understand | Determining the meaning of instructional messages, including oral, written, and graphic communication. | The students are expected to have discussed this information. They just need to explain or describe it in their own words. | <ul style="list-style-type: none">• <i>Can you provide more information on how the pricing models were determined?</i>• <i>Can you explain how you arrived at the estimated profit and return on investment?</i> |

Table 3 continued...

| Cognitive process categories | Anderson and Krathwohl's definition (Krathwohl, 2002) | Modified operationalization | Sample questions |
|------------------------------|--|---|--|
| Apply | Carrying out or using a procedure in a given situation. | The students are expected to have the relevant information and knowledge, and be able to use these to decide or derive an answer. | <ul style="list-style-type: none"> • <i>Given that operating software updates from time to time, how does ShockGuardian evolve itself, and who is responsible for these updates?</i> • <i>How does Design Mart offer personalised recommendations for different customers based on their consumption patterns?</i> |
| Analyze | Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose. | The students are expected to have the relevant information, and would need to classify, compare, differentiate, hypothesise, relate parts to one another. | <ul style="list-style-type: none"> • <i>How seamlessly does "Wash-n-Go" integrate with our current laundromat systems and processes?</i> • <i>How does it compare to the potential savings or revenue increase Giant might expect from increased customer satisfaction?</i> |
| Evaluate | Making judgments based on criteria and standards. | The students are expected to have to justify claims, and make judgments and recommendations. | <ul style="list-style-type: none"> • <i>How will the implementation of the Wash-N-Go app affect the overall customer experience at Mister Wash?</i> • <i>How will Kellton Tech ensure that ShockGuardian aligns with Aftershock's brand identity and customer service philosophy?</i> |
| Create | Putting elements together to form a novel, coherent whole or make an original product. | The students are not expected to have discussed this or know this information given the duration and resources of this course. They would need to invent something on the spot. | <ul style="list-style-type: none"> • <i>How will we monitor and respond to customer feedback to continuously improve the system?</i> • <i>How does ShockGuardian address potential concerns about customer resistance to self-diagnosis and remote issue resolution?</i> • <i>How to ensure that people will come and collect their laundry when it is ready?</i> |

To answer Research Question 3, the 8 students' written reflections were examined to identify common themes.

4. Findings and Discussion

A total of 37 anticipated questions, 40 ChatGPT-generated questions, and 38 final pitch questions were coded into 7 main themes and 24 sub-themes (Table 4).

Table 4

Types of questions anticipated by the students, generated by ChatGPT, and asked during the final pitch presentations

| Main themes | Sub-themes | Anticipated | ChatGPT | Final Pitch |
|---------------------------|------------------------------------|-------------|---------|-------------|
| Problem definition* | Evidence | 4 | 0 | 3 |
| | Urgency | 1 | 0 | 0 |
| Solution | Features and capabilities | 1 | 1 | 0 |
| | How the tech works* | 2 | 3 | 3 |
| | Alignment with client's goal* | 4 | 6 | 3 |
| | Usability and user adoption | 1 | 4 | 1 |
| | Scalability | 1 | 1 | 0 |
| | Evidence of impact | 0 | 2 | 2 |
| | Value proposition | 3 | 0 | 1 |
| Operations | Timeline | 1 | 1 | 2 |
| | Operational continuity | 0 | 2 | 1 |
| | Integration with current system* | 2 | 2 | 1 |
| | Technical support and maintenance* | 2 | 3 | 2 |
| | Risks and risk management* | 6 | 3 | 4 |
| Management | Testimonial | 0 | 2 | 1 |
| Cost/Pricing | Breakdown* | 1 | 5 | 2 |
| | Justification | 6 | 0 | 5 |
| | Return on investment* | 1 | 2 | 2 |
| Miscellaneous | Customer feedback mechanism | 0 | 3 | 0 |
| | Exit strategy | 1 | 0 | 0 |
| Misdirected questions | Business model | 0 | 0 | 4 |
| | User behaviour | 0 | 0 | 1 |
| Total number of questions | | 37 | 40 | 38 |

The number of main themes covered was similar across anticipated (6), ChatGPT-generated (5), and final pitch questions (6). The number of sub-themes covered was also similar across anticipated (16), ChatGPT-generated (15), and final pitch questions (17) (Table 5). These numbers suggest that the range of ChatGPT-generated questions resembles those posed by the students (anticipated and final pitch).

Table 5
Spread of questions across the main themes and sub-themes

| | Anticipated | ChatGPT | Final Pitch |
|-------------------------------|-------------|---------|-------------|
| Number of main themes covered | 6 | 5 | 6 |
| Number of sub-themes covered | 16 | 15 | 17 |

4.1 To what extent can ChatGPT help students anticipate and prepare for questions in their pitch presentations?

To answer this question, I first examined the types of questions asked by ChatGPT. In Table 4, the items marked by an asterisk (*) correspond to the content that the students were required to include in their written business proposal and the final pitch presentation. The other questions appear to be questions generated in response to the information in the students' prompts. Therefore, it appears that ChatGPT-generated questions could be classified into two categories:

- (1) Basic questions requesting information that is expected to be covered in any business proposal pitch
- (2) Probing questions in response to what has been inputted into the prompt

4.1.1 Basic questions requesting information that is expected to be covered in a business proposal pitch

These include, for example, questions related to problem definition, alignment between proposed solution and company goals, how the proposed technology works and compatibility with the company's current system and processes, cost breakdown, return on investment, risk management, and technical support and maintenance. These items correlated with the sections required in the students' business proposal document.

From the analysis of the students' prompts, it seemed that if this basic information had not been provided in the student's initial prompt, ChatGPT would ask for this information.

