A Framework for Hybrid Human-AI Learning: Insights from Liberal Education Courses in Lebanon

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Abstract

The global debate over Generative Artificial Intelligence (GenAI) has continued in academic institutions, resulting in discussions on academic integrity and educational standards in a world where 'ChatGPT' use continues to permeate educational, professional, and social contexts. While some academic institutions initially called for banning GenAI tools, many have emphasized the need to introduce these tools within controlled classroom settings. At the Lebanese American University, nine faculty members began to experiment with GenAI use immediately after the release of ChatGPT in November 2022. While the results of that action research allowed participating faculty members to improve upon their application of GenAI in their second and third iterations of the exercise in their respective classes, this paper focuses on a framework for pedagogical practice that could guide faculty as they critically plan their course activities and prepare their students for the use of GenAI in different academic settings. While emphasizing academic rigor, faculty using this framework will thoroughly analyze their existing course and program learning outcomes to accurately determine the potential for hybrid human-AI learning outcomes. Through Bloom's Revised Taxonomy, faculty can re-evaluate the use of GenAI in their courses or programs, dissecting these outcomes to better utilize AI capabilities while highlighting Human skills. While many faculty members have been incorporating GenAI activities in their classes on an ad-hoc basis, this framework focuses on an in-depth approach, determining a collaborative approach to using GenAI tools, with learning outcomes clearly visualizing the hybrid process. A sample course on Hybrid Human-AI communication will also

be shared to portray the process. This course is designed with GenAI in mind, allowing students to focus on learning *with* all the tools at their disposal. The detailed activities (which will be shared in the study) also expose students to another aspect of the pedagogical framework: A mindful awareness of the AI Usability Spectrum. For instance, while Bloom's revised taxonomy is instrumental in the creation of Human-AI learning outcomes and course content, the framework also encourages faculty to reflect upon the AI Usability Spectrum. To maintain academic integrity and embrace the full use of Human-AI learning, faculty can engage students in the learning process, determining the 'right' amount of AI usage for every task. This practice includes breaking down tasks into categories pertaining to writing, critical thinking, and research while classifying AI use into low, medium, and high intensity. This interactive process introduces critical exercises where students compare different platforms to determine suitability for specific tasks, promoting a discussion on data ethics, privacy, and academic honesty. To promote further implications for practice, the study showcases opportunities for reflection, both as individual users and in groups through using Socratic Dialogue, as faculty and students test the limitations of different platforms and address the ethics of using GenAI in a world that increasingly blurs the lines pertaining to Cyberethics.

Keywords: Generative AI, Pedagogical Innovation, AI Usability Spectrum, Bloom's Revised Taxonomy, Cyberethics

Background

When ChatGPT was released on November 30, 2022, it amassed a historic one million users in its first five days [1], with many students immediately adopting ChatGPT as their tutor of choice for academic assignments, leading to emergent debates on the 'end of education as we know it' and the failing role of the teacher. The subsequent debate emphasized the necessity for academics to react, leading to discussions on banning the use of Generative Artificial Intelligence (AI) tools, referring to the 'set of algorithms that can generate seemingly new, realistic content, including text, images or audio' [2]. In contrast, Walter [3] advances a more positive outlook on GenAI use, citing the need for comprehensive teacher training.

It is within this climate of uncertainty that faculty from a private university operating in Beirut and Byblos, Lebanon, decided to experiment with the use of Generative AI (GenAI) tools in their Liberal Arts and Sciences courses. The choice of courses as the venue for this explorative use of GenAI was pertinent, as they are housed within an innovative Liberal Education curriculum focused on high-impact educational activities and connecting students to global issues within the larger sphere of the United Nations Sustainable Development Goals. As a result, the program emphasized the need for developing critical awareness of the digital realm and bridging the digital divide.

