Introduction to Sociology Group Assignment 2:

Evaluating the Role of AI in Education

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I. Executive Summary

Over the years, the field of Artificial Intelligence (AI) has been rapidly changing, bridging the gap between curriculum theory and classroom practices. The emergence of the use of AI in the educational field provides new opportunities and challenges for teaching and learning. Currently existing AI applications have significant impacts on preparing students with the knowledge and skills necessary in diverse ways. While institutions embrace AI as a technology to bring efficiency and stimulate economic development, the integration of AI into teaching proposes challenges for both teachers and students such as cheating, privacy invasion, and lack of human interaction. In this rapidly changing world, it is crucial to understand the beneficial use and challenges of AI have significantly evolved the way students learn and what the recommendations are to mitigate the possible risks. For the Department of Education, it is important to set regulations and policies to set boundaries of the use of AI in school, protect the data privacy of users, and understand the limitations of AI compared to the uniqueness of humans.

II. Research: How AI is Currently Used in Schools

Over the years, curricula have evolved significantly over the years with technology and AI integration. The use of technology such as digital platforms and online resources in the educational field has enhanced access, broadening knowledge. Advancing further, AI refers to "the ability of computers and machines to perform tasks that require human intelligence, such as learning, problem solving, decision-making, and language understanding" (Marais, E., Marais-Botha, R., & Coertzen, F., 2024). AI takes a step further and provides personalized learning paths, automation, and actionable insights from interactive tools. First, teachers use AI automation tools for administrative tasks, assessments, evaluation, etc. In 2021, Chai, C. S., Lin,

P.-Y., Jong, M. S.-Y., Dai, Y., Chiu, T. K. F., and Qin, J. explained that AI expedites time-consuming tasks for teachers like grading, attendance, and performance tracking, reducing their workload and letting them focus more on teaching and student interaction. In addition, with real-time feedback and data-driven insights, AI is able to draw attention to which topics and contents of the course need to be improved. Recognizing lecturers might not always be aware of the gaps in their educational materials, "AI analysis would showcase this report to lecturer or parents then appropriate action can be taken by lecturer to scaffold learning" (Fahimirad, M., & Kotamjani, S. S., 2018).

AI provides extra learning support for students such as intelligent tutoring systems and assists them with homework. For example, Fahimirad, M. and Kotamjani, S. S. presents Coursera, an online course provider, which evaluates students' responses to a problem. To ensure all students are building the same conceptual basis, "Coursera found that a large number of students submitted the incorrect answer to a homework, the teacher is alerted through the system, and the system gives prospective students a message to offer clues to the right answer" (Fahimirad et al., 2018). With additional tutoring systems, students are able to study at their own pace, preferences, and styles and increase their knowledge retention in their own time as well. In addition, AI also acts as new tools to enhance students' engagement by integrating virtual reality and augmented reality into teaching. Students are more willing to learn artificial intelligence if their ability to learn AI is fostered and if they understand the benefits of learning AI (Chai et al., 2021). AI used in the field of education automates various aspects of teaching bringing both benefits and challenges. Balancing these benefits and risks is essential to ensure AI's positive impact in education on every level.

III. Beneficial Use of AI for Teachers and Students

Currently existing AI applications benefit how institutions teach and the way students learn by providing time-efficiency, engagement, development, and personalization. For teachers specifically, automated assessment, feedback, and analysis saves time, decreases workload, and brings awareness if pinpoint where the students' weakness lies. Teachers can focus on building connections with students and catering to their students' needs instead of completing automated, repetitive tasks such as grading assignments and keeping track of attendance that AI has the ability to take care of. Another benefit of AI is its ability to provide data-driven insights. With this ability, AI can make note of recurring patterns which can help teachers understand where students need help or promote more engagement. Additionally, Supportive AI tools help instructors engage more with students. According to Fahimirad, M., and Kotamjani, S. S. in 2018, "classes can be tailored according to students' profile and students' interests can be stimulated by exposing them to various content and courses." For students, AI also provides many benefits such as limitless access to academic support through various platforms and provides students with more consistent opportunities to engage with materials they don't understand. Similarly, AI gives students access to immediate feedback regarding their work and allows them to implement corrections instantaneously.