For example, ChatGPT asked 5 questions about Cost/pricing breakdown. Of these five questions, two requested for a cost breakdown. These two questions were in response to the prompts inputted by Zheng, who submitted a summary of his team's project and Lee, who

submitted the script for her Introduction section of the pitch, both of which did not include Cost/pricing breakdown information. These students had requested ChatGPT to generate a list of expected questions. The list of ChatGPT-generated questions included questions asking for the Cost/pricing breakdown:

- *Can you provide a detailed cost breakdown, including the initial investment and ongoing operational expenses?*
- *What is the cost structure of implementing Design Mart?*

The other three questions were in response to a prompt from Jan, who had inputted his team's entire script (including the section on Cost/pricing) and asked ChatGPT to generate a list of possible questions for Q&A. Figure 3 shows the section of the script that contains Cost/pricing information:

(Next Slide)

As we want to make that happen for you, we have come up with two price models that were tailored to your needs. To build a custom software as complex as ShockGuardian, it would cost you about \$300,000 to \$400,000. This is not a small amount and is a big investment for a company to commit to. As such, we offer you two price models so as to help you with your budgeting and to allow you to make informed decisions. The fixed priced model will be more suitable for you if prefer better budget predictability. Of course, there will be a limit to the number of scope changes upon commencement of the project. The total price for this option is \$330,000. This is according to the estimated effort based on the current scope of the project. If you wish to remove or add some features, we can always quote a new price. As for the time and material model, it provides you with better flexibility to adjust the features of the software. We can add or remove features as we go and since this would impact the timeline, we will have an hourly rate for our service. The total investment cost would be dependent on the duration of the project and as mentioned by Cedric, the project is estimated to be completed in about 6 months. Therefore, investment cost is estimated to be within this range here (point to the slide). We hope the two models will help with your decision-making process.

Figure 3: A section of Jan's prompt about the cost/pricing

In response, three of the questions generated by ChatGPT requested additional information about the Cost/pricing information stated in Jan's prompt:

- *What kind of customization options does Aftershock have regarding the features of ShockGuardian under the time and material pricing model?*
- *Are there any ongoing costs associated with ShockGuardian after the initial implementation?*
- *Can you provide more information on how the pricing models were determined?*

This finding suggests that ChatGPT is able to respond to what has been inputted into a prompt and ask questions to probe for further information. This finding will be further discussed in the next section.

In another observation, ChatGPT did not have questions about Problem definition (Table 6) and it was observed that all the four students' prompts had included information about problem definition.

Table 6
Distribution of Problem definition questions (Extracted from Table 4)

| Main category | Sub-category | Anticipated | ChatGPT | Final Pitch |
|--------------------|--------------|-------------|---------|-------------|
| Problem definition | Evidence | 4 | 0 | 3 |
| | Urgency | 1 | 0 | 0 |

Table 7
Questions anticipated about problem definition

| Main category | Sub-category | Anticipated questions |
|--------------------|--------------|---|
| Problem definition | Evidence | <ul style="list-style-type: none"> • <i>Why should we transition into an IT platform if we are doing well currently?</i> • <i>Why do we need to establish our own dedicated online platform when we already have Food Panda?</i> • <i>I don't think e-commerce is our main focus as of now, that's why we don't have a site. Why is e-commerce so important?</i> |
| | Urgency | <ul style="list-style-type: none"> • <i>Do you view such a change as 'disruptive'?</i> • <i>Why do you feel like this is an urgent issue to address?</i> |

Although ChatGPT did not have any questions about problem definition, the students had anticipated questions for this category and there were 3 questions in the final pitch (Table 6). A likely explanation is that at the time the students were asked to anticipate

possible questions for the Q&A (in Week 9), they were at the stage of transforming the written proposal document into a verbal version suitable for engaging their “clients” at the final pitch. This process also required that the students consider my feedback on their written proposal document. As many students had trouble framing and articulating the problem clearly and convincingly particularly in terms of providing evidence to justify the problem and explaining its urgency, that is probably why Problem definition questions were at the top of their minds at that time. Table 7 shows the anticipated Problem definition questions.

By the time the students practiced with ChatGPT and instructed it to generate a list of questions (in Week 10), their script would have been almost completed and the “answers” to these Problem definition questions would have already been incorporated into their script, and hence their ChatGPT prompt. For example, the answer to the first anticipated Problem definition question “Why should we transition into an IT platform if we are doing well currently?” in Table 7 above is discernible in Lee’s subsequent ChatGPT prompt (Figure 4). This is likely why ChatGPT did not have questions about Problem definition.

Well, our research reveals that your customers, are mainly busy working professionals. These individuals lead fast-paced lives, with little time to spare.

In addition, through our extensive research, we have gathered some feedback from your customers and discovered that some customers have expressed their frustration online due to long queues and extended wait times at some Mister Wash Laundromats. As seen in this screenshot, this issue could lead to customers seeking alternative options, such as your competing laundromats.

In fact, in the competitive retail industry, businesses have reported losing 75% of their customers due to long wait times.

In order to prevent this from happening to Mister wash, we propose our very first improvement: the implementation of real-time updates to help you better retain your customers.

