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FROM PEERS TO PROMPTS: A DATA-DRIVEN ANALYSIS OF SOCIAL CONNECTEDNESS IN MODERN IT EDUCATION

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***Abstract*:** The rapid integration of generative artificial intelligence (AI) tools into higher education has transformed how students seek information, complete tasks, and engage with their academic environments. This study investigates the relationship between AI tool usage and social connectedness among undergraduate Information Technology (IT) students in the Philippines. Grounded in social interdependence theory and academic belonging literature, the study examines whether increasing reliance on AI platforms such as ChatGPT, GitHub Copilot, and Google Gemini is associated with changes in students' help-seeking and peer interaction practicesin educational contexts. Using a descriptive quantitative design and cross-sectional survey method, data were collected from 45 IT students enrolled in a higher education institution in Cebu, Philippines. The research instrument, a researcher-developed questionnaire administered via Google Forms, measured four constructs: AI usage frequency, peer collaboration practices, learning preferences, and perceived impact of AI on social connectedness. Descriptive statistics including frequency counts, percentages, and weighted means were used to analyze the data. Results revealed that while students reported generally high levels of social connectedness (M = 5.46), academic interaction patterns showed a moderate composite mean (M = 3.85), with over 64% preferring to solve problems independently. Approximately 40% reported consulting AI instead of peers when seeking academic help. These findings suggest a tension between perceived social belonging and actual peer engagement behaviors. Although AI tools are viewed positively for academic performance and independent learning, their substitutive use may quietly erode the human connections integral to effective learning communities. The study recommends intentional pedagogical strategies that position AI as a complement to, rather than a replacement for, peer collaboration in IT education.

***Keywords*:** Artificial intelligence, social connectedness, IT education, peer learning, academic belonging, human-computer interaction, educational technology

INTRODUCTION

The classroom, whether physical or virtual, functions not only as a site of instruction but also as a social environment where students develop academic relationships, professional identity, and collaborative skills.In computing and information technology education, peer collaboration has been shown to enhance not only academic outcomes but also long-term career readiness (Hundhausen et al., 2013). Pair programming, group debugging sessions, and informal hallway conversations are not incidental to learning; they are constitutive of it.

Nevertheless, this ecosystem is about to go through a change that could be very disruptive. Generative AI tools like ChatGPT, GitHub Copilot, Google Gemini, and others have added a new type of discussion companion to the learning environment. These tools are different from textbooks and static online resources because they respond in natural language, adapt to follow-up questions, and give immediate, seemingly authoritative advice. For students struggling with a debugging error at 2:00 a.m. or unsure how to start a data structures assignment, these tools can offer something no classmate or professor can: immediate help, with no waiting.

The investigation this study discusses is not the utility of AI tools, evidence indicates that they are useful (Kasneci et al., 2023), but the potential social and relational impact that may arise from how they are utilized in educational contexts. Utilizing social interdependence theory (Johnson & Johnson, 1989) and the academic belonging literature (Strayhorn, 2012), we propose that frequent reliance on AI tools for academic help may be associated with changes in students' help-seeking and peer interaction practices,with potential implications for the social connections that underpin academic motivation and professional socialization.

This concern is not merely theoretical. Anecdotal reports from IT faculty describe students who prefer typing a question into a chatbot over asking a classmate, who submit assignments with minimal peer consultation, and who express reduced interest in collaborative projects. If AI use is associated with shifts in help-seeking behavior, the implications extend beyond individual academic performance to encompass professional culture, team dynamics, and the social fabric of technical communities.

This paper presents empirical evidence bearing on these questions. We begin by situating the study within existing literature on collaborative learning in computing education and the emerging discourse on AI's social effects. We then describe our research design, present quantitative findings, and discuss the theoretical and practical implications of our results.

OBJECTIVES OF THE STUDY

In an era where Information Technology (IT) students increasingly lean on artificial intelligence for their coursework, this study explores how that reliance affects their human connections. We want to understand if frequent AI use changes how students interact with their peers, participate in group learning, or feel a sense of community within their program. Additionally, we aim to see how AI shapes the way students seek help and stay engaged with their studies.