The AI-driven education system also provides exceptional personalization for the students, catering to student abilities, comprehension levels, and learning styles. From a teacher's perspective, an AI-driven education system encourages teachers to provide personalized instruction and individualized feedback that are unmatched by traditional higher education teaching procedures (Marais et al., 2024). For students, Heeg, D. M., and Avraamidou, L. explains that "AI-driven tools educational initiatives can be tailored to the different learning preferences and cognitive abilities of this population, promoting engagement and knowledge

retention.” Specifically, for students with disabilities, the adaptability of AI systems enables personalized platform and learning pathways where students who need extra help have the ability to utilize personalized lesson plans at their own pace on their own time. This is very beneficial in addressing students with challenges by accommodating and delivering tailored assistance (Jaramillo, J.J., Chiappe, A., 2024). Looking deeper into the workings of the complex-computing system, the brain-computer interface can decode the brain activity which makes the “communication easier among those who have disabilities associated with motor function” (Fahimirad et al., 2018).

This innovative technology has helped the education system prosper more than ever. Although there is little research currently, previous studies on the use of artificial intelligence in grades K-12 have been focused on external tools like AI tutoring systems, rather than through the learning of AI itself (Chai et al., 2021). AI within education can be a beneficial tool that can aid students and teachers with their work and set students up for success for college by providing students with tools to constantly seek new knowledge, innovative ideas, feedback, and technical literacy. As AI excels in providing data-driven insights and custom plans, disciplines involving research, tech companies, healthcare, and media may significantly benefit from using AI; however, disciplines across the board have the ability to utilize the benefits AI provides whether through feedback or innovative ideas (Jin, Q., Chen, F., Zhou, Y., 2024). Despite this, AI has also come with its fair share of risks and shortcuts, putting doubt in the mind of higher-education officials and students alike.

IV. Challenges: Use of AI for Teachers and Students

While AI provides students and teachers with much assistance, its benefits also come with challenges. Specifically, AI when used with students can often facilitate cheating and a

reduction of the student's mind to think creatively and for itself. Furthermore, a dependence on AI can perpetuate misinformation due to the assumption that AI is always perfect. It raises concerns about data privacy, security, and potential bias, as these systems rely primarily on user data and may offer unsolicited, false or negatively influenced information. Study from Jin, Q., Chen, F. and Zhou, Y. in 2024 tested the proficiency of GPT-4V in medical multiple-choice questions; as a result, "human physicians with the open-book setting achieved a significantly higher score than GPT-4V." AI has limitations and has the possibility of being biased due to the information the AI program has been fed.

Teachers are also capable of falling victim to the previously stated challenges, but in addition the growth of AI has been said to jeopardize the teaching profession with its human-like abilities to complete tasks more efficiently (Luckin et al., 2022). The use of AI also comes with invasion of privacy and security concerns due to overcollection of user data and behavior tracking. Regarding social impact, children with disabilities could experience feelings of isolation due to its lack of interactive aspect. In 2020, Kwan, C., Gitimoghaddam, M., and Collet, JP. stressed, children are turning to the internet to provide them with a simple solution, which over time and with increase in use, can lead to lack of social skills and depression. The lack of interaction with peers to ponder over and create solutions to problems can easily create the effects of isolation which school collaboration prioritizes. Further disadvantages of AI are that its benefits are limited to a certain community. Low-income communities and underdeveloped countries who do not have access to technology are unable to reap the benefits and knowledge that these online tools provide creating a further education divide between privileged and marginalized communities. Bantwini B. D., addresses that in South Africa and other countries, "Some reforms have been triggered by the evaluation results of the Trends in International

Mathematics and Science Study (TIMSS) while others result from a lack of satisfaction within the countries with students' performance." This can widen the gap between socioeconomic status and create greater inequality on the global scale.

In using AI, ethical implications should be considered. Specifically, users should be wary of potential biases that platforms embed in their messaging as well as the user themselves should be considerate of using AI ethically by paying credit when credit is due and using these platforms with honesty and integrity as to not cheat or steal ideas. Although AI learning's objective was to enhance skills and development of students, it could have an opposite effect due to unethical behaviors and reliance on technology for knowledge. In entirety, AI provides many groundbreaking and innovative resources to teachers and students; however, the negative implications of AI towards social impact include bias, discrimination, global inequality, and mental health.

V. Case Study - Strengths and Weaknesses Between Our Work and AI Output

Group Work Strengths:

Our group used clear and relatable examples, like how algorithms push harmful beauty standards, making the issue easier to understand and connect to real-life situations. We provided strong connections between disparities like gender and class with examples such as women spending money on beauty products or lower-income groups having less access to technology. These examples showed how social media impacts different groups in specific ways. Our focus on comparison culture was effective in explaining how people are influenced by what they see online.