Figure 4: *Lee’s ChatGPT prompt clearly explaining the need for an IT solution*

In the final pitch presentation, the three questions asked by students about problem definition requested more information about the presenters’ claims, demonstrating that the students had listened to their peers and responded with questions to further probe the information that their peers had presented:

- *Can you tell us more about the primary research you have conducted?*
- *You mentioned that it costs more to acquire new customers than to retain current ones. What evidence do you have for this?*
- *Do you have any evidence on the extent of customer support that does not require in-person tech assistance?*

4.1.2 Probing questions in response to what has been inputted into the prompt

In the previous section, ChatGPT asking three questions requesting additional information about the Cost/pricing information stated in Jan's prompt suggests that ChatGPT can respond to information provided to it by asking further probing questions. It is observed that such questions tend to seek elaboration or clarification for vague statements, and justification and evidence for claims made.

The following is another example of this capability. One of the prompts included the following sentence that claimed that the proposed solution "improves efficiency by reducing unnecessary repairs" (Figure 5).

The result? ShockGuardian not only improves efficiency by reducing unnecessary repairs but also provides customers with a faster and more seamless after-sale service experience. It's a win-win for you and your valued customers.

Figure 5: Jan's ChatGPT prompt claiming reduction in "unnecessary repairs"

When Jan asked ChatGPT to generate a list of questions in response to his script, among the list of questions was a question in response to this claim: "How does ShockGuardian contribute to reducing unnecessary repairs, and what metrics or data support this claim?"

In another example, Lee's prompt included a statement citing the client's 19 outlets across Singapore (Figure 6).

We understand that Mister wash operates 19 laundromats all across Singapore and offers a 24-hour coin operated laundry service. Your company's mission is to provide a comfortable place, with fast machines, for the cleanest wash. And Kellton Tech is here to make that mission a reality.

Figure 6: Lee's ChatGPT prompt stating the client's 19 outlets across Singapore

In response to this prompt, ChatGPT's list of questions included these probing questions: *Considering our 19 laundromats, how scalable is the solution? Can it handle increased demand and potential future expansion?*

4.1.3 Almost half of the ChatGPT-generated questions are higher-order thinking questions

Figure 7 shows that of the 40 ChatGPT-generated questions, 18 (45%) were higher-order (applying, analyzing, and evaluating) and 22 (55%) were lower-order thinking questions (remembering, understanding, applying).

Notably, the number of evaluating questions was significantly higher among the human-generated questions (the anticipated and final pitch questions). However, this does not necessarily mean that ChatGPT has a low propensity for asking higher-order thinking questions. Instead, it most likely reflects that ChatGPT did not have the chance to respond by probing further with higher-order thinking questions because the students' prompts had merely asked it to generate a list of questions and the students did not engage with it further. However, as shown earlier in Section 4.1.2, ChatGPT can indeed respond with higher-order thinking questions, if given the chance.

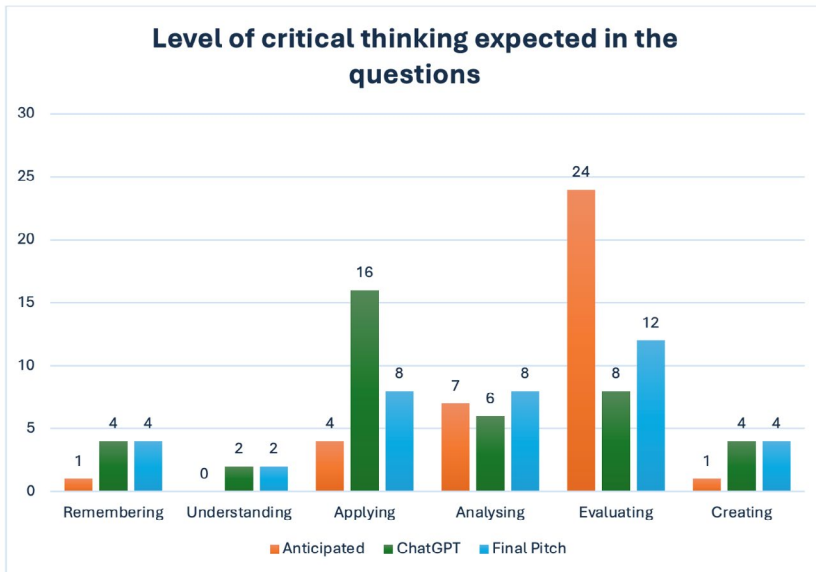


Figure 7: Level of critical thinking skills expected in the questions

Table 8 shows the distribution of questions across cognitive levels and sub-themes. Most of the anticipated questions seem to congregate among the sub-themes of Problem definition - Evidence (four Evaluating questions), Alignment with client's goal (four Evaluating question), and Risks and risk management (four Analyzing and two Evaluating questions) and Cost/pricing - Justification (six questions). A majority of these being categorized as Evaluating questions (16) suggests that the students anticipated most scrutiny about justifying the existence and relevance of the problem and the alignment of the solution to the client's expectations.

Among the ChatGPT-generated questions, the sub-themes with the most number of questions are Alignment with client's goal (five Evaluating and one Analyzing question), Usability and adoption (two Applying and two Creating questions), Cost/pricing - Breakdown (two Remembering, two Understanding, and one Applying question). These questions appear to be mostly Applying (three questions) and Evaluating (five questions) in nature. Notably,

five of the eight Evaluating questions generated by ChatGPT are from the sub-theme of Alignment with client’s goal. This suggests that as with the students, ChatGPT may also be relatively more concerned about the relevance of the solution to the client’s goal.

