

Image generated with ChatGPT 4.0 using the prompt "A.I. Unleashed: Shaping Dietetics in the Digital Age."

Disclosures

Current affiliations. No conflicts of interest to report.

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- TELUS Health / TELUS Santé
- Microsoft Canada | Bing & MSN Health
- MedWorks Canada
- College of Dietitians of Ontario
- The Academy | Foundation, State Affiliates, DPGs & MIGs

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- Hilbert College Global | Natural Sciences & Math

Volunteer

- The Committee for Lifelong Learning (think FNCE® program planning)
- The CDR Appeals Panel (think PDP/CE extensions)

Blueprints for Brilliance: Today's LOs

Utilize an AI tool in order to
improve productivity & client satisfaction

Consider A.I.-enhanced teaching strategies & methods in order to
engage targeted audiences & develop meaningful content

Discuss ethical implications of A.I. in order to
plan for responsible AI integration & use

Recall curriculum considerations in order to
help prepare future practitioners for an AI-included profession

Disclaimers

| | |
|-----------------------------------|---|
| Today's speaker | <i>experience vs expertise</i> |
| 101 info & application | <i>some 101 practice apps, broad & specific</i> |
| Now vs later | <i>info relevance & applicability</i> |
| Commercialism | <i>product promotion, ChatGPT 3.5 & 4.0 use</i> |

Artificial Intelligence (AI)¹

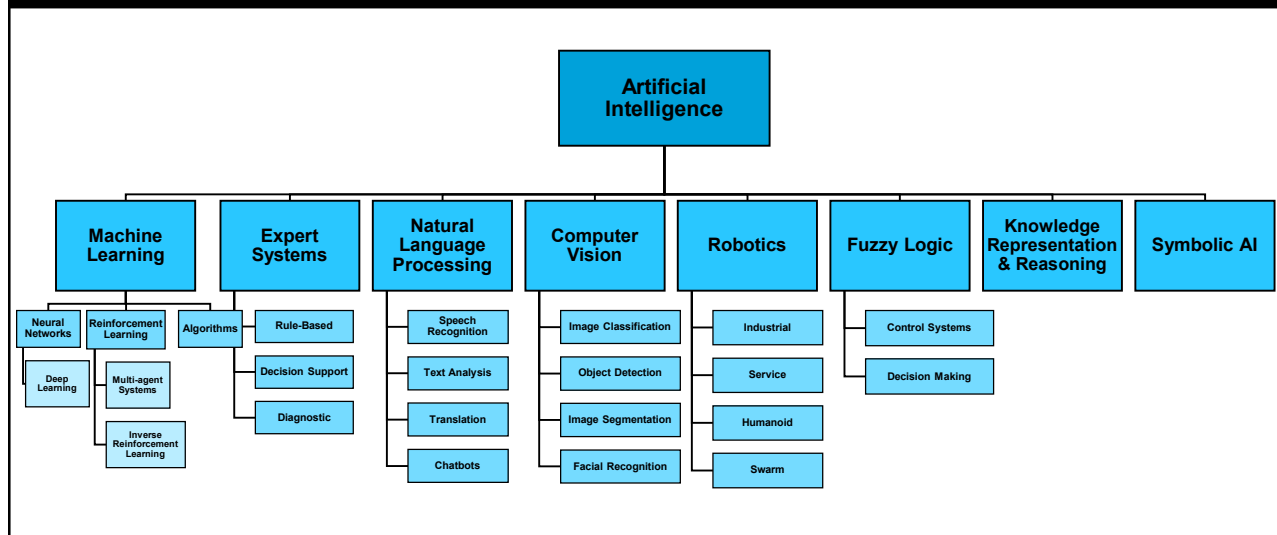
A field of computer & data science focused on creating **systems capable of performing tasks that typically require human intelligence.**

- understand language
- reason
- respond / output
- problem solve
- adjust
- learn from experience

