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Soundwalking with AI: collaborative creativity as embodied learning

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This paper presents an innovative approach to designing soundwalks in educational group settings by harnessing AI, particularly ChatGPT, to inspire collaborative auditory imagination and soundscape creation. By serving as an interlocutor during a group script formulation process, ChatGPT aids in transforming student recollections of a city's sound marks into a textual description of the group's collective auditory imagination. This imagination is refined through a social, collaborative prompt engineering exercise into a concise soundwalk script. Over the course of a week, students then individually bring the co-created script to life, through an embodied practice that includes capturing the required sounds in the field and assembling them in digital audio workstations, before presenting their interpretations to the class. Conducted at California State University, San Bernardino, in Spring 2023 with a group of four students, this pedagogical experiment showcases an adaptable method for teaching collaborative creativity at the intersection of human perception and emerging technologies such as AI. Highlighting the interplay between auditory experiences, collective vs. individual imagination, and language, the research underscores AI's dual role as facilitator and collaborator, supporting varied creative expressions beyond a singular AI-generated narrative. Participants recognized AI's usefulness for streamlining the collaborative process of crafting a script but noted its limitations in emotional depth, sparking a discussion on the necessity of human involvement in refining AI content. Within this paper, the authors suggest an AI-assisted pedagogical model designed to facilitate student participation in both collective and individual modes of learning and creativity. They critically assess both the advantages, limitations, and ethics of their pedagogical experiment in the creative arts and contribute to the larger discourse of human-AI collaboration within creative media education. In spite of the small sample size of the experiment, the account offers a reflexive practice in rethinking how technology has the potential to innovate learning. This research effectively advances social innovation by integrating emerging technologies, especially artificial intelligence, into group learning settings in digital media creation.

KEYWORDS

AI in teaching, soundwalk creation, embodied learning, collaborative creativity, AI-assisted creativity

1 Introduction

The rise of AI tools with easy-to-use user interfaces has fundamentally altered the way students and educators use technology in higher education. But AI tools are often centered on individual learning (Holmes et al., 2019), urging a shift toward group-focused systems. Our research aims to fill this gap by employing artificial intelligence, specifically NLP, to boost group learning (see Figure 1). In combining AI-facilitated group discussions about sound with hands-on sound design, our project investigates the sound-language relationship through technology.

In this intersection, soundwalking is ideal for educational settings as it connects an environmental soundscape with language and embodied listening. It can involve a technologically unmediated walk in which participants listen to an environment, such as in the work of Schafer (1993), or take the form of a sound recording, in which the embodied practice manifests itself in the act of listening (Westerkamp, 2017). Regardless of the approach, soundwalking has been shown to be an effective framework for participants to gain key environmental insights (Adams and Bruce, 2023). We have incorporated soundwalking into our pedagogical experiment as a way to integrate imagination, language, embodiment, and sound.

In this paper, we present our theoretical framework, our pedagogical approach, the classroom implementation at California State University, San Bernardino (CSUSB), and the students' soundwalk results. In spite of the small sample size of four students, and in spite of the ethical risks of working with AI in education (Bartoletti, 2022), we understand the model as a potential way of integrating AI tools into creative education, highlighting how this approach sharpens switching between individual and collective learning, with secondary learning outcomes of critically rethinking the relationship to technology and deepening critical AI fluency that are particularly necessary for navigating technologized creative realms such as sound-making.

2 Theoretical frameworks: soundwalk generation with AI

2.1 Sound as ambiguous

The complex and subjective nature of sound, particularly as it relates to the relationship between sound and environment, has led to the coining of terms such as "soundscape" (Schafer, 1993), "acoustic ecology" (DeLuca, 2018), "environmental sound" (DeLuca, 2018), and "acoustemology" (Feld, 2015). This complexity is exacerbated both by the difficulty in distinguishing individual sonic "objects" (Chion, 2012) from greater sonic assemblages as well as the ephemeral and "fluid" (Voegelin, 2018) nature of sound. Even common taxonomies of sound, such as "foreground ambience" and "background ambience" (Horowitz and Looney, 2014), become further complicated with the introduction of AI into the processes of listening, analyzing, and creating soundscapes.

2.2 AI: tool or collaborator?

AI tools such as ChatGPT similarly co-exist with their human user(s) in a complicated relationship, albeit one that is mediated through language. Although several generative AI tools were beginning to emerge at the time of this study (e.g., Bing AI and Bard), we chose OpenAI's ChatGPT because of its popularity among students, ease of access, and growing relevance in educational discourse. Before the experiment, students were informed of the privacy and data security risks inherent when working with such a tool. According to Tan and Maravilla, an ethical AI system must "uphold students' rights to privacy, ensure fairness, and avoid deception" (Tan and Maravilla, 2024). Students were informed about the risks of working with an opaque and proprietary AI tool such as ChatGPT at the beginning of the project. Taking into account the risk, when used in a critically reflective manner, ChatGPT serves as a launching point for the discussion on AI's dual role as a tool (to synthesize text) and a collaborator (introducing new, unexpected ideas). While some frame AI as a collaborator, especially in educational settings (Atchley et al., 2024), others argue for its categorization as a tool not unlike the photo camera or other technologies used by artists (Frank, 2022). Our interest is to reflect on agency as a distributed entity in a group setting, albeit one that is further complicated via the collaborative use of AI. In our pedagogical experiment, AI is not used to synthesize sound, but acts on the level of language to synthesize a group narrative, mediating and organizing sonic ideas that are then realized in each student's individual soundwalk composition.