Among the Final Pitch questions, the sub-themes with the most number of questions are Risk and Risk management (two Analyzing, one Evaluating and one Creating question), Cost/Pricing - Justification (one Analyzing and four Creating questions) and Misdirected questions - Business model (one question each from Remembering, Applying, Analyzing and Evaluating). Notably, four of the 21 Evaluating questions are from the sub-theme of Cost/pricing - Justification. This distribution of sub-themes with the most number of questions differs from the anticipated and ChatGPT-generated distributions, reflecting the unpredictability of actual pitch presentation questions, compared to those anticipated by the students or generated by ChatGPT.

| Themes and sub-themes | Anticipated | | | | | ChatGPT | | | | | Final Pitch | | | | | | | |
|--|-------------|---------------|----------|-----------|------------|----------|-------------|---------------|----------|-----------|-------------|----------|-------------|---------------|----------|-----------|------------|----------|
| | Remembering | Understanding | Applying | Analyzing | Evaluating | Creating | Remembering | Understanding | Applying | Analyzing | Evaluating | Creating | Remembering | Understanding | Applying | Analyzing | Evaluating | Creating |
| Problem definition - Evidence | | | | | 4 | | | | | | | | 1 | | | | | |
| Problem definition - Urgency | | | | | 1 | | | | | | | | | | | | | |
| Solution - Features and capabilities | | | | | 1 | | | | 1 | | | | | | | | | |
| Solution - How the tech works | | | | | 2 | | | | 3 | | | | | | | | | |
| Solution - Alignment with client's goal | | | | | 4 | | | | | 1 | 5 | | | | 2 | 1 | | |
| Solution - Usability and user adoption | | | | 1 | | | | | 2 | | | 2 | | | | | | 3 |
| Solution - Scalability | | | | | | 1 | | | | | | 1 | | | | | | |
| Solution - Evidence of impact | | | | | | | | | | 2 | | | | | | | | 3 |
| Solution - Value proposition | | | | | 3 | | | | | | | | | | | | | |
| Operations - Timeline | | | | 1 | | | | | | | | 1 | | 1 | | | | 1 |
| Operations - Operational continuity | | | | | | | | | 1 | | 1 | | | | 1 | | | |
| Operations - Integration with current system | | | 1 | 1 | | | | | | 1 | 1 | | | | | 1 | | |
| Operations - Technical support and maintenance | | | 1 | | 1 | | | | 2 | | 1 | | | | 2 | | | |
| Operations - Risks and risk management | | | | 4 | 2 | | | | 2 | 1 | | | | | | 2 | 1 | 1 |
| Management - Testimonial | | | | | | | | | 2 | | | | | | 1 | | | |
| Cost/Pricing - Breakdown | 1 | | | | | | 2 | 2 | 1 | | | | 1 | | 1 | | | |
| Cost/Pricing - Justification | | | | | 6 | | | | | 1 | | | | | | 1 | 4 | |
| Cost/Pricing - Return on investment | | | 1 | | | | 2 | | | 1 | | | 1 | 1 | | | | |
| Miscellaneous - Customer feedback mechanism | | | | | | | | | 2 | | | | | | | | | |
| Miscellaneous - Exit strategy | | | 1 | | | | | | | | | | | | | | | |
| Misdirected questions - Business model | | | | | | | | | | | | | 1 | | 1 | 1 | 1 | |
| Misdirected questions - User behaviour | | | | | | | | | | | | | | | | | | 1 |
| Total | 1 | 0 | 4 | 7 | 24 | 1 | 4 | 2 | 16 | 6 | 8 | 4 | 4 | 2 | 8 | 8 | 12 | 4 |

Table 8: Distribution of anticipated, ChatGPT-generated and final pitch questions across cognitive levels and sub-themes

4.1.4 While ChatGPT-generated questions often sound neutral and objective, some human-generated questions could sound curt and even confrontational.

Here are some examples of curt-sounding questions asked by students roleplaying as clients during the final pitch:

- *Laundromat machines have a timer. Customers can make cashless payment by scanning a QR code on the machine. So why would we need to invest so much in a specific app when we can solve the same problems in a cheaper manner?*
- *You mentioned an estimated \$120K profit with the implementation of your solution. What's the proof?*
- *You mentioned that the market price range is 5-20K. Is there a reason why you quoted us 10K?*
- *Why is the app development so expensive?*

In comparison, ChatGPT questions tended to sound neutral and objective. For example:

- *How does “Wash-n-Go” handle customer data, especially considering the sensitive nature of payment information?* (among questions generated by Lee’s ChatGPT prompt)
- *In what ways will it not only increase customer satisfaction but also drive customer loyalty and retention for the platform?* (among questions generated by Tom’s ChatGPT prompt)
- *How will Kellton Tech ensure that ShockGuardian aligns with Aftershock’s brand identity and customer service philosophy?* (among questions generated by Jan’s ChatGPT prompt)

In relation to this, Maurya (2023b), who developed a ChatGPT Client Simulation model to help counselors-in-training practice counseling skills, observed that ChatGPT’s responses could lack nonverbal cues and emotional range, thereby “limiting the overall experience of counseling skills practice” (p. 2). Webb (2023), in his exploration of using ChatGPT to train emergency department physicians in breaking bad news to patients, also noted that ChatGPT “cannot assess or relay the intangibles of human communication, such as eye contact, pausing to listen, and tone” (p. 5). However, Sorin et al.’s (2023) review of seven studies on large language models’ (like ChatGPT) capacity to demonstrate empathy concluded that large language models do “exhibit elements of empathy”, including providing “emotionally supportive responses” in various contexts, particularly those related to healthcare.