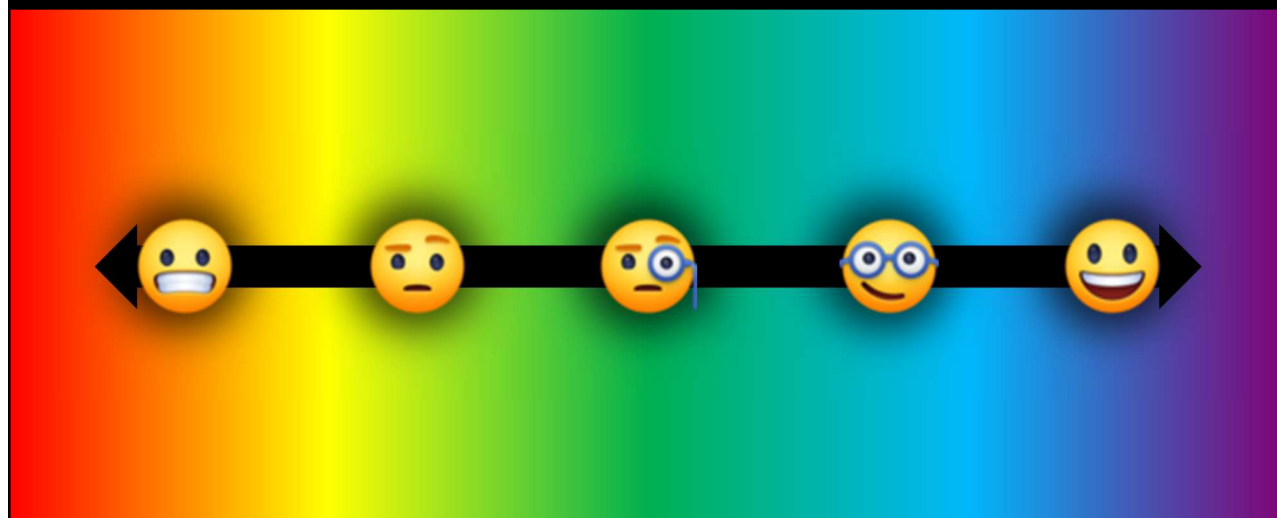
AI encompasses a range of technologies and approaches, including machine learning (ML) & deep learning (DL), natural language processing (NLP), computer vision, robotics & more.



Key Technologies of AI³



A Spectrum of Attitudes About AI⁴⁻⁶



10 Industries Impacted by A.I. ^{38,39}



Service Automation & Personalization



Finance & ID Fraud Detection



Personalization & Supply Chain Opt.



Autonomous Vehicles & Traffic Flow Opt.



Predictive Maintenance & Quality Control



Content Automation & Personalization



Adaptive LMS & Auto Admin



Crop Health Monitoring & Precision Ag



Enhanced Surveillance & Threat Detection



Diagnostic Accuracy & Patient Care

Applications in Food, Nutrition & Health/care

Clinical assessment & diagnosis assistance^{7,8}

Nutrition care plan development⁹

Disease risk & health outcome predictions^{10,11}

Social media data analytics¹²

Wearable devices & smartphone apps¹³⁻¹⁵

Chatbots^{16,17}

CBR & CDS – DM care¹⁸

Policy & climate impact on food security & waste¹⁹

Food safety, quality & inventory²⁰

GenAI: Everyone's Assistant & Second Brain

- ✓ Quick second opinion
- ✓ Education, planning & guidance
- ✓ Copy writing, editing & translation
- ✓ Business strategy
- ✓ Communications & collaboration
- ✓ Article summarization & analysis
- ✓ Text-to-image & -video
- ✓ Research & development

