Artificial Intelligence:
Implications for Schools of Nursing

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Background

In this presentation we will describe how Artificial Intelligence (AI) and Large Language Models (LLMs) are currently being used by our students as they:

- Apply to our Academic programs
- Progress through their academic program
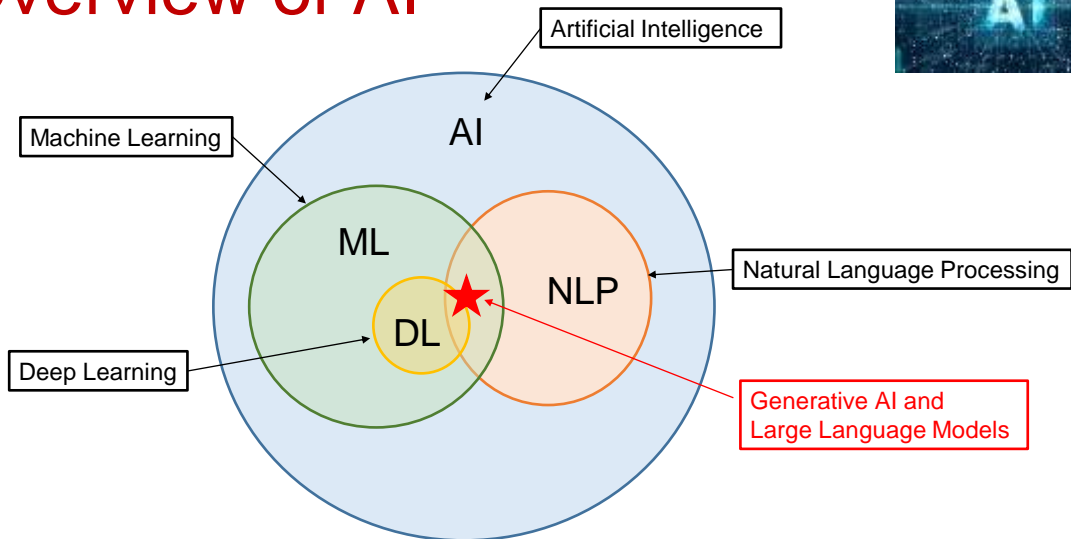- Transition to practice positions

Definitions

Terms	Definition
Artificial Intelligence (AI)	Broad term/field that involved anything to make machines smarter
Natural Language Processing (NLP)	Branch of AI, or informatics methods, focused on teaching machines to understand, interpret, and generated human language.
Machine Learning (ML)	A subset of AI (methods) that involves systems that can learn by themselves.
Deep Learning (DL)	A subset of ML that uses models built on deep neural networks to detect patterns (in the data) with minimal human involvement.
Large Language Models (LLMs) (ChatGPT)	Deep learning algorithm that can perform a variety of NLP tasks.
Generative AI	Deep-learning models that can generate high-quality text, images, and other content based on the **data they were trained** on.

Alowais, 2023

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Overview of AI

Adapted from Alowais, 2023

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Advantages and Challenges

Advantages

- Personalized Learning
- Simulation and Skills Training
- Efficiency
- Data Analytics
- 24/7 Access
- Remote Learning
- Adaptive Testing

Challenges

- Lack of Human Interaction
- Bias in AI
- Privacy Concerns
- Dependency on Technology
- Costs and Implementation
- Resistance to Change
- Ethical Dilemmas

Application – Current use

Searching for a career in healthcare information Prompt:

"As a high school senior what health care fields would be good for me to explore, provide salary and job satisfaction information"

Application Essay Prompt:

"From the perspective of a senior in high school please write a 300 word essay on why I, a BIPOC individual want to be a nurse - with a specialty emphasis on my passion for social justice ?"
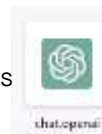
Interview question Prep:

"I am applying for nursing school at a top 10 university in the Midwest, what interview questions can I expect, what preparation would be important for me to consider"

Application– Current use

Which of these was written by ChatGPT and which was written by a student? vs

Option 1

Becoming a nurse is my calling, driven by a passion for reproductive health, a commitment to advocating for equitable care, and a desire to empower individuals and communities. As a BIPOC individual, my personal experiences have shaped my understanding of the unique challenges faced by marginalized communities and have further fueled my dedication to advancing health equity.

Option 2

My academic and personal interests gravitate toward healthcare, and specifically birth and maternal care. I want to work with individual families at the intersection of mental health and family wellness as a RN and reproductive health provider, and I want to work to implement public health measures that reduce birth complications like preeclampsia, especially in low-income communities, communities of color, and immigrant communities, where the current measures are clearly lacking. There is a flagrant need for a more holistic approach to birth and family wellness in our society.

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Application - Faculty Response

- During your interview to your program discuss uses of LLM's and ChatGPT

    "How did you use AI during the application process?"

- If you do not interview your applicants consider revising the application essay question.
    - ✓ Why have you chosen to pursue a nursing career and……
        - ✓ Explain how your experiences shaped your decision.
        - ✓ How have your studies prepared you for a career in nursing?
        - ✓ Provide a brief reflection about why you feel the <your school> will be the best fit with your degree and career plans.