2.3 The format of the soundwalk

We chose the soundwalk for our pedagogical experiment due to its intersection with subjective embodied listening and its complex technological relationship to sound. Although soundwalks can take various forms, they generally comprise "an exploration of, and an attempt to understand, the sociopolitical and sonic resonances of a particular location via the act of listening" (McCartney, 2004). A soundwalk can be experienced by a listener directly or, through field recording, can be shared with listeners beyond the time and place of the original listening event. As such, the soundwalk becomes the basis for a "compositional extension" of the soundscape (Westerkamp, 1996). Both methods have historically been used in education, notably by Westerkamp (2017).

3 Pedagogical approach: learner-centered teaching and collaborative AI-prompting

3.1 Overview

Our pedagogical approach is based on recent developments in integrating AI into learning settings in higher education. Kayal suggests that AI in learning is a "transformational force" (Kayal, 2024) capable of fostering ethical processes as well as accessibility and inclusivity in the classroom. In line with recent research

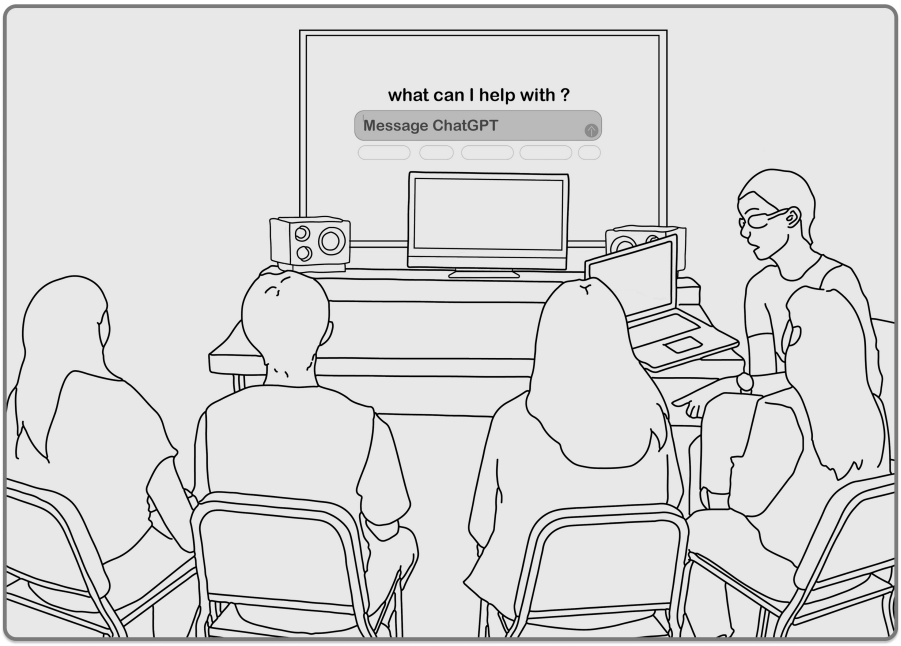

FIGURE 1
Schematic drawing of classroom scene of the proposed pedagogical experiment; showing four undergraduate students, an instructor controlling the AI agent via text input, a large screen showing the AI conversation to the class and fostering discussion, and two studio loudspeakers for group listening.

on learner-centered teaching (in which the instructor acts as a facilitator) (Weimer, 2013) and the idea of fostering digital literacy by bringing AI into the classroom (Bender, 2024), our approach focuses on three main pedagogical principles: asset-based teaching, integrated and individuated learning, and facilitating classroom learning with AI (see Figure 2).

3.2 Asset-based teaching

The first of these, asset-based teaching (Mein, 2018), emphasizes the knowledge and life experiences that students bring into the classroom, incorporating their diverse cultural frameworks to foster inclusive and equitable learning experiences (Chavez and Longerbeam, 2023). Drawing from this model, our experiment leverages students' knowledge of the local soundscape, specifically their cultural literacy around sound as an auditory, cultural, and political phenomenon that ecompasses its sociopolitical power relations (Attali, 1977).