Thus, the aim of the study was to explore, through a cyclical process of reflection and Action Research (AR), whether GenAI tools provide an opportunity for student empowerment in these liberal education classes. Faculty members were encouraged to reflect upon an AI-driven approach to their course design. Emphasis was placed on whether a hybrid Human-AI approach would have an added value and whether academics should support such a 'post-plagiarism'

world [4]. Within our specific local context, these faculty members sought to evaluate such a hybrid Human-AI learning process.

The Critical Debate on GenAI in Education

Chauvet [5] reflects upon the '30-year cycle' in historical debates on AI, with periods of fascination to more critical reflection and subsequent 'stagnation' [6]. This has led researchers to recommend more practical approaches to understanding AI risks, focusing on their impact on society and potential bias [7], [8]. In a similar vein, Mohamed et al. [9] and Adams [10] further discuss the need to protect vulnerable populations from such advances in AI, citing the need to 'decolonize' AI. This is in line with critical theory in general, whose proponents focus on the need for 'dialectical thought' [11], identifying power dynamics in our current realities to change the *status quo* [12], [13], [14], [15].

Considering such critical reflections on GenAI, it remains vital to develop a more 'nuanced' approach to dealing with these technological advances [16], [17], urging practitioners to avoid 'utopian and dystopian' extremes while remaining cognizant of the power dynamics at play and the need to create ethical guidelines to support all stakeholders. As such, this study aims to provide stakeholders with some vital lessons learned, to create a working plan that other faculty might find useful. Many researchers have covered the need to discuss the use of GenAI and its potential 'disruptive' impact [18] on academia, with current fears that it would lead to dependency as it makes researchers 'lazy' [19]. Other studies, such as the one by Dakakni and Safa [20], have also explicitly focused on the Lebanese context, while discussing its ethical implications. Similarly, this study seeks to focus on the means of using GenAI proactively and *critically* to support and empower both students and faculty members. The participants in this

study sought to reflect upon whether GenAI could be used as a tool that supports students as they acquire skills needed for an uncertain future.

Another, lesser, discussed facet of the advance of GenAI, has been the bridging of the digital divide by academics globally. Within the blink of an eye, faculty members from around the world were in 'the same digital boat' while dealing with yet another disruptive element impacting their classrooms and learning objectives. As such, the release of ChatGPT worldwide could potentially bridge the digital divide [21], allowing academics worldwide to start from the same original position [22], referring to a hypothetical situation where everyone has equal advantages and opportunities. This potential for empowerment will be discussed through a critical lens, though, as the power dynamics remain skewed in favor of academics working in contexts that had been better prepared for such drastic advances in technology [23], [24], [25] despite the initial global uproar. This was true even prior to the drastic changes necessary after the release of ChatGPT and other subsequent GenAI tools.

Best Practices in the Academic Use of AI

As such, it is imperative to consider the advantages of GenAI use and best practices for their academic use. Oregon State University, for example, has outlined a revised list of Bloom's taxonomy, with relevant categories associated with GenAI. They recommend using such a table as a tool for 'evaluating and making changes to aligned course activities and assessments […] that account for generative Artificial Intelligence (AI) tool capabilities and distinctive human skills'. This is in line with Eaton's [4] tenets of post-plagiarism, which expand upon the new age of hybrid human-AI co-writing. Thus, this potential for bridging the divide is a significant reason for conducting this study: to identify the specific uses for GenAI within the context of an

American-style private university in Lebanon, where students use English as a medium of instruction to complete their undergraduate courses and complete various research-based activities. This point is especially critical since English is not a first language in Lebanon, yet students and researchers are expected to acquire near-native fluency to complete essential academic tasks. This is set within a background of linguicism [26], where students and teachers are expected to speak in English and complete challenging tasks in a language that might feel foreign to many of them. This can also impact their output directly, sometimes creating additional linguistic barriers to publishing for multilingual Lebanese scientists [27].

While Dobrin [2] appeals to educators to explore ways in which they can 'teach students about the relationships between GenAI and integrity – academic, professional, civic, and personal', this study aims to show concrete examples of such a hybrid situation, within the context of liberal education in Lebanon, with students who might need GenAI as a tool for empowerment and a means of bridging the linguistic divide. I will also adopt Barnum's [28] spectrum on AI assistance in student assignments to categorize GenAI use in terms of writing, research, and critical thinking with emphasis on low, medium, and high involvement.

