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Research Article

The Generative Artificial Intelligence AI and Its Applications in Social Sciences and Social Work Praxis

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Abstract

Generative AI tools and applications are emerging as a transformative force in various fields in current technological era, and their potential interventionist approach in social work is indeed promising. Although AI technologies are just starting to get attention in social work, now is the ideal time for students, practitioners, and field workers to think actively about leveraging this tool to enhance and streamline service delivery, empower vulnerable populations, and foster more equitable outcomes. Collaboration between AI experts and social workers can help ensure that these technologies are applied in ways that prioritise the well-being of individuals and communities. AI can analyse vast amounts of data to identify trends and patterns that can inform decision-making in social work. For example, it can help identify at-risk individuals or communities, allowing social workers to allocate resources more effectively. AI can help tailor interventions to individual needs. By analysing a client's history, behaviour, and circumstances, AI systems can suggest personalised strategies and interventions that are more likely to be effective. AI-powered chatbots and virtual assistants can provide 24.7 mental health support. These tools can engage with clients in a conversational manner, providing them with information, coping strategies, and referrals to appropriate services. Language barriers can be a significant obstacle in social work. AI-driven translation tools can help bridge these gaps, ensuring that social workers can communicate effectively with clients who speak different languages. AI can assist in managing caseloads more efficiently. It can help with scheduling, reminders, and tracking progress, allowing social workers to focus more on direct client interaction. AI can help optimise the allocation of resources such as shelters, food banks, and job training programs. By predicting demand and assessing effectiveness, it can ensure that resources are distributed where they are needed most. AI can provide ethical guidance by offering recommendations based on established ethical principles and legal frameworks, helping social workers navigate complex ethical dilemmas. So, engaging with the praxis of professional social work in collaboration with the generative AI has the scope of some productive outcomes for the betterment of modern society.

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INTRODUCTION

The rapid adoption of ChatGPT after its release in November 2022, with over one million subscribers within a week, underscores the significant interest and potential impact of generative AI in various fields, including education. The ability of ChatGPT to perform remarkably complex tasks is a testament to the advancements in AI technology, and it has the potential to transform various aspects of education. However, Naughton (2023) maintains that ChatGPT is simply a tool that augments human capabilities. The future of education may involve a hybrid approach, where traditional teaching methods and AI-enhanced learning coexist, and provide students with a well-rounded education.

The 21st century has witnessed a significant transformation in educational practices, primarily driven by advances in technology, including artificial intelligence. The integration of technology in education has had a profound impact on teaching and learning, shaping the way we acquire knowledge and interact with educational content. Petersen's reference to this phenomenon in 2021 is reflective of the ongoing evolution in the field of education (Petersen, 2021). Technology, particularly AI, has enabled the development of digital learning tools, such as online courses, educational apps, and intelligent tutoring systems. Recent progress and expansion in machine learning have led to a more sophisticated, innovative technology for digital content generation, like generative artificial intelligence (AI) (Hu, 2022). These tools provide students with personalised and interactive learning experiences. Technology has made education more accessible, allowing learners to access educational resources and courses from anywhere in the world. This has been particularly important during times of global challenges, such as the COVID-19 pandemic. AI, in particular, has enabled personalised learning experiences. Educational platforms can adapt to individual students' needs and learning styles, providing tailored content and support. These models are even able to engage customers in human-like conversation, such as customer-service chatbots or fictional characters in video games (Aydin & Karaarslan, 2022; Jovanović, 2022; Korngiebel et al., 2021; Pavlik, 2023).

Technology also provides support for educators. AI-driven tools can assist teachers in managing classrooms, assessing student performance, and developing more effective teaching strategies. The adoption of technology in education has raised challenges related to equity, digital literacy, privacy, and the potential for bias in AI systems. These issues require careful consideration and regulation.

Mastering AI tools like ChatGPT can offer MSW (Master of Social Work) students a variety of career advantages in the field of social work. AI tools can significantly streamline administrative tasks, such as case management and data analysis. This allows social workers to spend more time on direct client interactions and addressing complex social issues. AI can help reduce errors in data analysis and resource allocation, making social work practices more accurate and effective. This, in turn, can lead to better outcomes for clients. AI tools can provide MSW students with a valuable skill set that enhances their effectiveness as social workers. It not only improves their own career prospects but also contributes to the overall advancement of social work practice by leveraging technology for better outcomes and greater efficiency.