Specifically, this study aims to: (1) assess the level of AI tool usage among IT students; (2) determine the level of social connectedness, academic engagement, and sense of belonging; (3) explore patterns between AI tool usage and social connectedness; (4) describe patterns of AI usage, peer collaboration, academic engagement, and perceived sense of belonging among IT students; and (5) identify patterns of help-seeking behavior among students with varying levels of AI reliance.

MATERIALS AND METHODS

Research Design

This study employed a descriptive quantitative research design to examine the patterns ofartificial intelligence (AI) usage and social connectedness among Information Technology (IT) students. The descriptive approach was deemed appropriate as it allows for the systematic collection and analysis of data to describe patterns, behaviors, and perceptions without manipulating variables.

The study specifically utilized a cross-sectional survey method, where data were collected at a single point in time to capture the current state of AI usage and peer interaction among students. This design is widely used in educational research to identify trends and describe associations between variables (Creswell, 2014). It is important to note that the cross-sectional nature of this study does not allow for the establishment of causal relationships or changes over time; the findings are therefore exploratory and descriptive in character.

Participants and Sampling Technique

The participants of the study consisted of 45 undergraduate students enrolled in the Information Technology program of a higher education institution in Cebu, Philippines.

A convenience sampling technique was employed in selecting the respondents. This method was chosen due to accessibility and the availability of participants who are actively engaged in IT-related coursework and exposed to AI tools. Although convenience sampling limits generalizability, it is considered acceptable in exploratory and descriptive studies where the primary objective is to identify emerging patterns (Etikan et al., 2016).

Research Instrument

The primary instrument used in this study was a researcher-developed questionnaire administered via Google Forms, which enabled efficient data collection and organization of responses in a digital format. The questionnaire consisted of four sections: AI usage frequency, peer collaboration practices, learning preferences (AI vs. peer interaction), and perceived impact of AI on social connectedness.

Each section contained multiple items rated on a six-point Likert scale ranging from 1 (Strongly Disagree/Never) to 6 (Strongly Agree/Always). The use of a six-point scale was intentional to avoid a neutral midpoint and to encourage directional responses. The instrument was reviewed by faculty experts in educational research and information technology prior to administration. A pilot test was conducted with a small group of IT students not included in the main study to assess item clarity and initial reliability. Internal consistency was examined using Cronbach's alpha, and items with low item-total correlations were revised accordingly before the final administration.

Data Collection Procedure

Data collection was conducted entirely online using Google Forms. The survey link was distributed to eligible respondents through digital communication channels such as messaging platforms and academic groups.

Participants were first presented with an informed consent form, outlining the purpose of the study, confidentiality assurances, and their rights as respondents. Only those who agreed to participate were allowed to proceed with the questionnaire. Responses were collected over a specified period, and all completed forms were automatically stored in the platform's database, ensuring accuracy and minimizing data entry errors.

Data Analysis

The collected data were analyzed using descriptive statistical techniques, specifically frequency counts, percentages, weighted means, and ranking. Frequency counts were utilized to determine the distribution of responses, while percentages were computed to provide a relative comparison among categories. Weighted means were calculated to determine the overall level of agreement per item and per construct. Ranking was applied to identify dominant trends and prioritize responses based on their level of occurrence, facilitating a more comprehensive interpretation of the data.

Items were rated using a six-point Likert scale. The interpretation ranges were: 1.00–1.80 = Very Low, 1.81–

2.60 = Low, 2.61–3.40 = Low/Moderate, 3.41–4.20 = Moderate, 4.21–5.00 = Moderate/High, 5.01–5.80 = High, and 5.81–6.00 = Very High.