3.3 Integrated and individuated learning

The second focus was balancing integrated and individuated learning methods. Integrated learners contextualize and connect with the world "through interrelational connections," while individuated learners "interact in a compartmentalized manner" (Chavez and Longerbeam, 2023). The soundwalking assignment was designed to incorporate both approaches. Initially, students collaboratively identified significant sounds from in and around the university campus, utilizing communal and cultural knowledge. During the recording and editing phases, students individually created soundwalk scripts, emphasizing individuated learning and using soundscape composition for identity negotiation and reclaiming aural agency (Yanko, 2019; Tejada et al., 2024).

3.4 AI as a facilitator in the classroom

The third pedagogical framework that informed our instructional design was the integration of AI as a tool for facilitating classroom learning. AI, in spite of its manifold ethical risks in education (Bartoletti, 2022), when used responsibly, can facilitate collaborative learning (Tan and Maravilla, 2024). It can do so particularly by "acting as a virtual peer or a teachable agent, making dynamic connections with discussions in the classroom" (Holmes et al., 2019). In our pedagogical experiment, AI was employed to help students organize their discussion, synthesize it, and introduce novel ideas into a structured soundwalk narrative. The role of AI as a non-human collaborator in the creative process is crucial, allowing it to contribute novel ideas as well as "play a meaningful role in mediating [the] nuanced social dynamics" of the group (Suh et al., 2021). This is particularly relevant to moderating disagreements between group members, as the AI can serve as an emotionally neutral intermediary through which group members can express diverging opinions.

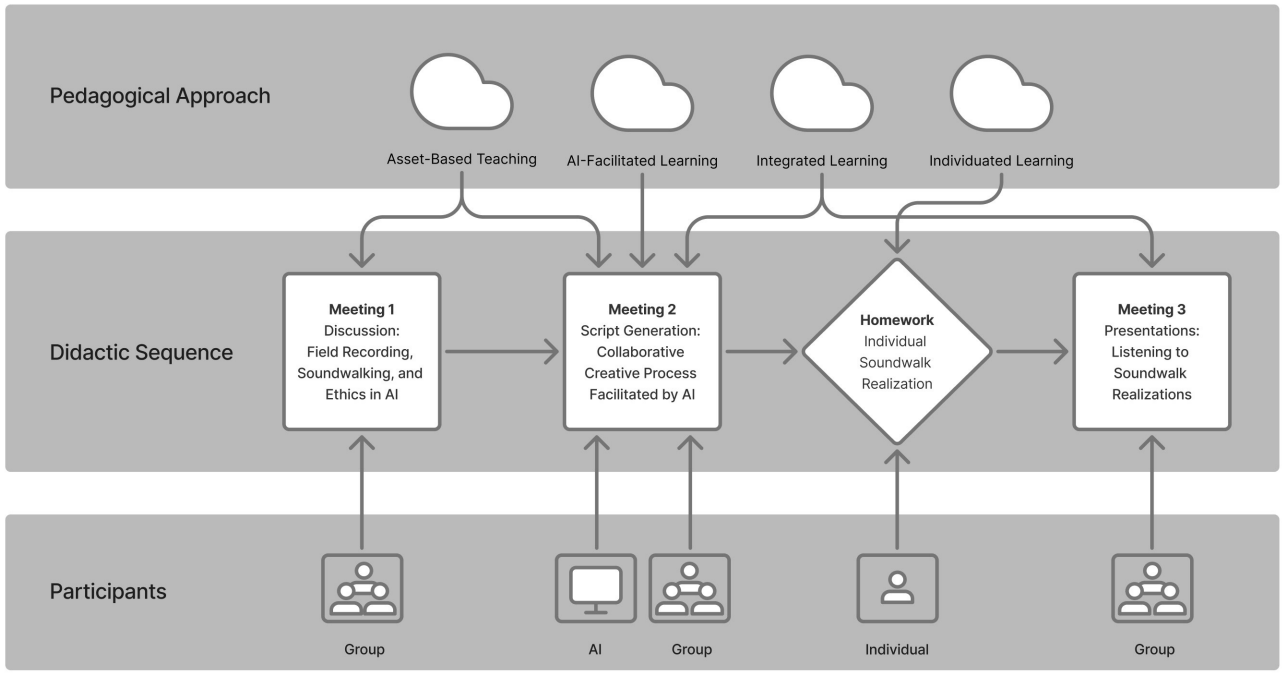

FIGURE 2
Overview of the 1-week pedagogical experiment, showing student transitions between group and individual learning, and the integration of three core concepts: asset-based teaching, integrated vs. individuated learning, and AI-facilitated learning.

4 Pedagogical experiment design and the digital media classroom

4.1 Experiment design

The project was co-developed by the authors and conducted over 1 week in spring 2023 as part of Galvão's MUS 2670 sound recording seminar at CSUSB. The class met on Tuesdays and Thursdays, with the experiment spanning two meetings for discussion and one for student presentations of their soundwalks (see Figure 2). While all students were proficient in sound recording and editing, only one had prior experience with generative AI. Galvão served as the primary instructor, while Sagesser contributed as a guest speaker.