These are crucial points to note because a speaker’s choice of words and linguistic expression, and the prosodic features of the speaker’s voice can impact the listener’s perception of the speaker’s attitude and intention (Tsurutan, 2018). During a Q&A session, the way a question is posed may impact the emotional response of the person answering the question, potentially affecting how the question is addressed. Professionalism in handling tough questions under pressure as well as keeping one’s composure when responding to perceived face-threatening questions are important communication skills for presenters to develop. This is something that students may not be able to practice with ChatGPT unless they specifically prompt ChatGPT to ask questions in this manner. There is some research evidence that this could be accomplished. For example, Ayers et al. (2023) compared the quality and empathy of ChatGPT versus human doctors’ responses to patients and found that patients preferred ChatGPT responses because they were higher quality and more empathetic than the human physicians’. This suggests that it may be possible to engineer prompts to get ChatGPT to generate questions that are more varied and nuanced in tone and emotions.

OpenAI rolled out voice capability for ChatGPT on iOS and Android devices in September 2023 (OpenAI, 2023) for Plus and Enterprise users (paid accounts). Voice capability was made available on the free accounts in November 2023. Therefore, as this study was conducted before voice capabilities were available, the students in this study could interact with ChatGPT only via text.

However, during the writing of this study, voice capability is now already available. Therefore, as an experiment, I used the voice capability and verbally instructed ChatGPT to roleplay, using the prompt in Figure 1. In addition, ChatGPT was instructed to ask questions in an “unfriendly, skeptical, and challenging” manner. In response to my summarized pitch, ChatGPT indeed asked questions in a more skeptical and challenging tone (Figure 8).






-  **ChatGPT**
Alright, let's get this straight. You're proposing we use this 'DrezzMe' system, but how can we trust its accuracy? You claim it fits 'every curve of the body,' but what evidence do you have to back this up? How do we know it won't just lead to more returns when these 'virtual fits' don't match reality?
-  **You**
Our testing shows that the technology is able to achieve an 80% fit.
-  **ChatGPT**
Only 80%? That's not very impressive. What about the other 20%? It sounds like we could still end up dealing with a significant number of returns. How do you plan to address this gap?
-  **You**
That's a good number compared to the returns that you're getting. At the moment, you're getting about 50% returns.
-  **ChatGPT**
Well, reducing returns from 50% to 20% is something, but it's still a sizable margin. What specific strategies do you have in place to further minimize these returns? And how will DrezzMe evolve to improve its accuracy over time?

Figure 8: ChatGPT asking questions in a more skeptical and challenging tone

However, despite the seemingly doubtful tone conveyed in the words, ChatGPT's “voice” did not display paralinguistic attributes that conveyed any discernible skepticism that might grate on a tense presenter's nerves and affect his or her professional demeanor when answering the question.

4.1.5 Human-generated questions challenge the presenters' composure in the form of “irrelevant” questions

Among the 38 final pitch questions examined, 5 questions were coded as “misdirected”. Table 9 below shows a list of these questions that were asked by the students roleplaying as the clients, and the reasons they were coded as “misdirected”.

Table 9
Final pitch questions coded as “misdirected”

| Questions asked by the students roleplaying as the clients | Reasons for coding them as “misdirected” |
|---|---|
| <i>Do you advise ending the partnership with Food Panda?</i> | The presenters were expected to roleplay as IT consultants pitching an IT solution to their client. The students roleplaying as clients were therefore expected to ask questions about the IT solution. However, these questions pertain to the clients’ business model and business decisions, and hence are deemed not relevant to the scenario. |
| <i>Does Design Orchard bring in global brands?</i> | |
| <i>You mentioned that Design Mart empowers creativity. How does that support our local talent?</i> | |
| <i>Your solution will be pre-installed into every PC, right? Will you be charging customers more?</i> | |
| <i>How to ensure that people will come and collect their laundry when it is ready?</i> | This is a question about human behavior, and is not within the scope of the IT consultants/presenters. Note: The student who answered this question initially looked perplexed and he struggled to find an answer and a way to word his answer tactfully. He then correctly responded that as an IT solutions provider, his team could only program the software to send notifications to the users that their laundry is ready for collection. The laundromat could impose fines on users who collect their laundry beyond a certain time, but such measures are matters for the laundromat management to decide. |

4.1.6 Discussion: To what extent can ChatGPT help students anticipate and prepare for questions in their pitch presentations?

From the findings detailed in sections 4.1.1 to 4.1.5, it appears that ChatGPT can indeed help students anticipate and prepare for questions in their pitch presentations. The findings show that ChatGPT is likely to first ask questions to ensure that all the basic information expected in a business proposal pitch is available. As Joshi et al. (2023, p.8) noted, “ChatGPT has a good ‘understanding’ of theoretical concepts, i.e. when it comes to established factual knowledge.”

In response to information provided about these basic questions, it is able to ask more specific probing questions that request further information and challenge the users’ critical thinking skills. Such critical-thinking follow-up questions from ChatGPT suggest that

ChatGPT can ask realistic, meaningful, and probing questions that can help students prepare for their Q&A. As Nikolic et al. (2023, p. 584) note:

While ChatGPT may help provide the student with possible questions that may be asked, it is unlikely that it could anticipate all potential questions from academic staff. However, if a student did try and prepare for such outcomes, it would be a supportive learning experience.

Q&A skill training involves not only anticipating and preparing answers for potential questions, but also learning to professionally and tactfully address questions that are perceived to be rude, offensive, hostile, irrelevant, random, frustrating, and odd. To practice this skill with ChatGPT, students would need to specifically prompt ChatGPT to ask questions in such a manner. The brief experiment with ChatGPT voice capability suggests that at the time of writing this study (March 2024), ChatGPT-generated questions may still lack the vocal intonation and facial expressions that could potentially unsettle a stressed presenter during a Q&A session.