Ethical Considerations

This study strictly adhered to established ethical standards in the conduct of research involving human participants. Prior to data collection, respondents were provided with a clear explanation of the study's purpose, procedures, and scope through an informed consent form. Participation was entirely voluntary, and respondents were informed of their right to decline or withdraw from the study at any time without any form of penalty.

To ensure confidentiality and anonymity, no personally identifiable information was collected in the survey administered via Google Forms. All responses were treated with strict confidentiality and were used solely for academic and research purposes. Data collected were securely stored and accessed only by the researchers. The study also ensured that there was no harm, risk, or discomfort posed to the participants during the data collection process. Additionally, the research complied with institutional guidelines and ethical principles, including respect for persons, beneficence, and justice.

RESULTS AND DATA ANALYSIS

This section presents the quantitative results derived from the Google Forms survey and analyzes the data using descriptive statistics, including weighted means, frequencies, percentages, and rank order to identify patterns in AI usage, peer interaction, and social connectedness among IT students.

Table 1. Summary of Weighted Means, Frequencies, and Percentages by Research Variable

Research Variable	Wtd. Mean	Verbal Interpretation	Freq. (f)	Pct. (%)	Rank
I. Social Connectedness (Category Mean: 5.46 – High)					
1. Felt connected to classmates	5.82	High	41	91.10%	1
2. Sense of belonging in community	5.51	High	39	86.70%	2
3. Strong relationships with peers	5.42	High	37	82.20%	3
II. AI Reliance &Impact (Category Mean: 4.01 – Moderate)					
1. AI improves academic performance	4.62	Moderate/High	31	68.90%	1
2. AI promotes independent learning	4.38	Moderate	28	62.20%	2
3. Rely on AI instead of people	3.02	Low/Moderate	18	40.00%	3
III. Academic Interaction Patterns (Category Mean: 3.85 – Moderate)					
1. Prefer solving problems alone	4.58	Moderate/High	29	64.40%	1
2. Ask classmates for help	3.91	Moderate	24	53.30%	2
3. Join discussions or study groups	3.06	Low/Moderate	15	33.30%	3

*Note. Frequency and percentage refer to the number and proportion of respondents whose responses fell within the interpreted level indicated for each item, based on the six-point Likert scale described in the Methods section.

I. Social Connectedness

Students reported high levels of social connectedness overall (M = 5.46). Feeling connected to classmates ranked highest (M = 5.82, 91.10%), followed by sense of belonging (M = 5.51, 86.70%) and strong peer relationships (M = 5.42, 82.20%). These scores suggest that most IT students still feel part of their academic community.

The slight decline in scores from general connectedness to deeper peer relationships warrants attention. Students may feel present in their environment without necessarily forming meaningful bonds. As Turkle (2015) noted, digitally mediated environments may cultivate surface-level connectivity while leaving deeper relational bonds underexplored. These findings may indicate a potential area for further longitudinal investigation.

II. AI Reliance and Its Academic Impact

Students showed a moderate level of AI reliance (M = 4.01). Most students believe AI helps their academic performance (M = 4.62, 68.90%) and promotes independent learning (M = 4.38, 62.20%). These perceptions are understandable, as AI tools are genuinely useful for obtaining quick explanations, reviewing work, and exploring ideas independently.

A noteworthy pattern is that approximately 40% of students (M = 3.02, f = 18) reported relying on AI rather than consulting peers when seeking academic help. While this represents a minority, the pattern raises a substantive concern regarding help-seeking behavior. When students direct academic queries to AI systems rather than classmates, the conversational exchange and relational development associated with peer interaction may be reduced. This pattern merits further investigation in future research.

III. Academic Interaction Patterns

This construct had the lowest composite mean (M = 3.85 — Moderate), which is among the more notable findings of the study. Over 64% of students reported preferring to solve problems alone (M = 4.58), and just over half (53.30%) still ask classmates for help (M = 3.91). Only 33.30% reported regularly joining study groups or class discussions (M = 3.06 — Low/Moderate).