Method: Inquiry *with* people through Action Research

The purpose of this study was to explore whether academics could feel empowered, and in return empower students, to optimize the use of GenAI amidst the moral panic resulting from the use of such tools and their impact on academic integrity. The aim was to create a space for open discussion and collaboration immediately after the release of ChatGPT. Using qualitative methods, the study sought to answer the following questions:

1. To what extent do academics feel empowered to use Generative AI tools in their teaching amidst concerns about academic integrity?

2. How can educators adapt a GenAI pedagogical framework to their specific teaching contexts while supporting student learning outcomes?

My research adopted Action Research (AR) to emphasize what Altrichter et al. [29] consider as '[i]nquiry with people, rather than research on people'. The cyclical progression of AR, as per Troudi [30], involves a progression from rationale to intervention, reflection, and finally preparation for another cycle of AR. Faculty members teaching a diverse number of Liberal Arts and Sciences courses in a private university in Lebanon were to meet in focus groups and discuss creative ways to use AI in the classroom. They were also expected to reflexively discuss their findings with the other faculty members in the group and explore means of empowering their students through GenAI. This would also function as a space for dialogic inquiry within the classroom on the notion of GenAI and its ethical uses. The study itself ran for the length of one academic semester, with regular focus group meetings both before, during, and after the intervention (using GenAI for at least one classroom task). Participants met for an introductory session, then follow-up sessions to discuss potential uses in their distinct contexts, with the final session critically reflecting upon the process. The focus group sessions were held online through the Webex videoconferencing platform and participants were quite comfortable with the use of such software as they had all previously taught and/or studied online during the transition to online learning during the COVID-19 pandemic.

This study applied both qualitative and critical research methods focusing on dialogic inquiry and *praxis* through a connection between action and reflection [31]. Through purposive sampling, where researches select participants to meet specific needs [12], I also sought faculty

members to cover different strata - identifying whether specific characteristics of the individual participants are adequately represented albeit in a smaller sample [32]. This is why the study targeted faculty members within the Liberal Education program as it currently houses the most diverse courses within both Arts and Sciences. This program is also relatively new (launched in 2021) and seeks innovative educational approaches and high-impact student-led activities. Through appropriate administrative channels, I thereby reached out to all faculty teaching in the program and received confirmation from nine faculty members teaching the following courses: Advanced Academic English, Debating Sustainability, Digital Cultures, Literature, Philosophy of the Mind, Sustainable Energy, Technology and Ethics, and Water Security. This allowed me to include a diverse pool of faculty members with varied pedagogical approaches and content.

As a faculty member teaching within the Liberal Education program, I participated in these discussions from a critical research perspective, acknowledging my connection to the context and relevant knowledge. As a critical researcher, I am cognizant of my role as a faculty member in the same institution, who also planned on exploring the use of GenAI in my liberal arts courses. As a facilitator, it was paramount to provide equal opportunity for all participants and allow for power-sharing. This is in line with the need for focus groups to allow collaboration among participants, to 'utilize group interactions' [33].

Topics covered during the focus group sessions included:

1. Awareness of current advances in AI

2. Concerns pertaining to AI and academic use

3. Potential means of ethically using AI in the classroom to empower students

Each classroom intervention was categorized into its Usability Spectrum (Barnum, 2023) and

Bloom's Revised Taxonomy [34]. Table 1.0 outlines how AI applications can be strategically

employed to enhance each cognitive process in Bloom's Revised Taxonomy.