To make the most of AI tools, social workers should have a deep understanding of how AI models like ChatGPT function. This includes knowing the data they were trained on, their limitations, and the potential applications in a social work context. Professionals must be aware of the strengths and weaknesses of AI tools. This understanding allows them to make informed decisions about when and how to use these tools in practice. Proficiency in AI should be accompanied by a strong grasp of the ethical issues surrounding AI usage. This includes considerations of bias, fairness, and privacy, as well as the potential impact on vulnerable populations. The Dunning-Kruger effect, which refers to individuals with limited knowledge overestimating their abilities, is a real concern in AI usage. Professionals need to recognise their limitations and seek ongoing training and support to avoid overconfidence and its potential negative consequences. AI is a rapidly evolving field. Social workers should be committed to ongoing learning and professional development to stay current with advancements in AI technology and their implications for social work practice. The recognition of the need to incorporate AI technology into the social work curriculum is an important step in preparing future professionals for the evolving landscape of social work practice. The article's guidance on essential knowledge, skills, and practices for working with generative AI is a valuable stopgap measure until the curriculum can be fully adapted. This expertise can open doors for career growth, professional recognition, and collaboration with multidisciplinary teams to effect lasting, positive change for individuals and communities.

How artificial intelligence works

In the rapidly changing landscape of today's technological environment, social work students must develop an understanding of artificial intelligence (AI), including large language models like ChatGPT.

1. **Informed Decision-Making:** Understanding AI tools allows social work students and professionals to make informed decisions about when and how to use them in their practice. They can assess situations and determine whether AI can enhance their work, leading to more effective interventions.
2. **Responsible and Ethical Usage:** Proficiency in AI equips social workers with the knowledge needed to use these tools responsibly and ethically. This includes being aware of potential biases, privacy concerns, and ethical dilemmas that may arise when integrating AI into practice.
3. **Enhancing Core Skills:** AI is a tool that can complement the core skills of social workers, such as empathy, active listening, and problem-solving. Understanding AI enables professionals to integrate their content expertise and interpersonal skills with technology, resulting in more comprehensive and client-centred services.

4. **Efficiency and Accuracy:** AI can significantly increase the efficiency and accuracy of tasks like data analysis and resource allocation. This allows social workers to focus on their primary role of providing direct support to clients.
5. **Adaptability:** The ability to understand and work with AI models positions social work students as adaptable professionals who can thrive in a technologically driven environment. They can respond to the changing needs of clients and organisations effectively.
6. **Client-Centred Approach:** AI can be used to gather and analyse data to better understand client needs and track progress. Social workers who understand AI can use this information to tailor interventions to individual clients, improving outcomes.
7. **Collaboration:** Proficiency in AI tools can also enhance collaboration with other professionals, such as data scientists, healthcare providers, or educators. These interdisciplinary collaborations can lead to more holistic and effective support for clients.

The Role of AI in Social Work

- **Predictive modelling:** Predictive modelling, powered by AI algorithms, is a valuable tool in the field of social work for several reasons. AI algorithms can analyse vast amounts of data from various sources, including social service records, healthcare data, and demographic information. This enables social workers to gain data-driven insights into the factors that contribute to social problems. Predictive modelling can help social workers allocate resources and interventions more efficiently.
- **Decision support:** AI-powered decision support tools offer numerous advantages for social workers in making informed and effective decisions. AI-powered tools can provide social workers with real-time access to a client's history, needs, and outcomes. This enables social workers to have the most up-to-date information when making critical decisions. These tools can analyse vast amounts of data from various sources, including medical records, social service history, and other relevant information. This comprehensive data analysis allows for a holistic understanding of the client's situation.
- **Mental Health Services:** AI-powered tools can be used to help facilitate better decisions through providing real-time information about a client's history, needs, and outcomes (ChatGPT in Spooner, 2023). Virtual therapy assistants powered by AI, particularly large language models, have the potential to be a valuable addition to the field of social work, especially within the domain of mental health services. Virtual assistants can help clients practice coping strategies and acquire new skills between therapy sessions. This can contribute to better outcomes and faster progress. Virtual assistants can provide psychoeducation on various mental health issues, reducing misconceptions and stigma associated with mental health problems.
- **Program Evaluation:** Program evaluation is a critical component of social work, and AI-powered tools, including large language models, can be instrumental in improving the efficiency and effectiveness of this process. AI can analyse large volumes of qualitative and quantitative data quickly, saving social workers significant time and effort. This allows for a more comprehensive analysis and a faster turnaround of evaluation results. AI can be especially valuable in analysing qualitative data, such as interview transcripts and focus group responses. It can identify themes, patterns, and sentiments in the data, which can be time-consuming when done manually. AI can synthesise data from various sources, making it easier for social workers to combine and analyse information from different assessments, surveys, and qualitative feedback.
- **Administrative tasks:** AI automation in social work offers several advantages, particularly in streamlining administrative tasks and allowing social workers to concentrate on more meaningful and complex aspects of their work. AI can handle routine, time-consuming tasks like appointment scheduling, paperwork completion, and progress tracking. This saves social workers a considerable amount of time, allowing them to allocate more of their day to critical activities. By automating administrative duties, social workers can devote more time and attention to building relationships with clients. Social work often involves multidisciplinary collaboration with healthcare professionals, educators, and other specialists. Automation of routine tasks frees up time for social workers to engage in effective collaboration, ensuring a holistic approach to client care. Automating repetitive tasks can help prevent burnout by reducing the administrative burden, allowing social workers to maintain their well-being and effectiveness in the long term.
- **Community Organising:** Generative AI can indeed play a crucial role in supporting community organising efforts by enhancing communication, outreach, and engagement. AI can assist in generating high-quality written content for outreach materials, such as newsletters, social media posts, and press releases. This ensures that messages are clear, persuasive, and well-crafted. AI-driven social media tools can help manage and schedule posts, engage with followers, and analyse data to improve social media strategies, thus expanding the reach of community efforts. Chatbots powered by AI can engage with community members in real time, answering questions, providing information, and collecting feedback, enhancing communication and accessibility. AI can analyse data from community surveys, feedback forms, and social media interactions to gain insights into the community's needs, concerns, and preferences.
- **International Social Work:** Generative AI, particularly large language models, has the potential to be a transformative tool in international social work. The challenges of language barriers and cultural differences can be significant hurdles in effectively serving diverse populations. Large language models can provide real-time language translation, allowing social workers to