**Becoming a Pro at
Developing Prompts**

GPT Prompts: Ya Get What Ya Give ²¹

Task

context
inclusions
response

Question

direct
uncomplex
open vs closed

Considerations for Developing a Successful GenAI Chatbot Prompt

- 1. Provide context:** This involves giving background information or details relevant to the prompt. For example, if you're asking for advice on meal planning for a specific population, providing context about their dietary needs or preferences helps generate a more tailored response.
- 2. Assign a role:** This is where you specify the role you want ChatGPT to take. For example, you might want ChatGPT to act as a nutrition educator, a recipe developer, or a research assistant. This helps guide the nature of the response.
- 3. Use keywords:** Keywords are important terms related to your query that help ChatGPT understand the main focus of your request. For example, in a prompt about diets, keywords might include "heart healthy," "omega-3 fatty acids," and/or "fiber."
- 4. Clarify inclusions:** This involves specifying what information or elements you want included in the response. For example, if you're asking for a meal plan, you might clarify that you want it to include breakfast, lunch, dinner, and snack options.
- 5. Request sources of where information came from that was used to develop the output/response:** This involves asking ChatGPT to cite the sources or provide references for the information used in its response. This is important for verifying the accuracy and reliability of the information.
- 6. Specify the desired response such as language/tone use, format, and length:** This component allows you to tailor the output to your needs. For example, you might specify that you want a response in a conversational tone, formatted as a bullet point list, and not exceeding 300 words.
- 7. Be complete & specific:** This means providing all the necessary details to ensure a comprehensive and precise response. For example, if you're asking for recommendations on dietary supplements, being specific about the target population, health goals, and any contraindications helps generate a more accurate answer.

Below are important parts of the process of working with GenAI, like a chatbot.

| Iterate | Refine | Train | Experiment |
|--|---|---|--|
| Repeat a process with the aim of improving the outcome each time. Iterate by adjusting your prompts based on the responses you receive, continually refining your approach to get more accurate or relevant results. | Make small adjustments to improve the quality of prompt and output. Refining your prompts might involve breaking the wording, adding more specific details, or clarifying your request to ensure that the responses better meet your needs. | Teach the AI model to understand and respond to a wide range of inputs. Providing feedback on responses or using specific prompts that guide the AI to give the kind of answers you're looking for. | Try out different approaches to see what works best. Testing various prompt structures, exploring different logics, or you phrase your tasks or questions to discover the resulting responses/output you want or need. |

Experiment

Primary GPT Task Prompt Structure ²²

- Role
- Context
- Inclusions
- Keywords
- Response

As a nutrition expert looking to attract more clients,

I need effective lead generation strategies for my nutrition business.

Provide a list of strategies and examples for social media marketing, networking, and creating engaging content. Focus on search engine optimization.

The language used in the marketing and promotional copy should be engaging and persuasive.

Improving Productivity & Client Satisfaction

Time to Vote!

Personalising a meal plan & provide recipes in context of:

1. Limited foods at home

2. Diabetes management

Prompt!

Personalising a meal plan & recipes in context of limited foods at home:



I have a client who has **limited foods at home** but needs to **make them last for herself and her child for the next 3 days**. Consider that **only an electric stove and oven** is available for heating/cooking/baking.

Act as an **expert meal planner** and create a **3-day meal plan** with **simple recipes** for **breakfast, lunch, and dinner using the following ingredients**: 1kg flour, unlimited water, 1 loaf of bread, 1 litre of canola oil, 10 eggs, 2 cans of black beans, 2 cans of tuna, 4 cans of diced carrots, 1 can of corn, 300 grams of chicken, 1 litre of milk, 1 lime, salt, pepper, cumin, garlic powder, 2 medium white onions, 6 apples, 200 grams of guava paste, 1kg of white potatoes, 1 litre of mango juice, and 1 large bag of frozen peas.

Please ensure the meals provide **adequate calories and protein** for a 30-year-old female and 6-year-old boy

Provide protein, fat, and carbohydrate **nutrition information for each prepared food item**, as well as for the **suggested adult & child serving sizes**. Include **where you retrieved nutrition information from**. Provide the meal plan, recipes, preparation instructions, and nutrition information **all in an organized table format**.