Therefore, the ChatGPT version that is available at the time of writing this study, while able to help students anticipate and prepare for potential questions in text and through audio, may not yet be able to fully simulate the interpersonal communication necessary for practicing one's emotional intelligence to navigate the subtleties of human exchanges in Q&A sessions. This implies that for high-stakes Q&A sessions, this aspect of the Q&A preparation is probably still best practiced with real human interaction.

4.2 Can ChatGPT help students ask more challenging questions of their peers?

Table 10 shows that there were more higher-order thinking questions among the anticipated questions (86.5%) than among the final pitch questions (63.2%). These numbers seem to suggest that ChatGPT-use did not have an impact on the number of challenging questions asked in the final pitch. However, the sample size is too small for this to be conclusive.

Table 10
Percentage of lower-order versus higher-order thinking questions

| | Anticipated (%) | ChatGPT (%) | Final Pitch (%) |
|------------------------|-----------------|-------------|-----------------|
| Lower-order questions | 13.5 | 55.0 | 36.8 |
| Higher-order questions | 86.5 | 45.0 | 63.2 |

Nevertheless, it was observed that in the final pitch Q&A, some of the students appeared to have asked questions that echo ChatGPT-generated questions. Table 11 shows some examples of such cases.

Table 11
Examples of similarities between anticipated questions, ChatGPT-generated questions, and final pitch questions

| Example | Anticipated questions | ChatGPT-generated questions | Actual questions asked in the final pitch |
|---------|--|--|--|
| 1 | <i>Given that operating software updates from time to time, how does ShockGuardian evolve itself, and who is responsible for these updates?</i> | <i>How will Kellton Tech handle potential updates or changes in technology that may occur during the six-month integration period?</i> | <i>We update our inventory every 6 months. Will you be providing support for the online store with inventory listing and virtual fitting room clothing measurement updates?</i> |
| | Subtheme: Technical support and maintenance Cognitive level: Applying | Subtheme: Technical support and maintenance Cognitive level: Applying | Subtheme: Technical support and maintenance Cognitive level: Applying |
| 2 | | <i>How will Kellton Tech ensure that ShockGuardian aligns with Aftershock's brand identity and customer service philosophy?</i> | <i>Design Orchard is all about creating a unique shopping experience in this uniquely designed building. Wouldn't an online store take that away from our customers?</i> |
| | | Subtheme: Alignment with client's goal Cognitive level: Evaluating | Subtheme: Alignment with client's goal Cognitive level: Evaluating |
| 3 | | <i>Could you provide more details about the technology behind the 3D scanning process? How does it ensure accurate measurements and an authentic representation of the clothing on the user's virtual self?</i> | <i>Share more details about how the technology behind the personalized recommendations work.</i> |
| | | Subtheme: How the tech works Cognitive level: Applying | Subtheme: How the tech works Cognitive level: Applying |

In Example 1, Jan anticipated a question about software updates. His ChatGPT-generated list of questions also contained a question about software updates. During the pitch presentation, his team did not get asked this question, but he, while roleplaying the client for another team, posed the question about software updates to that team.

In Example 2, Jan did not anticipate questions about the solution's alignment with the business's brand identity. However, his ChatGPT output contained a question about this aspect, and he seemed to have been inspired by this question to ask another team a question about how their proposal aligned with the client's branding.

In Example 3, Tom did not anticipate questions asking about how the technology works. However, he appeared to have been inspired by a ChatGPT-generated question, and in the final presentation, he asked a question that closely resembled the ChatGPT-generated question.

These examples suggest that ChatGPT can give students ideas to get started with asking questions, particularly if the subject matter is new to them and they are uncertain what kind of questions to ask. This finding lends support to that of Guo & Lee (2023), who investigated the use of a ChatGPT-based activity to foster critical thinking skills in an introductory chemistry course and found "significant improvements in students' confidence to ask insightful questions" (p. 4876).

4.3 What are students' thoughts about practicing for the Q&A with ChatGPT?

The students' reflections reveal positive and insightful views about ChatGPT use for Q&A practice and preparation.

Two students wrote about the novelty and usefulness of using ChatGPT to prepare for Q&A:

- Excerpt 1: *I never expected the use of AI in this aspect, and this is certainly something which I will utilize further for my other modules / in the work space.* (Gary)
- Excerpt 2: *I was also surprised by how AI tools such as ChatGPT can actually help to generate possible Q&A questions for our presentation and it really helped us to be more prepared for our pitch to the client.* (Zheng)

One of the students also commented on the stress-reducing potential of practicing with ChatGPT:

Excerpt 3: Practicing with ChatGPT was a game-changer... less anxiety and helped me prepare for many questions. I prepared all the info before my presentation, so I was less stressed to present during the actual presentation and did not feel so pressured during QnA because I already prepared answers for most questions. (Yang)

Another student noted that the prompt framework was useful and ChatGPT generated insightful questions that helped him prepare for the Q&A.

Excerpt 4: *We learned about the prompt roleplay simulation... In the subsequent weeks, as we prepared for the question and answer in our proposal pitch, we were able to utilize the same techniques and the prompt framework to receive potential questions. The prompt framework is especially useful in allowing all of us to be able to receive more insightful questions that we could ponder and think about. This technique is especially useful in trying to predict the questions that the audience may ask during our presentations. I used the same prompt engineering methodology to practice on a couple of questions before the pitch. It turned out that in fact, one of the questions that were surfaced by ChatGPT was asked during class and I was well prepared for the question.* (Han)

Unfortunately, this student did not respond to my requests for him to share his ChatGPT chat history. Nevertheless, these students' comments provide support for Cohen and Dreyer-Lude's (2019, p. 93) assertion that "even the process of anticipating questions can help you mentally prepare for the questions you will receive."