The relatively lower mean for academic interaction patterns suggests that students' peer engagement behaviors may be

less frequent than their reported sense of connectedness. This is particularly relevant in IT education, where collaboration, code reviews, and team-based problem solving are core professional competencies. The discrepancy between high social connectedness scores and moderate academic interaction scores represents an area warranting further exploration.

DISCUSSION

Taken together, the data reveal an informative tension. On one hand, students still report feeling connected to their academic community. On the other hand, their reported behaviors — preferring to work alone, rarely joining discussions, and turning to AI instead of peers — suggest that peer interaction may be less central in some students' reported academic help-seeking practices.

These findings should not be interpreted as an argument against the educational use of AI tools. These tools are helpful, and students' use of these tools is understandable given their accessibility, immediacy, and perceived usefulness.However, the way they appear to be used as a replacement for peer interaction rather than a supplement to it is worth examining. Learning is not just about getting the right answer; it is also about the process of struggling through a problem with someone else, building trust, and growing together. Those experiences are not readily replicated by a language model.

Educators and program designers might consider building more structured opportunities for collaboration — activities where students genuinely need each other, not just AI. The goal is not to restrict technology but to ensure that it does not quietly crowd out the human connections that make education meaningful.

CONCLUSION AND RECOMMENDATION

This study set out to understand whether the growing use of AI tools in IT education is quietly changing how students connect with one another. The findings suggest it may be, at least in part. While students still report feeling connected to their classmates, a closer look at their actual behaviors tells a more nuanced story.

Although students reported high social connectedness, their reported academic behaviors suggest that peer interaction may not be consistently reflected in help-seeking and collaborative learning practices. Students are increasingly comfortable working alone, less likely to seek out classmates for help, and rarely joining group discussions or study sessions. A significant portion reported turning to AI instead of people when they needed academic support, indicating a small but meaningful pattern in help-seeking behavior.

What makes this particularly worth noting is that students do not seem to perceive this as a problem. AI feels helpful, efficient, and available. And it is. But learning in a university setting has never been only about acquiring information. It is also about building the kinds of relationships and communication habits that carry students into their professional lives. When those experiences are quietly replaced by interactions with a language model, something is lost, even if the grades stay the same.

The findings of this study do not call for a rejection of AI in education. Rather, they call for a more intentional approach — one that ensures AI enhances learning without inadvertently hollowing out the human connections that make education meaningful. If the current trends continue unchecked, IT programs may produce technically strong graduates who are less practiced at the collaborative, interpersonal side of the work.

Recommendations

1. Integrate structured peer collaboration into coursework. Pair programming, group debugging sessions, and peer code reviews are practical approaches that mirror real-world IT work.

2. Guide students in using AI as a thinking partner, not a replacement. Students benefit from explicit conversations about when and how to use AI appropriately. Encouraging them to consult peers first, then verify or expand using AI, helps maintain the habit of human connection alongside technological fluency.

3. Create low-stakes spaces for academic discussion. Not every interaction needs to be graded. Informal discussion forums, in-class reflection time, and peer mentoring setups can help rebuild the habit of talking through ideas with others.

4. Monitor social engagement alongside academic performance. Institutions may consider tracking indicators of student engagement beyond grades, such as participation in group activities or peer collaboration frequency, as part of a broader picture of student development.

5. Conduct longitudinal and qualitative follow-up studies. This study captures a snapshot in time. Future research should follow students across semesters to track how AI habits and social behaviors evolve, and should include interviews or focus groups to understand the lived experience behind the numbers.

Limitations

This study has several limitations. First, the sample size was small and limited to 45 IT students from one institution, which restricts the generalizability of the findings. Second, the use of convenience sampling may have introduced selection bias. Third, the cross-sectional design captures perceptions at only one point in time and cannot establish causality or changes over time. Fourth, the study relied on self-reported data, which may be affected by social desirability bias. Finally, the researcher-developed

questionnaire was not reported to have undergone full psychometric validation prior to administration; therefore, the findings should be interpreted as exploratory.

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