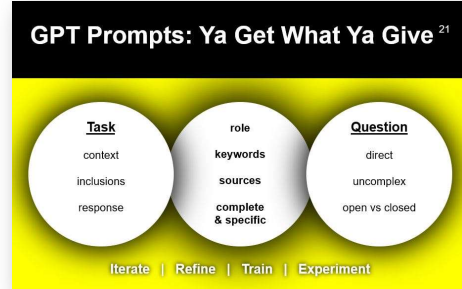
Day 2:

Recipes and Preparation Instructions:

1. **Scrambled Eggs with Toast:** Beat eggs with salt and pepper. Cook in a non-stick pan with a little oil until set. Serve with toasted bread.
2. **Tuna Salad with Bread:** Mix canned tuna with diced onions, lime juice, salt, and pepper. Serve on bread.
3. **Black Bean and Carrot Soup:** Blend canned black beans and canned carrots with water to desired consistency. Season with cumin, garlic powder, salt, and pepper. Heat until warm.
4. **Guava Paste on Toast:** Spread guava paste on toasted bread.
5. **Chicken and Pea Stir-Fry:** Dice chicken and cook in a pan with oil until browned. Add frozen peas, diced onions, and season with salt and pepper. Cook until peas are heated through.
6. **Potato and Onion Bake:** Slice potatoes and onions thinly. Layer in a baking dish, drizzle with oil, and season with salt and pepper. Bake at 200°C until potatoes are tender.
7. **Milk and Apple Porridge:** Dice apple and cook in a pot with milk until soft. Serve warm.
8. **Tuna and Carrot Patties:** Mash canned tuna and canned carrots together. Form into patties and fry in a pan with oil until golden on both sides.
9. **Black Bean and Corn Salad:** Mix canned black beans, canned corn, diced onions, lime juice, salt

Prompt!

Personalising a meal plan, recipes, & grocery list in context of diabetes management:



As a **nutrition expert specializing in diabetes management**, create a **5-day meal plan** for a **single adult male with type 2 diabetes**, focusing on providing **consistent protein and carbohydrate intake** throughout all 3 meals and 2 snack periods each day. The individual is **lactose intolerant and does not eat seafood**. The **target protein intake** is 25g per meal and 10g per snack, and the **target carbohydrate intake** is 60g per meal and 30g per snack.

For each day, provide: **Breakfast, Lunch, Dinner, and Two Snack Options**. Include **simple recipes** for each meal and snack. Include **preparation instructions and nutrition information** for each prepared food item and **suggested adult serving sizes**, including **protein, fat, and carbohydrate content for each serving**. Provide a **Grocery Shopping List** with needed items **organized by store sections** (produce, meat, bakery, frozen, canned & boxed foods). Please ensure that the meal plan is **balanced, varied & suitable for managing diabetes**.

Use **reliable sources for nutrition information & cite them accordingly**. Provide the meal plan, serving sizes, and nutrition information in **one table**, the recipes in **another table**, and the grocery list in a **third table**. **Exclude any ingredients or products** that contain lactose & seafood.

5-Day Recipes and Preparation Instructions

Grocery Shopping List

| Section | Items |
|----------------------|--|
| Produce | Spinach, mixed greens, broccoli, apples, bananas, avocados, asparagus, carrots, mixed vegetables, sweet potatoes, green beans, oranges, berries, cherry tomatoes, romaine lettuce |
| Meat | Chicken breast, beef, pork chop, turkey breast, ground turkey, salmon fillet |
| Bakery | Whole wheat bread, whole wheat tortillas, whole wheat croutons, rice cakes |
| Dairy | Lactose-free Greek yogurt, lactose-free cottage cheese |
| Pantry | Almond butter, balsamic vinaigrette, soy sauce, garlic, brown rice, quinoa, hummus, peanut butter, whole wheat pasta, tomato sauce, granola, protein powder, honey, almonds, dried apricots, whole wheat pasta |
| Canned & Boxed Foods | Lentils, broth, canned pineapple chunks |
| Frozen | Edamame |

Cottage Cheese with 1 cup lactose-free cottage Mix cottage cheese and pineapple.