One student noted an insightful observation that ChatGPT is particularly suited for students who are new to the subject matter:

Excerpt 5: *LLMs ... especially helpful when the subject matter is relatively new and we do not have much technical knowledge about the field and do not know what kind of questions to prepare for...* (Vic)

This observation lends support to the utility of the earlier finding that ChatGPT appears to be able to ask questions to ensure that the basic essential information expected in a business pitch is covered, and follow up on students' prompt inputs with probing questions to clarify their claims and vague statements.

One student made an important observation that human rephrasing and editing are needed when working with ChatGPT-generated questions:

Excerpt 6: *Our group used Chatgpt to generate a list of possible Q&A questions by prompting a brief description of our business proposal and explaining the oral pitch scenario. Chatgpt is helpful as it generated a list of 10 questions in just a few seconds. However, we realise some of the questions are very long winded and slightly more complicated, which are unlikely to be asked by people who first listen to our pitch and have not read our proposal in details (which is the case for our pitch audiences), the questions are generally pretty insightful but may require rephrasing.* (Min)

Another student wrote that he had prompted ChatGPT to provide sample answers to questions it had generated, and rightly realized that ChatGPT answers seemed rather general and noted the need to build on those answers:

Excerpt 7: Chatgpt is also helpful in providing the answers to the questions by providing a comprehensive response. However, since it does not have access to our proposal and the full details, it can only provide pretty general answers that are vague and not specific to the case. We then build on the answers given by adding in specific examples in our proposal and giving more specific explanations pertaining to our business ideas. (Chan)

Indeed, Maurya's (2023b) study on simulated roleplaying with ChatGPT for practicing counseling skills also observed that "ChatGPT's responses to the counselor's questions appeared overly idealized lacking the authenticity typically observed in real clients" (p. 2). These students' reflections and Maurya's finding align with current understanding about the need to "evaluate the output generated by the ChatGPT model, to ensure that it is accurate and relevant to your task" (Atlas, 2023, p. 97).

This same student also highlighted a concern that many educators have about reliance on ChatGPT affecting students' ability to think:

Excerpt 8: I felt that relying too much on ChatGPT might hinder my ability to think on my feet. In the real-world, questions are unpredictable and too much practice can make us less spontaneous and creative when answering new questions. (Chan)

These concerns reflect Farrokhnia et al.'s (2023) caution that over-dependence on ChatGPT "can lead to a decline in their higher-order cognitive skills such as creativity, critical thinking, reasoning, and problem-solving" (p. 9). These views align with those of Mollick and Mollick (2023) and Atlas (2023), who stress that generative AI tools like ChatGPT need to be used as support tools to enhance rather than replace critical thinking and creativity.

One student's reflection pointed to the relevance and significance of efforts to help students learn to use generative AI in the classroom productively and ethically:

Excerpt 9: In the current world, we cannot avoid using the power of AI to enhance our learning and processes, I am very happy to have the opportunity to be able to harness the true power of chatgpt to enhance my learning abilities to do well in not only school but also my career. (Bob)

In conclusion, all these findings and corresponding research support calls for educators to "empower students to leverage generative AI tools effectively while preserving their personal learning" (Abbas et al., 2024, p. 18).

4.4 Possible reasons for low engagement with ChatGPT roleplay simulation

An interesting finding was that although 21 students consented to participate in the study, only four gave me access to their ChatGPT chat history, and none of them simulated a

roleplay with ChatGPT (they merely prompted ChatGPT to generate a list of questions for their script). Only eight wrote about their explorations with using ChatGPT to prepare for the Q&A, and of these eight, only one of them was among those who shared his ChatGPT chat history with me.

In the absence of a follow-up interview and lack of student responses to my follow-up attempts to contact the students for further information, it was not possible to determine the exact reasons for the students' low engagement with this activity. However, several reasons could be conjectured:

1. The students were very busy at that time of the semester

When contacted after the end of the semester, six of the eight students who responded to my messages cited time demands as the main reason for not engaging more extensively in a simulated roleplay with ChatGPT. Many of them were taking five to seven courses and Weeks 9-10 of the semester were critical weeks for them with many assignment and presentation deadlines, and as the marks awarded for their performance in the Q&A in the final pitch presentation in this course were relatively low stakes comprising no more than 10% of the final grade, the students decided to make do with generating a quick list of questions to get an idea of what to expect during the final pitch Q&A. Nevertheless, these 6 students said that they would likely practice roleplaying with ChatGPT to prepare for a job interview.

Interestingly, one student responded that he practiced Q&A with his father:

Excerpt 10: *...i didnt use any ai tools for my qna prep, i just asked my dad for questions that he would ask when i did my dry run...* (Ling)

Another student wrote:

Excerpt 11: *I did not see the need to use ChatGPT for QnA preparation at the time since we were able to come up with questions and answers ourselves quite easily (and I believe I might have forgotten to use it for the sake of the study)...* (Thien)

These findings appear to suggest that if a human coach is available and willing, and if students perceive the task to be manageable, they may be less inclined to use ChatGPT. These findings require further investigation because they contrast with Abbas et al.'s (2024) finding that students who are experiencing high workload and time pressure are more likely to turn to ChatGPT for help with their assignments. However, Abbas et al. (2024) also found that students who were "sensitive to rewards" (p. 17) (grades) tended to avoid using ChatGPT. The students in this study were indeed experiencing high workload and time pressure, yet most of them were also very concerned about grades. More work is therefore needed to understand the factors and conditions that impact the likelihood of students using generative AI tools.