Bloom's Revised Taxonomy	AI for Critical Thinking	AI for Research	AI for Writing
Remembering (Recall facts, definitions, basic concepts)	AI-generated flashcards, automated quizzes	AI-assisted literature searches	AI-based grammar and spell checkers
Understanding (Explain ideas, summarize, interpret)	AI-driven concept mapping, interactive tutoring	AI summarization tools, automated reading comprehension analysis	AI tools for sentence restructuring and readability suggestions
Applying (Use knowledge in new situations)	AI simulations for ethical dilemmas and decision-making	AI-powered citation managers, research organization tools	AI-generated writing prompts, AI-assisted style adaptation
Analyzing (Break down and structure information)	AI for argument analysis, bias detection in sources	AI-assisted data analysis and pattern recognition	AI tools for logical flow and coherence checking
Evaluating (Justify decisions, critique, assess)	AI-powered debate analysis, fact-checking tools	AI for source credibility analysis, research validity checks	AI-driven peer review and feedback systems
Creating (Produce original work, innovate)	AI-assisted brainstorming, idea expansion tools	AI-powered hypothesis generation, research question refinement	AI-driven content generation with human oversight

Table 1.0 Intersection between Bloom's Revised Taxonomy and the AI Usability Spectrum

Findings: Dialogic Inquiry and the AR Cycle

The three focus group sessions followed the three stages of the Action Research (AR) cycle. The

first session included an introduction to the study and a discussion of potential ideas for

intervention and faculty concerns. The second session was a thorough overview of the proposed

hybrid Human-AI proposed activities, and the third session allowed faculty to reflect upon the

intervention and propose ideas for a new cycle.

Pre-intervention

During the initial focus group session, participants approached the upcoming intervention with varying degrees of enthusiasm. While most were generally excited about using GenAI in their classroom, others were hesitant as to the specific task at hand and whether they could create an enriching student experience. Most faculty members already had some ideas for potential activities, though they were expecting these focus group sessions to provide more clarity and shared knowledge. Two participants were also planning to seek student feedback regarding the topics and tasks that could be completed with support from GenAI.

We reflected upon these activities while focusing on the following blueprint for any suggested activity:

- Identifying the specific learning objective for the lesson or activity

- Categorizing into synchronous or asynchronous activities (flipped learning)

- Classifying the specific GenAI tool that would be used

- Reflecting upon the added value of using GenAI in this activity

Critical reflection included whether students would be able to generate context-specific feedback using GenAI. For example, in the Sustainable Energy course, students usually calculate their carbon footprint, and using GenAI could be of extreme help in such a task. However, students could reflect upon the specificity of the content pertaining to the Lebanese context. Additionally, while most participants were contemplating the use of text-generating software, for example in Academic English or Debate courses, others were considering coding Avatars and chatbots in Digital Cultures courses. For the upcoming class intervention, I advised participating faculty to divide any upcoming tasks into clear learning objectives as per Bloom's taxonomy and clarify degrees of AI use while remaining critical of advancing *human* skills. One resource that has

proven useful in this area is the new classification scale developed by Oregon State University [34]. Another infographic that supported our pedagogical framework was developed by Barnum [28] to provide a spectrum for student AI use. I have therefore categorized all assignments proposed in this intervention based on these two resources.