Communications, Marketing & Education

- Recipe & grocery list development
- Resume development
- Campaign, program & topic planning
- Copy, script, image & video generation & personalization
- **Considerations: Response quality (accuracy, misinterpretation & bias), Intellectual property (IP)**

Copywriting Samples for Social Media Posts:

Post 1:

"Is your child ready for the college dining hall challenge? Our Nourished College Life Program equips them with the skills to make healthier choices. Enroll now for a stress-free start to college life! #CollegeNutrition #HealthyCollegeLife"

Post 2:

"Dorm room cooking made easy! Our program teaches simple, nutritious recipes that fit perfectly into a busy college schedule. Give your child the gift of health this semester. #DormRoomCooking #StudentWellness"

Post 3:

"Concerned about your college student's food budget? Our program covers smart shopping tips and meal planning to stretch those dollars further. Enroll today for peace of mind! #BudgetFriendlyMeals #CollegeLife"

Video Content Ideas:

Video 1: Introduction to the Program

- * A short overview of the program, highlighting its key features and benefits.
- * Include testimonials from past participants or endorsements from educators.

Video 2: Sample Cooking Demonstration

- * Showcase a simple, healthy recipe that can be prepared in a dorm room setting.
- * Highlight the ease of preparation and the nutritional benefits.

Video 3: Tips for Navigating Campus Dining

- * Provide tips on making healthier choices in the college dining hall.
- * Include visual examples of balanced meals and portion control.

Decreasing the



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“ You can ask a GPT to **find peer-reviewed articles** related to X topic(s) or **upload identified articles**. Then, ask it to **create a table with organized columns** for, say, “year published,” “authors,” “title of study,” “study design,” “sample size,” “findings,” “strengths,” “limitations,” etc. **It won’t be perfect** (proofreading & editing likely required) **but it is a great starting point.** ”

Summarize
Illustrate

Cons: Output
; URL support

Trainability;
Volume & discernability;
Data format; Data bias & mis-
interpretation; Privacy & security



AI & Intellectual Property²³

CITING YOUR AI GENERATED CONTENT²⁴

Format (MLA):

"Description of chat" prompt. *Name of AI tool*, version of AI tool, Company, Date of chat, URL.

Example:

"Examples of harm reduction initiatives" prompt. *ChatGPT*, 4.0, OpenAI, 4 Mar. 2023, chat.openai.com/chat.

In-Text Citation Example:

("Examples of harm reduction")

- Currently (Mar 24), AI-generated content is not eligible for U.S. copyright protection.

**Engaging Targeted Audiences &
Developing Meaningful Content**

Time to Vote!

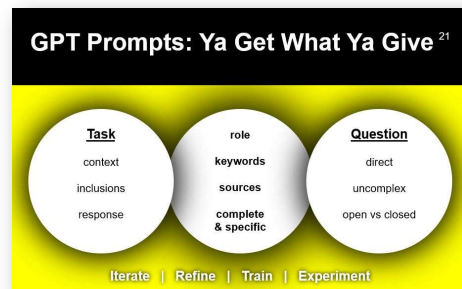
Brainstorm interactive teaching & learning methods for:

1. An in-person workshop on cardiovascular health & nutrition

2. An online nutrition course focused on healthy aging

Prompt!

Eliciting interactive teaching & learning methods for an **in-person workshop on cardiovascular health & nutrition:**



I'm **planning an in-person workshop on cardiovascular health and nutrition** for a **group of adults aged 40 to 60**. I need to develop a workshop that is **highly interactive and engaging** in order to **enhance learning and retention of key concepts**.

Act as an **instructional designer and brainstorming partner** and provide me with **creative ideas for interactive teaching and learning strategies** for this workshop. How can I **incorporate hands-on activities, group discussions, and visual aids** to effectively convey the importance of cardiovascular health and nutrition? Please include **specific examples of activities and discussion topics** that will **engage participants and encourage active participation**.