2. Effective prompt engineering is time-consuming

As Chan (Excerpt 7) noted in his reflection, ChatGPT questions and suggested answers tended to be somewhat general and vague because the chatbot did not have access to the background information that the students had gathered and synthesized in the process of preparing the business proposal and pitch. Additional prompting would have been necessary to give ChatGPT sufficient context for it to generate highly relevant questions and sample answers. Additional prompting would also have been necessary to get ChatGPT to produce “unexpected” questions that challenge the students’ communication skills. As Mollick & Mollick (2023) noted, generative AI chatbots are unpredictable and multiple prompting attempts are often needed to make it work the way we want it to. Given that the students had only 1 week to prepare for the pitch presentation amidst deadlines for multiple other courses, getting ChatGPT to generate a list of suggested questions would have probably been the quickest and easiest way to prepare for the Q&A at that time.

3. The activity was not compulsory

It was not mandatory for the students to practice roleplaying Q&A with ChatGPT in preparation for their Q&A. The students were introduced to the activity in class and asked to practice on their own, consistent with efforts throughout the course to empower students to engage in independent learning outside the classroom. Student engagement and response rate could have been much greater if the activity had been made compulsory.

5. Pedagogical Recommendations

This study demonstrates that ChatGPT can serve as an effective support tool for students to independently hone their Q&A skills, particularly for students who are new to the subject matter. The following are some pedagogical recommendations derived from the experience of conducting this study.

1. The effectiveness of the roleplay simulations with ChatGPT depends on the quality of the prompts provided. Therefore, educators need to facilitate discussions on crafting effective prompts, emphasizing such key elements as the importance of clearly describing the context, stating the task, specifying ChatGPT’s role, providing specific step-by-step instructions, and maybe even giving examples of expected outputs.
2. Encourage students to explore a wide range of audience reactions in their roleplay simulations. This diversity in practice can better prepare them for the unpredictable nature of real-world Q&A sessions. Educators could help students determine the exact communication

skills that they want to practice with ChatGPT's help (such as responding to hostile, rude, and irrelevant questions) and engineer that into the prompt.

3. Motivate student engagement by awarding marks for quality of questions asked and quality of answers, as well as quality of interpersonal skills demonstrated, so that they take the activity more seriously in order to benefit from it.
4. Convey equal importance of the presentation and the Q&A by allocating the same amount of time for the presentation and the Q&A.
5. Allow time in class to explore and familiarize students with the use of ChatGPT as a means to support out-of-class independent learning. In tandem with this, it is necessary to engage students in regular discussion on how to use generative AI tools to support learning rather than replace thinking.

6. Limitations and Future Work

The main limitation of this study is the very small sample size and limited data, which affect the generalizability of the findings. Although promising findings have been observed, it would be helpful for future research to involve a larger sample size for wider generalizability. Greater student engagement with the activity could be gained by formally incorporating this activity into the course curriculum, in alignment with the course-wide (and university-wide) effort to develop AI literacy among students.

Another limitation is the prompt used; different prompts elicit different types of questions. The initial prompt and the class discussion did not cover prompting ChatGPT to ask questions with different emotional undertones for the purpose of practicing responses to the perceived emotions behind audience questions. Future work could explore prompting ChatGPT to word its questions to convey different emotional undertones, such as cynicism and doubt, and to generate unexpected questions so students could specifically practice responding to such questions professionally and tactfully. Now that ChatGPT has voice capability, future work could explore this area for a more natural conversational experience with ChatGPT.

A third limitation is the study did not distinguish between students who used the free ChatGPT-3.5 and those who used the paid ChatGPT-4. At the time of this study, because it was my first attempt to incorporate ChatGPT use in the classroom, I wanted to ensure all students had access to the technology, regardless of version. Nevertheless, it is noted that ChatGPT-4 is significantly more advanced than ChatGPT-3.5 (Cotton et al., 2024; Rahaman et al., 2023), and the version used by the students would have affected the outcome of this study. Future research could require that students use the university's own generative AI chatbot for a more consistent investigation.

Another potential area for further investigation is that students reported not using ChatGPT although they had been empowered and allowed to do so for this activity. It is possible that the students may have used ChatGPT for Q&A preparation but did not report doing so; this aspect deserves further exploration. Future work also needs to incorporate follow-up surveys or focus group discussions to gain deeper insight into the students' experiences and thoughts about the activity. The exact factors that influence students' choice to use generative AI tools, such as workload, perception of task manageability, sensitivity to rewards, etc. could also be explored in future studies.

7. Conclusion

This exploratory study investigated how students used ChatGPT to prepare for the Q&A in business pitch presentations. Despite the small sample size, this study has shown some promising evidence suggesting that there is value in engaging in a roleplay simulation with ChatGPT for the purpose of anticipating questions and preparing for the Q&A in business pitch presentations, particularly for students who are new to the subject matter. The current version of ChatGPT shows limitations in anticipating the range of possible questions, mimicking human emotions, and producing nonverbal cues, therefore there is still a need for real-world human roleplay simulation for holistic and comprehensive Q&A skill practice.

The field of generative AI however, is evolving rapidly. As there is much potential for AI integration in teaching and learning, there is therefore a need to constantly try to understand and explore its capabilities, be mindful of its limitations, and learn to use it to empower and support teaching and learning. As with any digital tool, educators will need to help students develop the digital competence to use it safely, ethically, and appropriately. This study is one step further in that direction.

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No Conflict Of Interest

The author certifies that she is not affiliated with any person or organization with financial or non-financial interest in the subject matter or materials discussed in this manuscript.

Declaration of Use of Generative AI

The author declares that she has used ChatGPT in the Abstract section of the manuscript to improve the conciseness of the sentences.

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