Figure 1.0 outlines the framework as a faculty member in a Water Security course transitioned from their specific teaching context to assess their student needs and identify a relevant prompt and learning objective. At the first fourth level of the framework, the instructor assessed the AI usability spectrum and categorized Bloom's Revised learning outcomes into AI usability and student learning.
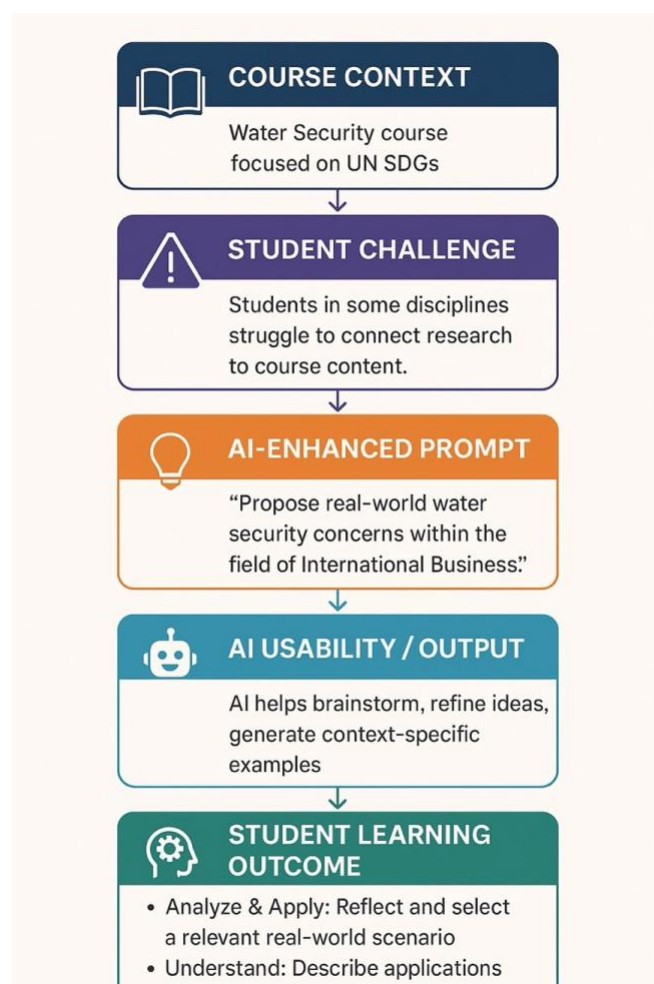

Figure 1.0 Pedagogical Framework Application

Intervention and Targeted Learning Outcomes

The proposed assignments that were discussed during the focus group sessions are classified in table 2.0 under the label 'Proposed Hybrid Academic Assignments for Liberal Education Courses'. These practical activities are divided into the AI Usability Spectrum [28] and Bloom's Revised Taxonomy [34]. Sample prompts and specific course content are also included to provide a practical pedagogical tool for interested faculty. The rationale for using GenAI and its added value in empowering students and bridging the digital divide is also included in the column on AI assistance.

Table 2.0: Proposed Hybrid Academic Assignments for Liberal Education Courses

Course Context	Challenges faced by Students	Sample Prompt	AI Usability/ Generated Output	Student Learning Outcome	Bloom's Revised Taxonomy
Water Security: This course provides a comprehensive examination of water security issues confronting society with particular focus on UN Sustainable Development Goals (SDGs)	Some students in certain disciplines were finding it more difficult to relate their research to course content.	"Propose real-world water security concerns within the field of International Business."	*Critical Thinking*: AI assists in brainstorming or refining ideas	*Analyze and apply:* Students critically reflect upon these scenarios to select one suitable for their context.	*Understand:* Describe real-world applications of a specific concept
Digital Cultures: Provides practical applications of python programming, machine learning, and an in-depth awareness of	There was a clear digital divide between students from a Computer Science background and those less aware of key	"Identify specific examples of phishing and its impact on society."	*Research:* AI provides basic information	*Apply:* Students make use of new information in an attempt at knowledge-sharing and	*Understand:* Define and describe specific concepts and key terminology