ChatGPT
Memory updated

To create an engaging workshop on cardiovascular health and nutrition for adults aged 40 to 60,

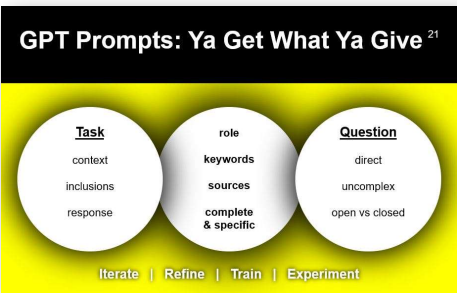
6. **Role-Playing Scenarios:** Create role-playing scenarios where participants act out situations that require them to make heart-healthy choices, such as dining out or attending a social gathering.
7. **Quiz Games:** Incorporate quiz games with questions related to cardiovascular health and nutrition. This can make learning fun and reinforce key concepts.
8. **Visual Aids:** Use visual aids such as infographics, charts, and diagrams to illustrate key concepts and make them easier to understand.
9. **Goal Setting:** Guide participants in setting realistic goals for improving their cardiovascular health, such as increasing their daily physical activity or reducing their sodium intake.
10. **Q&A Sessions:** Allocate time for participants to ask questions and seek clarification on topics they find challenging.

to appreciate food. This can help promote healthier eating habits.

5. **Interactive Discussions:** Break participants into small groups to discuss common challenges to maintaining a heart-healthy diet and share strategies for overcoming these challenges.

Prompt!

Eliciting interactive teaching & learning methods for an **online nutrition course focused on healthy aging:**



I'm **developing an online nutrition course** focused on **healthy aging, targeting adults, ages 40 to 60**, who want to improve their health and well-being through their dietary intake. I want to create a **comprehensive and engaging course** that **covers key topics** such as nutrient needs, simple meal planning and preparation, and lifestyle strategies for healthy aging.

Act as an **instructional designer and brainstorming partner** and provide me with ideas for **interactive and engaging teaching and learning strategies**. How can I **make the course interactive and engaging for participants**? Please include **suggestions for incorporating multimedia elements, self assessments that are fun, hands-on activities that enrollees can complete themselves at home, and discussion forum prompts that provoke critical thinking while applying knowledge they likely have in life already**, in order to enhance the learning experience.

Multimedia Elements:

1. **Video Lectures:** Break down complex topics into short, digestible videos with visuals and

Discussion Forum Prompts:

1. **Case Studies:** Present real-life scenarios related to healthy aging and ask participants to discuss solutions based on course content.
2. **Debate Topics:** Pose controversial topics related to nutrition and aging to stimulate critical thinking and discussion.
3. **Peer Feedback:** Encourage participants to share experiences and offer constructive feedback to their peers' meal plans or lifestyle changes.

Additional Ideas:

1. **Guest Speakers:** Invite guest speakers, such as nutritionists, chefs, or fitness experts, to share their insights and expertise.
 2. **Resource Library:** Provide access to articles, videos, and research papers for further reading and exploration.
 3. **Live Q&A Sessions:** Host live sessions where participants can ask questions and interact with you and other experts in real-time.
3. **Meal Planning Exercises:** Guide participants in creating personalized meal plans that meet their nutrient needs and preferences.

Engaging Targeted Audiences & Developing Meaningful Content

Example Prompts for Tailoring Instructional Materials

Prompt 11

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GPT Prompts: Ya Get What Ya Give ²¹

1. **Taylor Swift-Themed Quiz:** Create a quiz that includes questions related to both Taylor Swift trivia and cardiovascular health and nutrition facts. This can add a fun and familiar element to the learning experience.
2. **Lyric Analysis:** Choose Taylor Swift songs with themes of health, vitality, or self-care, and discuss the lyrics in relation to cardiovascular health. For example, you could analyze how lyrics about self-confidence or empowerment relate to making healthy choices.
3. **Swiftie Wellness Challenge:** Develop a wellness challenge inspired by Taylor Swift's music. For example, participants could earn "Swiftie points" for completing heart-healthy activities like going for a walk or trying a new healthy recipe.
4. **Create a "Swiftie" Cookbook:** Collaborate with participants to create a cookbook featuring heart-healthy recipes inspired by Taylor Swift song titles or lyrics. Each recipe could be paired with a brief explanation of its nutritional benefits.
5. **Role-Playing as Taylor Swift:** Encourage participants to imagine themselves as Taylor Swift and make health-conscious decisions based on her values and lifestyle. This could be done through scenarios or games.
6. **Music Video Parodies:** Have participants create their own music video parodies of Taylor Swift songs, but with lyrics rewritten to promote cardiovascular health and nutrition. This can be a fun way to reinforce key messages.