4.2 Initial meeting and introduction

The initial class meeting focused on the topic of field recording and "the field," a rich concept defined by Lane and Carlyle as encompassing stable terrains like those in scientific observation, the fluid and subjective spaces of anthropological fieldwork, and the sensorially and contextually rich environments shaped by artistic practices, all defined by the recordist's agency (Lane and Carlyle, 2013). Students were introduced to the implications of recording sounds in uncontrolled environments (i.e., outside of a recording studio and with microphones that are prone to capturing "unwanted" sounds). Beyond an introduction to the format of the soundwalk, students were also presented with the pedagogical approach of integrating AI into this 1-week project, including a discussion on the ethics and risks of working with an AI agent, especially with a non-open-source agent such as ChatGPT.

4.3 Second meeting and AI prompting

In the next meeting, students were asked to engage in a group discussion about what sounds they considered endemic to the campus and its surrounding environment. As the students discussed their individual experiences of the local soundscape, key sound descriptors were collaboratively identified and added by the instructor to a list, which was then formatted into a text prompt and entered into a new conversation with ChatGPT. All user prompts and ChatGPT responses were visible in real time to the students, who critically evaluated each version of the text. The classroom was set up as a semicircle of chairs with the ChatGPT interface in the center and the instructor seated to the side (see Figure 1). This layout was chosen to emphasize the role of the instructor as a moderator, facilitator, and AI operator, foregrounding the collaboration between students and the AI (see Figure 3).

4.4 Soundwalk realization

Once the script had been generated, students were given four days to realize their soundwalks. The following Tuesday, students presented and discussed their results, moderated by the instructor. Later in the semester, students were asked to complete a survey about their experience.

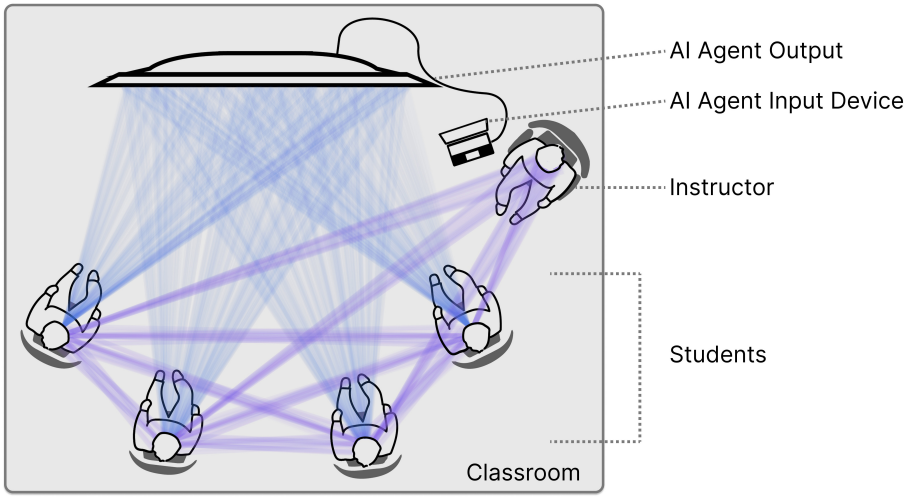

FIGURE 3
The classroom setup, showing in a qualitative approximation how the interactions in the classroom unfolded between the students, the large screen with the AI agent, and the instructor.

5 Results: collaborative AI prompting and the final soundwalks

5.1 Group process: generating the soundwalk script with ChatGPT

The second meeting of the course started with the instructor introducing the assignment, followed by a group process wherein the four students discussed the sounds that they associated with the San Bernardino area before engaging in an iterative process of text generation and revision with ChatGPT. The students collectively decided on the initial prompt, which the instructor input to the ChatGPT user interface:

> Make a short narration for a soundwalk in San Bernardino that includes night ambiance sounds, animals running around, coyotes howling, transients with their shopping carts stalling [sic] around aimlessly, fireworks, footsteps and squeaks of people walking to class, elevator sounds, chatter (Supplementary material for original NLP data)

The students then evaluated the ChatGPT's initial output, which consisted of a four-paragraph narrative that stitched together the sound descriptors specified in the prompt. While the AI successfully assembled the sound descriptors in sequential order, the students critiqued the lack of emotional descriptors in the generated text. The group collectively decided to superimpose an emotional arc on the story by submitting the following prompt to ChatGPT:

> Be excited at first, then get depressed, then make it anxiety-inducing at the end (Supplementary material for original NLP data)

After reviewing ChatGPT's second output, the students criticized it for focusing too much on emotive language and leaving out specific references to sounds. The class agreed to revert to the initial generated output with the added instruction to abbreviate the text:

> The crisp night air in San Bernardino is filled with the sound of animals scurrying around and coyotes howling in the distance. Distant fireworks add to the electric atmosphere, while the presence of transients with their shopping carts adds unpredictability.
>
> Approaching the university campus, the rhythmic sound of footsteps and squeaks of people going to class is familiar. The elevator hums mechanically before opening to a lively mix of chatter and laughter from students outside, reflecting the vibrant energy of the city at night (Supplementary material for original NLP data).