social cybersecurity	programming languages and machine learning			awareness of new ideas.	
Debating Sustainability: Introduces students to formal, structured debate as a tool in decision-making, leadership and civic engagement. It focuses mainly on case construction, cross-examinations, use of evidence, team debate, and ethics in argumentation.	Most debate topics might be inaccessible to the general population at first, or some students might have more of an advantage. AI would be the 'great equalizer' in this sense.	"Suggest grounds for a debate on the effectiveness of the United Nations SDGs."	*Critical Thinking:* AI assists in brainstorming or refining ideas	*Analyze:* Students critically reason and adapt these generated arguments to their context, remaining cognizant of rhetorical appeals to effectively persuade their audience.	*Understand:* Define and describe specific concepts and background on a topic
Literature: Provides a survey of the methodology and practice of literary study; of basic notions of literary theory; and a survey of the historical development of English literature	For students to develop a sense of empowerment, they need to critically examine the abilities of GenAI and assess its 'creative potential'	"Write a short story on the current situation in Lebanon, in the style of Edgar Allan Poe's 'tell-tale heart'."	*Writing:* AI assists in writing specific texts	*Evaluate*: Students examine the generated text and its literary style, comparing it to canonical texts studied in class.	*Apply:* Make use of a certain linguistic and/or literary style to generate text
Philosophy of the Mind: Takes a closer look at current ways of thinking about the mind's architecture, and how we can model	Students appear to overestimate the 'intelligence' of AI. This exercise would attempt to narrow down the definition of	"Discuss the concept of cartesian dualism and comment on its connection to current real-world problems."	*Critical Thinking*: AI develops arguments on specific	*Evaluate*: Students examine the generated text, comparing it to texts written by philosophers in the field. They	*Analyze:* Compare and contrast different arguments

the mind, before turning to different models of the mental in cognitive and computer science today.	intelligence and focus on its limitations		philosophical texts	would comment on GenAI's ability to construct arguments and discuss philosophical concepts.	
Advanced Academic English: focuses on synthesizing academic sources to provide an empirical research paper	Students need to critically examine existing content generated through AI, especially since many of them find it difficult to critically review academic research	"Suggest possible solutions to combat grade inflation in academic institutions"	*Critical Thinking*: AI develops arguments on a specific topic, focusing on problem-solution contexts	*Evaluate:* Students evaluate the different solutions and choose the most relevant/feasible solution to integrate into their papers.	*Understand* Define and describe specific concepts and background on a topic
Sustainable Energy: Explores conventional and renewable energy with a particular focus on the progress towards achieving UN SDGs	Many students were not aware of specific recommendations in the field and would be empowered with practical global/local solutions.	"Propose recommendations to reduce my residential carbon footprint based on the following data points."	*Critical Thinking:* Propose new recommendations for reducing a specific carbon footprint	*Evaluate:* Students engage in metacognitive reflection to identify changes they wish to keep or what might need additional revision.	*Create:* Suggest a range of alternatives
Technology and Ethics: Examines the impact of technology within global societal contexts, emphasizing the digital divide as well as privacy and civil liberties.	Many students do not have full command of the English language, and this can unfairly impact their performance in major and elective courses.	"Revise my paper for cohesion, sentence structure, syntax, grammar, and other minor errors."	*Writing:* AI checks or corrects spelling or grammar	*Evaluate:* Students engage in metacognitive reflection to identify changes they wish to keep or revise.	*Understand:* Describe a concept in different words

Table 2.0. Sample interventions shared by faculty in the focus groups, categorized by the author into aspects of Usability and Bloom's revised taxonomy.

Discussion and Post-intervention Reflection

During the last focus group session, participants reflected upon the interventions used in class sessions or their flipped asynchronous alternatives. They shared class engagement and student reflections. They also commented on the added value of such human-AI hybrid activities. Faculty feedback on their attitudes towards the use of the GenAI framework helped in answering the study questions.

In general, most faculty members would replicate this exercise in upcoming semesters. They felt that it allowed students to bridge the divide as they were able to complete class tasks, irrespective of their major and previous general knowledge. Faculty members also mentioned that reflecting upon the content generated by AI allowed students to become more critical. While GenAI was able to present accurate results in fields such as computer science and sustainable development, its input on topics within literature, language, and philosophy was less impactful and more generic. This is consistent with current research on multi-disciplinary challenges associated with GenAI [35]. GenAI was also unable to accurately portray specific input relating to Lebanon and mostly recycled generic content that might not always be appropriate to a specific context. This finding is consistent with Qadri et al. [36] who identified the limitations of such tools in accurate representation.

