Designing Characters with AI: An Art and AI Learning Activity

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Abstract

The growing impact of AI on various fields, including art, highlights the importance of integrating AI learning into art education. This work investigates whether traditional art lessons can be adapted to meaningfully incorporate AI, focusing on its application to art-making practices. We adapted a character design activity to incorporate AI at different stages, such as using AI for creating references, getting feedback, visual design, animation, and personality design. We developed a character design learning activity which was supplemented by a code notebook and a front-end character design tool. 39 middle and high school students participated in this activity during two in-person Art and AI workshops. Analysis of creative outputs, knowledge surveys, and classroom discussions showed that students showed significant shifts in their understanding of AI as a creative collaborator, their art making practice, and their confidence with using AI tools. Learners demonstrated different creative styles while adopting AI into their character design. This approach demonstrates the potential for integrating AI into art lessons and offers a scalable framework for other non-CS subjects.

Introduction

As Artificial Intelligence and Machine Learning (AIML) increasingly finds applications in creative industries such as graphic design, music, art making, animation or game design (Mustafa 2023; Fiebrink 2019), AIML literacy in creative classrooms becomes fundamental. This has led to efforts towards AIML literacy for artists and creative professionals (Fiebrink and Caramiaux 2016). At higher education levels, there are specialized courses that emerge in training creatives to be able to utilize AI in their workflow [1]. Additionally, for K-12 classrooms, several efforts have been made in the direction of promoting creative AI literacy (Ali et al. 2021; Lyu, Ali, and Breazeal 2022). These include developing K-12 appropriate AIML teaching methods (Ali et al. 2023) and designing interactive tools that engage students in creating novel media (Ali, DiPaola, and Breazeal 2021). While these approaches are adequate in providing students with essential AIML knowledge and hands-on experience, the goal still remains as teaching students about AIML concepts, and lessons do not resemble a real life art-making workflow, which is a complex iterative process involving ideation, feedback, iteration and production (Sawyer and Henriksen 2024; Runco and Chand 1995). While working with AI in their creative work, creatives can utilize AI for generating art references, gaining personalized feedback and developing novel media, and have agency over which parts of their creative project they would use AIML tools in. To further students' career readiness in creative technology fields, we developed a structured learning activity that engages students in learning about using AIML models in a holistic art-making creative process.

We developed a character design activity where students design and program characters. Borrowing from character design processes used by cartoonists and game designers, this learning activity engages learners in ideating their characters, finding relevant references, sketching or modeling the characters, gaining personalized feedback, iterating on the character, developing their characters' personality, and sharing them with their peers. The activity also familiarizes students with the uses of AI in creative workflows. Students use a Python code notebook in Google Colab [2] and incorporate the OpenAI API tools [3] to develop character prompts, gain feedback from AI, develop character personality, and share their interactive characters with their peers. A character design activity was chosen since it gives students the opportunity to imagine rich narratives around their imaginary character, takes them through multiple stages of the creative process and provides them with the agency to choose the purpose and context of the character - anime, comics, robots, games, etc. accommodating diverse interests.

Students make use of a guided character design learning activity sheet, Google Colab notebooks, Python programming language, and OpenAI's API tools (GPT-4o, GPT-3.5, and Vision) to design their characters. In a study with 39 middle and high school students across two in-person workshops, we found that students successfully collaborated with AI to create rich characters, reported higher preference and confidence in collaborating with AI following the learning activity, demonstrated an increase in AI skills, and expressed willingness to use AI in their own creative workflow. While

[1]https://opencv.org/university/mastering-generative-ai-for-art/

[2]https://colab.research.google.com/

[3]https://platform.openai.com/

students start with a guided learning activity, they adapt it to fit their own creative process. In this work, we present the guided learning activity and results from the user study. This guided learning activity is an effective tool to help young learners gain confidence in using AI tools in their creative practice and can be adapted by educators to other creative workflows like designing games or developing logos.

Background

Creative Applications of AI

AI algorithms have found applications in creative industries. Artists have used AI to create and share high quality digital art (Mazzone and Elgammal 2019); designers have used text-to-image AI models for computer aided conceptual design (Alcaide-Marzal and Diego-Mas 2025); graphic and fashion designers have used AI in their design workflow especially for ideation (Mustafa 2023; Choi et al. 2024; Jeon et al. 2021); game designers have used AI for creative game assets and game development (Chen et al. 2023); VR/AR developers and filmmakers have applied AI to generate dynamic virtual environments (Anantrasirichai and Bull 2022; Zhang 2023); researchers have created animations from children's drawings (Smith et al. 2023), and writers have benefited from partnering with AI tools, like in *Wordcraft*, for collaborative storytelling (Coenen et al. 2021). Generative AI models can compose music by learning from patterns in musical data (Anantrasirichai and Bull 2022). AI models have been utilized in post-production workflows to enhance video and image quality through techniques like deblurring and denoising (Anantrasirichai and Bull 2022). AI has also had a significant impact on the careers of artists by using datasets without artists' consent and causing them harm (Jiang et al. 2023). The impact that AI technologies have on current and future creative careers is undeniable. Hence, it is imperative for young learners interested in creative fields to learn about the creative applications and ethical and societal implications of AI.