At this point, the participants agreed that the text was sufficiently concise and that it satisfied their requirements for a realizable soundwalk script.

5.2 Individual work: student realizations of the soundwalk script

After co-developing a script with ChatGPT, students individually created soundwalks over four days. While the collaborative script provided a foundation, students had creative freedom in form, content, and the optional use of a voiceover. The assignment was posted on Canvas:

> Use the AI-generated prompt we came up with in class to create a field recording/soundwalk piece. (1) You may omit or include as much of the [ChatGPT] prompt as you would like. (2) Try to record most of the sounds that you are using yourself. If you cannot record something but want to include it in your project, look for suitable recordings on freesound.org.

> (3) If you want to include a narration of the prompt, you may record it yourself or try using a text to speech narrator such as the ones found on fakeyou.com. (4) For inspiration, take a listen to Hildegard Westerkamp's work (e.g., Kits Beach Soundwalk).

In terms of equipment and materials, each student was given a Tascam DR-07 handheld field recorder (see Figure 4) and a pair of Audio Technica MTH-M40x headphones for the duration of the project and instructed to edit their soundwalk with the digital audio workstation of their choice.

Each participant created a 3–5 min stereo soundwalk, with outcomes varying significantly. Three include voiceover narration (B, C, D), while one (A) did not. Soundwalks A, B, and D each craft realistic soundscapes with unique disruptions: participant A questions realism with abrupt cuts, B layers reverberated narration, and D transforms sounds into uncanny textures. Figure 5 visualizes the resulting soundwalks.

5.3 Classroom presentations of final project outcomes

In the final session, each project was played back, followed by brief student reflections and group discussions on creative process, technical choices, and embodied listening.

5.4 Assessment of the creative process: participant survey

After the project presentations, students were asked to complete an electronic survey focusing on their use of AI in the group learning setting. It included the following questions:

> (1) Describe the piece (soundwalk) that you made in a few sentences. (2) What is special about your project, if anything? (3) How exactly did you translate the AI's

FIGURE 4
The campus of California State University, San Bernardino, with a student holding the Tascam DR-07 handheld field recorder to record site-specific audio.