On a more positive note, though, faculty found that GenAI helped students gain a better understanding of certain scientific concepts, in line with research by Gervacio [37] on using GenAI to break down complex ideas. For example, in the assignment on connecting a student's major to matters pertaining to water security, students were able to work independently and were

empowered to depend on themselves and their teammates, with lesser need for instructor input. This caused the faculty in these contexts to feel empowered to use these prompts again, as it supported their teaching and allowed their students to master learning outcomes. While many students initially compared using ChatGPT to search engines, GenAI allowed more students to work independently, a trend consistent with research by Hartley [38]. Students needed to remain critical throughout, though, and faculty reported that their students began to revise generated output and re-designed their prompts. While using GenAI for research-based activities provided 'acceptable' results for most students, it is currently limited by the need for a critical prompt and the potential to generate plagiarized text and deficient reference lists [39]. In general education undergraduate courses, though, GenAI proved more effective as students might need less in-depth development. Faculty teaching those liberal education courses felt empowered to use GenAI again and some directly noted that they are currently 'revising the prompt to prepare for the next semester'. In the course on sustainable energy, for example, students shared their residential energy audit and received recommendations for reducing their carbon footprint. However, the participating faculty member remained critical and motivated students to ensure recommendations were truly effective and relevant to our local context.

Similarly, through philosophical exercises that involved an evaluation of the limitations of intelligence in GenAI, students were able to critically revise their definition of intelligence, putting GenAI through a rigorous set of assessments. Moreover, creative exercises that involved literary input proved problematic as well. Most of the content did not truly reflect the depth of emotion usually found in canonical works of literature. Additionally, any attempt at replicating a particular literary style was mostly plagiarized, using different 'one-liners' from previously published works. Students also felt the need to revise the generated poems to give them more of

a human 'depth'. This is consistent with critical reviews of AI-generated poetry, considered 'form without meaning' [40].

It is important to note, though, that the primary reason for resorting to GenAI for many students in our Lebanese context remains that of bridging the linguistic divide. Many of our students must write insightful papers and present concepts in a language that they might not always be fluent in. In a world heavily dependent on English for academic purposes, GenAI language support can be quite beneficial [41]. In elective courses where students are evaluated upon the content of their arguments, using GenAI to improve their writing can be an explicit act of equity and social justice, thereby eliminating educational disparities [42]. This AI use, however, needs to be clearly discussed with students as the use of GenAI to revise specific linguistic input (ex. Grammar, spelling, and punctuation) would not be the same as completely generating writing through AI. This is where clear codes regarding the AI Usability Spectrum would need to be communicated.

Implications for Practice

As previously stated, the AR cycle involves a clear rationale for pedagogical intervention, reflection upon this exercise, and preparation for another cycle [30]. All faculty members involved in this exercise were empowered to create similar hybrid student-AI activities in their upcoming classes. They were aware of both the added value of such assignments and their ability to provide critical reflection on the limitations of GenAI.

Consistent with Wach et al.'s [43] emphasis on responsible use of GenAI tools, faculty members were aware of the need to move beyond mere restriction to ethical use. Faculty members consistently relayed their belief that the best means forward is to expose students to

GenAI tools within a controlled class environment, in a manner like the introduction of the first calculator for mathematical analysis. To avoid any potential abuse, students could defend their work and reflect upon 'thinking aloud with GenAI'.

The need to empower our students with knowledge on AI use, though, was at the forefront of many conversations during this study. Faculty members were generally aware of the need to improve our current knowledge of these tools, especially pertaining to identifying any bias or lack of specificity pertaining to our local Lebanese context. Students also needed to become more aware of the limitations of these tools and the need to consistently revise our prompts while using AI to generate beneficial content. This would allow students to bridge this new AI divide [23]. The impact of using these AI tools on our human skills is also a discussion worth having, as students would need to hone their *human* skills in this new reality.

Sample Course Design

This study led to the creation of a sample hybrid Human-AI communication course. One that employs Bloom's Revised Taxonomy with an AI usability spectrum. The full course syllabus is attached as Appendix A: Human-AI Communication: Critical Use of Artificial Intelligence in a Post-plagiarism World.