We also included strong statistics, like how 95% of teens use social media and how this links to body dysmorphic disorder (Hemendinger, E., 2024). These numbers made our arguments

feel well-supported. The slides explained disparities across race, class, and gender in detail, showing how social media adds to these problems. For instance, we discussed how women are influenced by beauty product ads and how lower-income groups feel excluded due to lack of access. Finally, our solutions, like encouraging mindfulness and limiting screen time, were simple but effective in addressing social media's effects on mental health.

Group Work Weaknesses:

Some areas, like disparities for people with disabilities, weren't explored in enough detail and lacked specific examples. The focus on comparison culture was repeated across several slides, which made the presentation feel less creative at times. While the ideas were clear, they didn't always feel innovative.

We could have done more research in some areas. For example, while we mentioned disparities for people with disabilities, we didn't provide enough real-life examples to make the issue clear. Similarly, our solutions, while practical, didn't look at bigger challenges like how to fund media literacy programs or enforce content warnings. We mostly focused on the direct impacts of social media without exploring how issues like race and class overlap.

AI Output Strengths:

The AI response introduced new ideas, like using Impression Formation Theory instead of Social Comparison Theory, to explain how social media affects self-perception. This gave a different way of understanding the issue, rather than focusing only on comparisons. It also explored bigger issues, like how algorithms target young people and take advantage of their vulnerabilities.

The response highlighted how cultural norms show up in digital spaces, adding a new layer to the analysis. The solutions were focused on fixing the causes of the problem, like making algorithms more transparent and improving accessibility for disabled users. The response also suggested unique ideas, such as peer-led mental health groups, which brought a new approach by emphasizing community support—something not covered in our slides.

AI Output Weaknesses:

The AI response didn't use Social Comparison Theory, which connects more directly to social media's impact on self-image. It also included fewer statistics, which made some sections feel less supported by evidence. While the ideas were creative, AI didn't include real-world examples like we did, which made our work feel more relatable.

Some solutions, like inclusive content policies, lacked explanations about how they would be enforced. This made them feel more abstract compared to our simpler, more practical suggestions. Also, the AI response didn't focus on individual actions as much, which is an important part of addressing social media's impact. While the systemic ideas were strong, they might seem harder to achieve compared to the practical steps we suggested in our presentation.

VI. Recommendations for Department of Education

The current use of Artificial Intelligence provides new opportunities to explore topics and seek assistance. It has both positive and negative implications. Academics and teachers recognize that AI is a beneficial tool, and when used correctly, has the power to expand human abilities and the education environment as a whole. When not used correctly, challenges with AI can include data privacy concerns, as AI in schools requires student information to function effectively. Schools can effectively and responsibly implement AI in schools by establishing clear ethical

guidelines for both students and teachers. Strict disciplinary actions for unethical behaviors, such as plagiarism and cheating, are necessary. It is important to motivate students to have integrity and feel the desire to learn the knowledge themselves, instead of relying on AI continuously. Limitations on preventing the overuse of AI are also important so AI is not replacing the work done by students but acts as a supportive tool.

As AI is integrated into daily activities, it is important to balance between the use of technology and maintaining the social aspect the traditional school environment can provide. Interacting with peers, collaborative work projects, blended learning opportunities, and maintaining teacher-guided discussions. As mentioned from the Case Study, AI lacks deeper contextual understanding and emotional intelligence. Without existing data, AI is unable to adapt to a new situation without being trained, lacking intuition.

Many higher learning education systems have felt it is wiser to explore AI to find out how it can improve teaching and curriculum, rather than trying to remove a tool that is potentially valuable in some cases. “Artificial intelligence (AI) is defined as computing systems, which engaged human-like processes such as learning, adapting, synthesizing, self-correction and the use of data for complex processing tasks” (Fahimirad, M., & Kotamjani, S. S., 2018). Like humans, AI also has to adapt and be trained consistently in order to enhance and function in a beneficial way.

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VIII. Appendix A - AI Output for Assignment 1

Social Media's Influence on Body Image and Mental Health

Background Information and Context

The rapid evolution of social media has reshaped human interaction, communication, and self-perception. Platforms like Instagram and TikTok have created virtual spaces where individuals are bombarded with idealized portrayals of beauty, success, and lifestyles. These

constant comparisons can contribute to growing rates of mental health issues, such as low self-esteem, body dissatisfaction, and anxiety. What sets social media apart from traditional media is its participatory nature; users do not merely consume content—they engage with it, shaping their own online identities in the process. This duality of creation and consumption intensifies the emotional and psychological impacts, particularly for younger users, who are more impressionable.