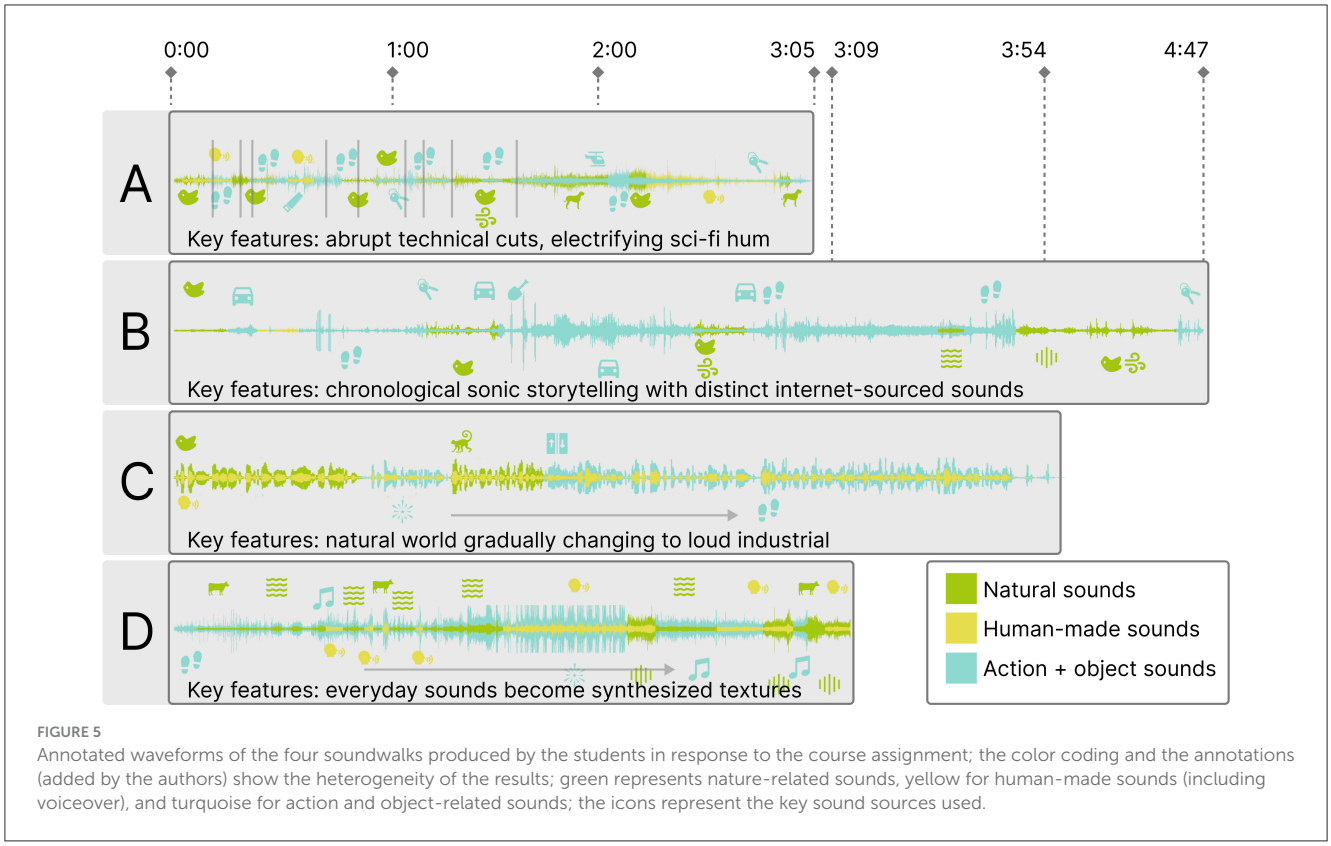

FIGURE 5
Annotated waveforms of the four soundwalks produced by the students in response to the course assignment; the color coding and the annotations (added by the authors) show the heterogeneity of the results; green represents nature-related sounds, yellow for human-made sounds (including voiceover), and turquoise for action and object-related sounds; the icons represent the key sound sources used.

soundwalk description into an actual audio piece? (4) How much experience did you have (before this project) with AI? (5) What surprised you most when creating a soundwalk with AI? (6) How did your classmates influence your project, if at all? (7) Which is the most exciting sound for you in this project? (8) Is there anything else you would like to say about your project?

6 Discussion

6.1 Limitations: small scope, control group, AI ethics, consent

The project is limited by a small sample size (four students), the absence of a control group due to class size constraints, ethical concerns around AI use in education, and by receiving student consent retroactively. These factors restrict the generalisability of the findings, though they offer qualified insights into the pedagogical process. AI can support digital literacy, motivation, and knowledge construction when used responsibly, yet it can also "encourage academic dishonesty by making it easier for students to produce work with minimal effort" (Tan and Maravilla, 2024). Companies developing AI agents now have "unprecedented influence over people and every sector of contemporary society" and, through their influence, the power to "set the agendas of universities" (Popenici and Kerr, 2017). Likewise, because AI agents are trained on data from our past, they are at risk of perpetuating historical biases (Bartoletti, 2022). While a discussion on the ethical use of generative AI was integrated into Meeting 1, the increasingly ubiquitous presence of AI in education and the arts demands a deeper and more nuanced conversation around the risks and benefits of incorporating AI tools into creative workflows. Lastly, while participants were informed and in agreement with participating in the experiment, written consent was collected only retroactively. We understand that this might compromise the autonomy of the participants and is not ideal, thus we acknowledge the ethical risks connected to retroactive consent.

6.2 An AI-assisted creative process

Participants observed that using AI to transform an unorganized list of ideas into a structured narrative can both streamline the collaborative process and limit creativity. One of the primary benefits of this AI-supported process is the ability to mitigate the effects of analysis paralysis, a state in which one becomes overwhelmed by an overabundance of creative options (Gigerenzer and Gaissmaier, 2011). By employing AI to facilitate the scriptwriting process, participants were able to focus their creative energy on the subsequent stages of recording and editing of the soundwalk script.

6.3 AI as a technological extension of the human

The question that arises when working with technologies such as ChatGPT is to what extent the creative process is ceded to AI and

how much of it remains in the hands of the participants. While it is beyond the scope of this paper to propose a comprehensive model for evaluating human-AI authorship, we can locate the process within a larger historical lineage of artists employing technological tools to aid in creative decision-making. Examples are found throughout music history, including John Cage's *Music of Changes* (Cage, 1961), which relies on chance operations guided by the *I Ching* (Cage, 1976), Iannis Xenakis' probabilistic compositional techniques (Xenakis, 1992), and the Oblique Strategies card deck used by Brian Eno and Peter Schmidt to suggest "a course of action or thinking to assist in creative situations" (Eno and Schmidt, 1975). All of these employ technology to guide creative processes; they narrow the set of possible outcomes without eliminating the artist's agency. Participant A commented that "I use [sic] the description and tried to find the best possible interpretation of it. Sometimes it wasn't obvious, or easily attainable." They added, "The actual editing portion was the most surprising part. Once I got to my daw [Digital Audio Workstation], I noticed that I had a lot of power" (Supplementary material for survey data). Despite the use of AI to facilitate collaborative script writing, participant A still felt in control of the creative process of producing a sonic outcome. Its dual role as tool and collaborator makes AI capable of both synthesizing and reframing the students' own ideas as well as introducing new, unexpected ideas into the conversation. Interestingly, participant A understands their sonic realization as the core creative process in this pedagogical experiment.