Question

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Prompt 12

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Ya Get ²¹

1. **Respectful Messaging:** Acknowledge and respect the individual's beliefs in fatalism without dismissing or contradicting them. Use language that is non-judgmental and empathetic.
2. **Focus on Empowerment:** Emphasize actions that individuals can take to improve their health within their belief system. Highlight the importance of small, manageable steps that can make a difference.
3. **Storytelling:** Share stories or testimonials from individuals with similar beliefs who have taken control of their health and made positive changes. This can help inspire and motivate others.
4. **Interactive Discussions:** Encourage open and respectful discussions about fatalism and its impact on health behaviors. Provide a safe space for individuals to express their thoughts and feelings.
5. **Incorporate Cultural Elements:** If relevant, incorporate cultural beliefs and practices into the educational materials. This can help make the information more relatable and meaningful to the audience.
6. **Use of Analogies:** Use analogies or metaphors that resonate with fatalistic beliefs to explain health concepts. For example, comparing the body to a machine that requires regular maintenance.
7. **Highlighting Benefits:** Emphasize the benefits of healthy behaviors in a way that aligns with fatalistic beliefs. For example, how eating nutritious foods can improve energy levels and overall well-being.

Question

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Communications, Marketing & Education



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“ I've used AI within Canva to **improve graphics for marketing materials.**

Utilizing ChatGPT, I've **created social media content, education materials, & have organized new projects** that I've begun implementing.

Something requiring hours or an additional person is now possible with AI. ”

ChatGPT
Social Media Marketing Strategy for "Nourished College Life Program"

1. Platform Focus:

targeted ads, groups, and sharing informative

and stories to engage a younger audience.

and organizations involved in higher education

dorm room cooking, and budget-friendly

posts or endorsements from educators.

down to the program launch date.

about college nutrition and the program.

on Instagram or Facebook to answer questions and

#CollegeNutrition, #HealthyCollegeLife,

to reach parents of college-bound students

5. Collaboration and Partnerships:

Partner with college-focused influencers, nutrition bloggers, and higher education institutions to expand your reach.

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**A ~~Prediction~~ for
AI in Dietetics**

RD & DTR Role(s) in the Age of AI

Advanced

Intermediate

Entry

scope & standards^{25,26}

- Specializations
- Research & QI
- Policy & advocacy
- Program development
- Leadership & management
- Education & counseling
- Collaborations

Focus on AI Implications^{27,28}

Bias

fairness & equity

Explainability

trust & regulation

Accountability & Accuracy

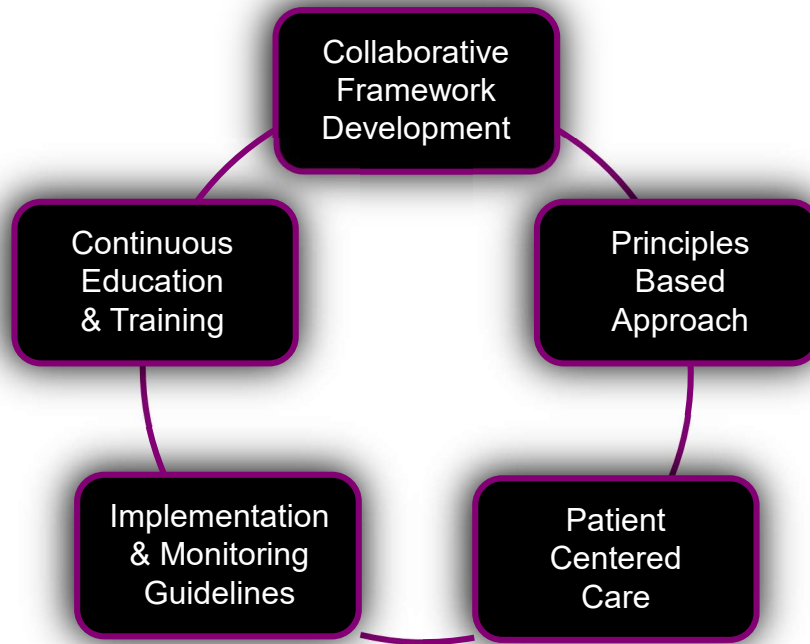
ethics & responsibility

Security

data protection & system integrity

Transparency

trust & informed consent



Planning for Responsible AI Integration & Use

Time to Plan!