Disparities in Social Media's Impacts

1. *Racial Disparities*

Social media frequently reflects the racial biases present in society. Content curation often favors Eurocentric beauty ideals, leaving little room for diverse representations. This creates an exclusionary digital environment for people of color, who may struggle to see their identities valued or celebrated online.

2. *Economic Disparities*

The digital divide exacerbates the impact of social media. Wealthier individuals can afford high-quality devices and faster internet, giving them a more seamless and curated experience. Conversely, those from lower-income backgrounds may experience feelings of inadequacy as they are exposed to aspirational content without access to the resources that make such lifestyles attainable.

3. *Gender Disparities*

Gendered expectations are amplified on social media. Women often encounter pressure to conform to beauty standards, while men are subjected to norms emphasizing physical strength and stoicism. Nonbinary and transgender individuals face both invisibility and hostility, as platforms often fail to provide safe and inclusive spaces for gender diversity.

4. *Sexuality Disparities*

LGBTQ+ individuals experience a mixed reality on social media. While platforms allow for community-building and visibility, they also expose users to harassment, discrimination, and hate speech. These challenges compound the mental health struggles already prevalent within this demographic.

5. *Disability Disparities*

Social media remains largely inaccessible to individuals with disabilities, from a lack of alt-text for visual content to poor compatibility with assistive technologies. The absence of representation further alienates disabled users, reinforcing feelings of isolation and social invisibility.

Three Factors Contributing to Disparities

1. *Platform Prioritization of Engagement*

Platforms prioritize engagement metrics, such as likes and shares, driving the visibility of content that generates strong reactions. Unfortunately, this often includes heavily filtered, sensational, or idealized imagery, perpetuating unrealistic standards and marginalizing authentic or diverse content.

2. *Cultural Norms Embedded in Digital Spaces*

Social media mirrors societal values, often reinforcing dominant cultural norms. These spaces promote specific ideals of beauty, success, and desirability that exclude marginalized communities, perpetuating a sense of "otherness."

3. *Youth-Oriented Algorithms*

Many platforms are designed with younger audiences in mind, creating environments that exploit

adolescent vulnerabilities. The algorithms deliver a steady stream of curated content, increasing exposure to harmful comparisons and diminishing self-worth.

Application of Theory: Impression Formation Theory

Impression Formation Theory examines how individuals develop perceptions of others and themselves based on available cues. Social media heightens this process by presenting curated and idealized profiles that users interpret as authentic representations. This distortion influences how people evaluate their own lives, often resulting in a negative self-image. Unlike Social Comparison Theory, this framework emphasizes the role of fragmented information in shaping perceptions, making it particularly relevant to social media's visual and selective nature.

Proposed Solutions

1. *Inclusive Content Policies*
   - **Plan:** Social media platforms should enforce policies that ensure greater diversity in the content they promote. This could include spotlighting creators from underrepresented groups and discouraging overly edited or idealized content.
   - **Impact:** Expanding representation would help create a more inclusive environment and reduce the pressure to conform to narrow standards.
2. *Accessible Technology Development*
   - **Plan:** Platforms must prioritize accessibility, introducing tools like voice-to-text features, better alt-text functionality, and customizable user interfaces.

- **Impact:** These changes would empower disabled individuals to engage with content more equitably, fostering a stronger sense of community.

3. *Educational Interventions*

- **Plan:** Schools should implement programs focusing on critical digital literacy, teaching students how to evaluate social media content and recognize manipulative techniques.
- **Impact:** By equipping students with these skills, educational efforts can mitigate the negative effects of early social media exposure.

4. *Mental Health Advocacy Campaigns*

- **Plan:** Collaborate with mental health organizations to launch campaigns promoting self-acceptance, mindfulness, and mental well-being. These campaigns could also encourage breaks from social media to reduce dependency.
- **Impact:** Promoting awareness and self-care strategies would help users navigate social media more healthily.

Conclusion

Social media's impact on body image and mental health underscores the urgent need for systemic change. By addressing disparities through inclusive policies, technological innovation, education, and advocacy, society can create a digital ecosystem that uplifts rather than diminishes its users. These interventions are essential for fostering resilience and well-being in an increasingly connected world.