6.4 Group creativity

The AI-assisted text generation exercise works in a similar vein; as a handing off of agency between individual participants, the group, and the AI. As in the historical examples cited above, the outcome of the work is determined by the individual student, however, the process leading to the final work is a patchwork of decisions made by individual, collective, and technological agents. Proposing a teaching method for group learning settings, our research investigates this relationship through an AI-mediated modality aimed at defining the collective auditory imagination of a given place through ChatGPT-assisted in-classroom discussion. Similar to Suh et al.'s (2021) work, we use "AI as a social glue" to encourage a group creative phenomenon. As they argue, there is relatively little research exploring how AI can facilitate human-to-human collaboration in co-creation contexts; a gap that our research explores. Furthermore, we see our research as connected with related work exploring how group knowledge exceeds the sum of each participant's knowledge (Paulus and Nijstad, 2003) and how group creativity is shaped by external societal influences, internal group structure, interpersonal interactions, and strategies to enhance collaborative synergy (Zhou and Luo, 2012). Asked about how their classmates informed their projects, participant C responded that they were instrumental in the "Discussion of sounds and possible ways of going about the project but nothing more intimate" (Supplementary material for survey data). The AI-assisted group process helped them negotiate their sonic imagination with classmates, and yet they felt in control of the "intimate" individual soundwalk composition. Our survey data shows that students felt inspired and guided by the AI-generated script without feeling that they had to give up creative agency.

6.5 Soundwalking as meaning-making

Beyond exploring questions of agency in the creative process, our proposed experiment also engages with soundwalking as a process of embodied meaning-making, specifically as it relates to developing a deeper understanding of diverse experiences in shared acoustic spaces that are created, attended to, and analyzed, through listening. During the initial group co-creation process, each participant contributed their own individual experiences by identifying sounds that, to them, hold significance for the geographic location in question. Once the prompt was entered into ChatGPT, the individuality of each participant was subsumed into the collective auditory imagination of the group, as mediated by AI. Through this process of collecting individual fragments, molding them together into a whole (the AI-generated script), and re-extracting meaning through individual creative work, the participants make sense of their acoustic environment. In particular, it is in the last few steps of the pedagogical experiment—field recording and soundwalk composition—that participants explore their relationship to the sounds that make up the narrative. Asked about how they translated the AI script into an actual audio piece, participant A stated that "I had to be creative of where I stood and when I recorded. I made a conscious effort to make sure no one was around, since I knew that would affect the noise/sound" (Supplementary material for survey data). This participant explored their agency in relationship to the world around them through recording. D wrote, "[t]he sounds I picked were a bit abstract and they didn't really fit well but the result was a world that does not exist. One that is very interesting to picture" (Supplementary material for survey data). D highlights the connection between creating a fictional soundscape and visualizing the sound sources' traits, emphasizing an embodied relationship with sound through vision.

The individual realizations of the soundwalk script are visualized by the authors in Figure 5 as annotated waveforms with added color coding for the different types of source materials, and added icons for the most prominent sound sources. The comparative view over the four soundwalks supports the analysis. It reveals that each student incorporated an auditory representation of the technologized and artificial nature of ChatGPT into their soundwalk: student A through abrupt, mechanical cuts and an electrifying, sci-fi hum, student B through their postproduction-based, imagination-driven creation, as they say, of a "chronological walk around my neighborhood" without however having been in San Bernardino during the days of recording and therefore by only working with internet-sourced sounds apart from one own recording (Supplementary material for survey data). D's soundwalk gradually defamiliarizes everyday sounds into synthesized sonic textures. C's soundwalk provides perhaps the most direct commentary on the technologized creative process by layering an AI-generated voiceover over a quickly changing collage of distinct sound sources, ending with the sounds of a noisy, industrial soundscape. C writes, "It was a mash up of sounds that I used to try to recreate the scenery of San

Bernardino" (Supplementary material for survey data). The rapid pace and diverse sound mashups suggest non-human information processing, akin to training Large Language Models (LLMs).

When asked how they realized the given script, C writes, "This soundwalk also uses a bit of effects ... to give an auditory illusion that the listener is there" (Supplementary material for survey data)—a method highlighting the artificial nature of a technologically-mediated soundwalk. They continued that their result "includes recorded sounds like people, animals, and mechanical noises" (Supplementary material for survey data), emphasizing the use of recognizable, distinct sound sources to closely follow the AI script. The soundwalk comparison in Figure 5 shows how all participants, working with the same script, found a way to tell a story (A most abstract, B most linear) by exploring their own sound design techniques and by leveraging their own selection of differently recognizable sounds (B most recognizable, end of D most abstract, quasi musicalized). This demonstrates how the experiment offered the students a creative playground to explore the process of working with each other (classroom discussion), through an AI agent (classroom script generation), and individually (in the digital audio workstation).