Framework | Output Quality | Transparency & Accountability

Building a Collaborative Framework

IT
Department

Data
Security
Officer

Practice
Manager

Research &
Development
Team

Legal &
Compliance
Department

Professional
Development
Coordinator

Focusing on Quality Output Quality, Transparency & Accountability

Critical Review &
Decision Making
Authority

Data Training

Stakeholder
Communications

Consent ,
Disclosures &
Documentation

Feedback Loop,
Monitor &
Evaluate

Continuing
Education

Helping Prepare Future Practitioners for an AI-included Profession

Curves in Curriculum ^{33,34}

Ethics
spotlight



AI topic, skill
& tool integration



Foundational
AI knowledge



Professional development &
continuing education



Leveraging AI in Higher Education³⁵⁻³⁷

LMS Data Analytics

At-risk students | Personalized learning paths | Content enhancement



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PhD, RD, CDN, FAND (she/her)

Program Director, Nutrition & Dietetics
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“ I help guide students in using [GenAI] to support their learning.
I've used it to develop class outlines, lecture notes, and even assignments.
We're piloting a chatbase to answer student questions about course content.
Generative AI is all about the quality of your prompts. ”

Communicate AI Limitations & Implications

- “GPT Prompts: Ya Get What Ya Give”
- Known to produce inaccurate, outdated, biased output
- Lack of highly personalized and intricate psychological & emotional support in context of health care
- Expert validation, collaboration & systems are needed during implementation & use
- **Potential impact on critical thinking**



Image generated with ChatGPT 4.0 using the prompt "A lime green megaphone."

@askyourdigitalagency (IG) Hamna Aslam Kahn (in) Dirk Zee (in) Zain Kahn (in) ChatGPT Ideas, Tips & Tricks (Fb Group)

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Questions?

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The Minds Behind the Slides: References

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Improving Communications

Example Prompts for Communication Conundrums

Prompt!

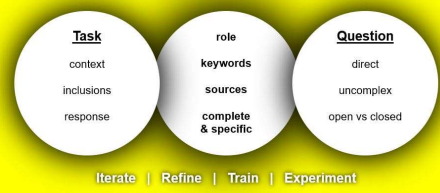
A communication conundrum in context of **client communications:**

I'm working with a client who is **resistant to making the dietary changes I've recommended for managing their cardiovascular disease**. They **live alone, have family but don't have a good relationship with them**, and are **concerned about dietary changes, fearing they won't enjoy the foods** that can help in managing cardiovascular disease. They like to **go for walks and have a few friends they are close with**.

Act as a **communication expert** and provide me with **strategies to effectively communicate** the importance of these dietary changes to my client. How can I **motivate them to embrace these changes and overcome their resistance?**

Please **ask me questions about the individual's lived experience** (focusing on motivating determinants of behavior change). After I answer the questions you provide, include **examples of language or phrases I can use** to positively reinforce the benefits of a healthier diet and address any concerns or misconceptions they may have. Additionally, provide **strategies to connect with their values and goals** to help them see the importance of dietary changes.

GPT Prompts: Ya Get What Ya Give ²¹



Prompt!

A communication conundrum
in context of
professional collaborations:



I'm **collaborating with a healthcare professional** from another discipline who **consistently oversteps professional boundaries** when it comes to providing dietary advice to our shared patients. This **has led to confusion and conflicting recommendations** for our patients.

Act as a **communication expert** and provide me with **strategies to address this issue** with my colleague. **How can I assert my role as the dietitian and communicate the importance of respecting professional boundaries without causing tension or conflict?** Please include **examples of language or phrases I can use** to assert my expertise and reinforce the need for clear communication and collaboration.