- During revision if your holistic review process consider asking for specific examples

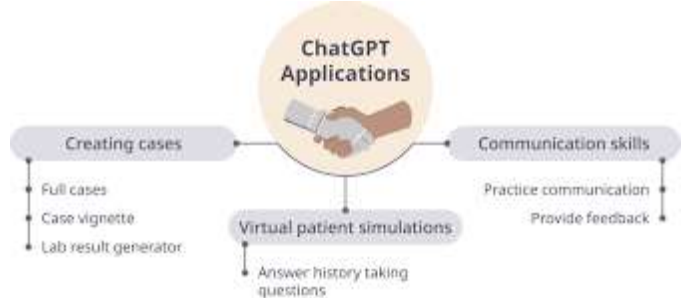SCHOOL OF NURSING
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In Academia…

- 58% of instructors are using AI in their classroom

- 80% believe AI will allow students to cheat more easily

- 77% increase in difficulty of detecting cheating

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Teaching – Current Use

- Every incoming student completes an "Orientation to Artificial Intelligence" module

- Explore the University Library site on ChatGPT and other AI tools
  - ✓ What is AI – ChatGPT
  - ✓ How does it work
  - ✓ What are the challenges and possibilities

- Review the syllabus language with students – be specific of use:
  - ✓ Prohibited use
  - ✓ Limited use, only with faculty permission (assignment or activity based)
  - ✓ Free to use

- AI - ChatGPT assignment creation

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Teaching – Faculty Response

- Identify the syllabus language you will use and sharing these guidelines with your class

- Develop meaningful ChatGPT assignments

- Utilize the 5 effective teaching strategies*
  - Strategy 1: Using AI to Produce Many Varied Examples
  - Strategy 2: Using AI to Provide Multiple Explanations
  - Strategy 3: Using AI to Develop Low-Stakes Tests
  - Strategy 4: Using AI to Assess Student Learning
  - Strategy 5: Using AI to Distribute Practice of Important Ideas

*Mollick, E. R., & Mollick, L. (2023). Using AI to implement effective teaching strategies in classrooms: Five strategies, including prompts. Including Prompts (March 17, 2023).

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Example: Patient Education - RN

Assignment: Write 1 page patient education for a 45 year old female; recent laparoscopic Cholecystectomy; history of anxiety and high blood pressure in for routine follow-up clinical appointment.

1. Student writes patient education in their own words
2. Use the same prompts and submit to ChatGPT. Copy paste response into document
3. Compare your own written patient education with the ChatGPT version.

Questions (online or small group):
- Where there items you did not cover that ChatGPT did or vice versa?
- Do you see value in using this in the clinical setting?

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Example: Patient Education - ARPN

Case: Mrs. Rodriguez, a 58-year-old woman, has recently been diagnosed with Type 2 diabetes. She is a mother of two adult children and works as an administrative assistant. She has a history of hypertension and a family history of diabetes. As an APRN student, you need to make a plan Mrs. Rodriguez about her new diagnosis and provide support as she navigates this life-altering information.

Instructions: Please develop your plan for this client who was newly diagnosed with Type 2 diabetes. Include in this plan reliable internet resources and websites. Your plan must include all aspects of physical, emotional and social needs.

Step 1: Once you have developed your plan, utilizing ChatGPT, search on:

"I am newly diagnosed with Type 2 diabetes – what is most important for me to know?

"Please provide me with a list reliable internet resources on Type 2 diabetes"

Step 2: Compare your plan and the plan developed by ChatGPT – What is missing? Are there inaccuracies, how does AI address the unique needs of this client? Search the websites provided – are they accurate, appropriate and useful for Mrs. Rodriguez ?

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Example: DNP Nursing Informatics

DNP NI Students reviewed literature and consulted with an AI Nurse expert to examine systems-level readiness for AI.

Broad scoping needs assessment and literature review (including grey literature) across four categories:

- Clinical AI, Policies, Procedures, and Guidelines for AI in Healthcare, Regulatory, and Case Studies

Themes:

- Overall articles were helpful but lacked any specificity for how an organization should use AI in the clinical setting.
- Agreement, there is a need for policy and regulation but did not mention anything specific
- Case studies were helpful to see AI in action within clinical setting but lacking theoretical approach or framework for implementation or oversight of AI methods.

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Transition to practice

Preparing for the NCLEX exam prompt:

"I am studying for the NCLEX exam, please provide me with a study plan including the timeline to complete this plan"

Searching for an RN position prompt:

"I am applying for RN positions what tips to you have in obtaining a job as a new RN?"

RN Interview preparation prompt:

" I am applying for RN positions what questions are typically asked in an interview?"

Resume Building prompt:

"What are key features of a resume that would showcase my qualifications and experiences as a new graduate nurse?"

Discussion

Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

- AI is here and now – we should value student preparation to practice in the new AI augmented clinical practice environment.

- Educate ourselves to be the leaders in academia – be in front so we are able to identify problems early (in education and clinical settings)
    - ~ *"AI will not take your job – it is those that know AI that will take your job"* (Pivot Podcast)

- Follow national trends for AI and teach our students to be stewards of technology that can impact patients and families.

References

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    Computer scientist Yejin Choi is here to demystify the current state of massive artificial intelligence systems like ChatGPT, highlighting three key problems with cutting-edge large language models (including some funny instances of them failing at basic commonsense reasoning.) She welcomes us into a new era in which AI is becoming almost like a new intellectual species -- and identifies the benefits of building smaller AI systems trained on human norms and values. (Followed by a Q&A with head of TED Chris Anderson)'

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