communicate with individuals who speak different languages. This facilitates the sharing of crucial information and support services. AI models can be trained to generate culturally-sensitive messages and communications. This is essential in ensuring that interactions are respectful and appropriate, even when social workers are not intimately familiar with the cultural norms of the individuals they are serving. AI can assist in training social workers in cross-cultural competencies, equipping them with the skills to work effectively with diverse populations.

- **Chatbot:** AI-powered chatbots in social work can play a valuable role in extending support and counselling to individuals who may face barriers to accessing traditional therapy or may prefer an alternative approach. Chatbots are accessible 24/7, making support available to individuals in need at any time. This can be particularly crucial for those facing crises or emotional distress. Chatbots offer a level of anonymity that can encourage people who are hesitant or stigmatised about seeking help to open up and share their concerns without the fear of judgment. The use of chatbots can help reduce the stigma associated with seeking emotional support, as it can feel less intimidating than traditional therapy sessions. Chatbots can handle multiple conversations simultaneously, making them a scalable solution to address the growing demand for emotional support services. Chatbots can be designed to provide preventative support by identifying early signs of distress or crisis and intervening appropriately.

Chatbots are most effective when used as a complement to, rather than a substitute for, traditional therapy and counselling services. Moreover, ethical considerations, privacy protection, and ongoing oversight are crucial when implementing chatbots in the field of social work to ensure responsible and safe use of this technology.

The insights from Shoaib (2023), Molala, and Mbaya (2023) align with the overarching theme that AI has the potential to be a significant force for positive change in the field of social work. The future of social work is closely intertwined with AI, and there is a compelling case for the profession to embrace AI technologies to enhance its efficacy. While AI holds great promise, social workers must be aware of the potential risks and challenges associated with its use, such as bias, privacy, and ethical considerations. This awareness is necessary to ensure that AI is employed in a fair, unbiased, and human-centred manner. These perspectives reflect the dual nature of AI in social work – a powerful tool with the potential to improve the profession's efficacy, while also presenting challenges and ethical considerations that require careful attention. The future of social work, as described by Molala and Mbaya, is one where AI and human expertise work in tandem to provide the best possible support to those in need. AI technologies evolve rapidly, and users should engage in ongoing learning and development to stay current with the latest advances in AI tools, techniques, and ethical considerations (Victor et al., 2023).

CONCLUSION

As we've explored in this introductory article, generative AI, specifically large language models, can fundamentally transform social work students' educational experience and enhance the practice of professionals in the field. From mental health services and program administration to policy analysis, program evaluation, and community organising, AI technologies offer innovative tools and resources that can augment the capabilities of social workers. To effectively utilise AI in social work, we must focus on combining content expertise with technical skills. While AI-powered tools can perform routine tasks more efficiently than social workers, it is crucial to understand that AI cannot replace social workers. Instead, AI can assist social workers by handling mundane tasks and freeing their time to focus on issues requiring human intervention. In other words, social workers have unique skills that AI lacks. Students and professionals alike must approach these technologies responsibly and ethically. Developing a deep understanding of large language models, their training data, and limitations, and honing essential skills like prompt engineering can help users harness the power of AI while mitigating potential inaccuracies and biases. Disappointment with AI models often arises from using them for tasks they were not trained to perform, such as researching highly specialised topics (James et al., 2023; Perron, 2023b).

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