Combining the acoustic environment with sound composition, the experiment prompted students to engage in embodied listening. Through their soundwalk realizations, they reenacted a microcosmic version of their everyday life; one in which they confronted both real and imagined actors through the creative, editorial, and technical decisions leading up to the finished soundwalk. Participant A wrote that, during the recording process, they "discover[ed] that there are more noises that make up the world then [sic] what we pay attention to. The more I was out there recording the more I felt surrounded, by a deafening silence" (Supplementary material for survey data), stressing the complex connection between listener and environment. The ephemerality through which their recordings connect them to their environment is underlined as they think "What makes my project special is how lively my surroundings happened to be that day" (Supplementary material for survey data).

Initially, students imagined generic sounds, but once in the field, they recognized that most ambient sounds are ephemeral and often ignored during recall. They learned to identify the disparity between the generalized AI-facilitated script and its specific manifestation in sound. This aided them in recognizing their role in the creative process. C wrote, "We took snips of sound the filled [sic] and created an environment giving birth to a 3 dimensional area" (Supplementary material for survey data). They felt empowered to create something new and spatial from a simple AI script. Student A agrees that the digital audio workstation gave them power, "but it wasn't needed. The most I did was just automating the volume for certain tracks. And I added some reverb for my dog barking toward the end" (Supplementary material for survey data). B felt, "I could only translate as best as I could since I was not in San Bernardino at the time of recording" (Supplementary material for survey data), revealing that their soundwalk is composed entirely of online source sounds, with one exception (see survey data), and that their connection to the sonic environment is imagined. The visualization (Figure 5) shows that soundwalk B is the most mechanical, since it primarily uses action-made and object-made sounds such as car sounds, while A, C, and D prefer natural, human-made sounds and larger transitions in their soundwalks.

The survey responses reveal how the pedagogical experiment supported the students' creative process and provided novel knowledge along the way. The heterogeneity of the resulting soundwalks gives insight into sound's ambiguity, complexity, and subjectivity in that it allows for different realizations based on the same script. As a format, the soundwalk opened up an experiential, exploratory space for students to explore creativity, agency, and their relationship to the environment through technological agents (AI, field recording, digital audio workstation). Student B concluded "I was surprised at how recreational the whole experience was! I had a lot of fun capturing the different textures of sound within my vicinity. ... It was more fun than I expected and I plan on doing this more often!" (Supplementary material for survey data). B wrote, "[I] just enjoy [sic] and thank you" (Supplementary material for survey data). The positive feedback shows that they perceived the pedagogical experiment as beneficial and "fun." The learning goals were met, and the text-based collaborative script was a useful learning element for the students to explore how specific realizations differ from it. The AI-assisted experiment increased the participants' awareness of sound, environment, and authorship.

7 Conclusion

In this paper, we have proposed a sound-based pedagogical experiment that uses an AI tool (ChatGPT) as a facilitator for a collective auditory imagining of a given outdoor site in a group learning setting. In spite of the small sample size of this experiment, the text script, the four soundwalks produced by the students, and the participants' survey responses render evident how this AI-assisted pedagogical experiment can help further conversations and critical reflection about the relationship between sonic practice, the use and ethics of AI, and distributed agency (between individuals, a group, and AI). Secondary learning outcomes include digital literacy with both NLP and sound production. We have shown that this pedagogical experiment can yield a successful collaboration between humans and technology in which each agent is able to focus on what they are particularly good at: the AI on generating what one participant called "well written text in a few seconds" (Supplementary material for survey data)—the soundwalk script—and the human participants on embodied listening, auditory imagination and soundwalk composition. What we believe is more important about this pedagogical experiment than the realized soundwalks is its ability to bring to the fore the sociopolitical issues that arise when humans—in this case a group of students in a classroom—co-create with a piece of technology, particularly AI. From an educational perspective, this also includes how human-AI collaboration is blurring the lines between group and individual modes of learning. We are convinced that sharpening current and future sound practitioners' critical faculties around the use of technology is crucial in an increasingly technologized world.

We hope that our work inspires others to explore AI in group sonic practices. As both a group project (prompt engineering) and an individual project (soundwalk composition), the experiment encouraged participants to reflect on the role of the individual in

a collaborative process as well as to think critically about their identity as an intersectional consumer (of AI technology) and creator (of prompts and sound design). Despite the small sample size and participants criticizing AI's lack of emotional depth, we demonstrate fascinating possibilities around the use of AI in a collaborative creative context. Most importantly, the experiment highlights the centrality of the human in human-AI collaboration, a fact that we believe is true for any technologically-assisted creative work. Our participants did not like the first outcome of the AI-generated script—they protested the machine's aesthetic insensibility—and hence they reasserted their creative agency until the script reached a form that suited their artistic goals both as individuals and as a group.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

All participants were fully informed about the study's purpose, their involvement, and the intent to publish the results. Written informed consent was then obtained retroactively from the participants.

Author contributions

MSG: Writing – original draft, Writing – review & editing. MZS: Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fcomp.2025.1571303/full#supplementary-material

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