The course description includes the following emphasis on hybrid work:

> This course follows a workshop strategy with hands-on experience, providing students with an opportunity to communicate with Generative and Analytical AI tools. Students will critically explore and compare different tools that support them in the research and communication processes. They will also discuss ethical concerns with using AI and the best means to optimize AI use in an academic

setting. Students will use AI tools to develop a traditional research paper (with a literature review), communicate their research via poster to a lay audience, and reflect upon their work in an oral presentation. They will use AI tools throughout their coursework and clearly evaluate the generated output as they continuously improve upon their hybrid human-AI writing process. They will also learn how to accurately cite AI use in a post-plagiarism digital space. Emphasis will be on reflecting upon the process of Hybrid writing throughout the semester.

Its course learning outcomes include an embedded use of AI tools:

- Students should critically compare AI tools to optimize generated output and identify advantages and disadvantages.

- Students should identify the best strategies for prompt literacy.

- Students should evaluate the ethical concerns and limitations of AI use.

- Students should produce hybrid Human-AI writing with accompanying reflection sections.

- Students orally examine their work and experience with using AI.

The course grading criteria also heavily support hybrid assessment strategies, with a clear distinction between human and AI output:

- Case Study (Group evaluation of AI tools while creating a relevant set of guidelines)

- Communication Email (text and poster with accessibility guidelines)

- Oral Defense (Individual presentation with AI speaker coach reports and reflection)

- Hybrid Human-AI Research Paper (with annotated bibliography categorizing and critically analyzing human vs. AI output)

- Participation (Social Annotation, AI Socratic Dialogue)

Conclusion

While this study is a preliminary intervention, using Action Research, on a limited number of courses in our Lebanese context, it can provide a framework for similar and more rigorous future interventions. Despite its limitations in terms of scope, including the focus on faculty experience without incorporating student input, this research provides concrete pedagogical recommendations for continuous application. The current iteration, which involved a limited number of faculty members through action research, lays the groundwork for future studies. Subsequent iterations of the same framework can expand to emphasize student experiences, thereby offering a more comprehensive understanding of the educational environment. These recommendations include:

- Adopting a rigorous framework for GenAI use that includes its connection to Bloom's Revised Taxonomy, explicitly outlining both AI and human capabilities

- Classifying AI use into a broad spectrum of type (critical thinking, research, or writing) and degree (low, medium, high)

- Ensuring accessibility to a wide array of GenAI tools to allow for both diversity and equity and to promote different platforms

- Presenting assignments as process rather than product, where students include prompt generation, generated AI input, and their *human* reflection on the process

Such recommendations would empower both faculty and students as they negotiate these new tools. GenAI research and practice are still in their infancy. The potential for new Intelligent Tutoring Services (ITS) is also an avenue for future discussion, as most of these new tools are not readily available for the regular user or might be more expensive than their 'free'

alternatives. Custom tutoring, however, would provide a more ethical and responsible means of using GenAI while remaining conscious of the need to improve human skills. In a hybrid post-plagiarism world, educators and students need to work towards AI augmentation rather than elimination. Educators need to empower students (and other faculty) through AI-driven design for a more just academic world, but if the instructor wants to remain 'in the driver's seat', then they need to lead this charge and reclaim the academic integrity they highly value. The potential to replicate custom tutoring with current GenAI tools could decrease the digital divide and empower the current generation of students at the intersection between the world as we knew it before November 2022 and after the release of ChatGPT. Future research should also report on the student experience in using GenAI, emphasizing their unique experience as they navigate academic and academic integrity.

Abbreviations

AR: Action Research

AI: Artificial Intelligence

ChatGPT: Chat Generative Pre-trained Transformer

COVID: Corona virus disease

GenAI: Generative Artificial Intelligence

ITS: Intelligent Tutoring Services

UN SDGs: United Nations Sustainable Development Goals

AI Use Disclaimer

GenAI was utilized to assist with the formatting of one table, one figure, and the generation of IEEE source citations. All content, analysis, and conclusions are solely the work of the author.

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