K-12 Creative AI Learning

Developing AI literacy among youth has become imperative, now more than ever. In 2019, AI for K-12 organizations outlined the big 5 ideas of what K-12 students need to know about AI - perception, reasoning, representation, learning and societal impact. Soon after, several K-12 AI curricula were developed and deployed in formal and informal learning spaces. For instance, the Developing AI Learning (DAILy) curriculum integrated machine learning technical and ethical learning concepts for students (Lee et al. 2021). Several of these curricula also focused on the creative applications of AI and creative ML algorithms such as Generative Adversarial Networks (Ali et al. 2021) or Variational Autoencoders (Lyu, Ali, and Breazeal 2022). More recently, curricula such as PopBots and AI + Ethics have gone further by combining constructionist learning, ethics, and creativity (Ali et al. 2019). Another workshop, *Dreaming with AI*, aims to teach students how AI tools work by combining text-to-image models to express future dreams and learning about the limitations, benefits, and harms of generative AI (Ali et al. 2023). In addition to these, classroom activities were designed to introduce Year 6 students to simplified AI literacy by explaining how computational elements like loops support complex AI tasks (Ho and Scadding 2019). Storytelling activities, such as digital story writing as a pedagogical approach, have been used to enable primary school students to apply AI knowledge creatively to real-world scenarios and understand AI through inquiry-based learning (Ng et al. 2022).

Character Design and AI

Character design is the process of creating and developing visual characters for use in stories, games, animations, comics, or other media. This involves conceptualizing the character's appearance, personality, and role in the narrative. Creative character design involves developing character briefs, drawing inspiration from good reference characters, sketching and iterating on the character's visual appearance, developing the character's personalities, and testing the character with potential viewers (Tillman 2019). Character design traverses across art media (e.g. you can make characters in clay or in sketch or using digital programs), involves a rich and iterative art making practice, and can be an effective medium for artists to express cultural narratives and identities through imaginary characters. Character design also makes spaces for different styles of creativity to be expressed - verbal creativity in creating the character's personality and dialogue and visual creativity in developing the character's visual aspects. AIML tools can be applied in different parts of art making, such as creative ideation, generating media, art reflection, animation, and iteration, and off-the-shelf AI tools such as Midjourney have also extensively been used for character design (Xi and Chung 2023). Hence, we chose character design for this activity, since students can experience using AI in different parts of the creative process and have the agency to use the processes that suit their goals.

Learning Objectives

Learning objectives for the Character AI design activity foster students' art learning, AI learning and using AI in different processes in their art practice.

1. Within **art learning** objectives, the learning activity targets the creative process of ideation, production, feedback, and iteration.
2. Within **AI learning** objectives, students learn about choosing relevant AI models, adjusting model parameters for text & image generation, and writing effective prompts.
3. Learning objectives in **AI in art-making skills** targeted:
   a. Generating references for art making
   b. Incorporating references into their analog artwork
   c. Getting feedback from AI
   d. Personalizing feedback for their artwork
   e. Incorporating AI feedback in their artwork
   f. Developing the character's personality

g. Interacting with their AI characters
h. Sharing AI characters with their peers
i. Adapting AI utilities to suit their creative process
j. Extending their learning to using AI in other art making practices
k. Understanding the limitations of AI in art making

Learning Materials

Activity Design

Inspired by the traditional character design methodologies followed by creative professionals such as character artists, we developed the AI-assisted character design guided learning activity. The learning activity consisted of four character design steps. The first step is **briefing**, or describing key defending features and purpose of the character. In creative industries, this step is driven by the goal of the character design, and may be performed in collaboration with the artist's clients or teams. The second step is **referencing**, where the artist gathers images, inspirations, related characters, and setting that form as inspiration for the character. This step is also referred to as moodboarding. The third step is character **sketching**, where the artist would draw, or illustrate if using digital media, the character. This step often involves several iterations, and may also involve feedback from other stakeholders. Finally, the last step is **production**, where the artist develops high-fidelity character designs along with multiple poses or color schemes, and readies the character for sharing. Two additional steps may sometimes be performed. For some purposes, such as robotic character design or a movie character, the artist may also develop the character's **personality**, where the artist develops the character's traits, likes, dislikes, experiences, and dialogues. For animators or game designers, the artist may also **animate** the character, exploring how the character would move and express. While these are general steps followed in character design, it is of course important to note that not every artist follows each of these processes. In some workflows, different artists are involved at each step - for instance, the illustrator and the animator may be different artists. Similarly, these processes are not linear, and each artist may follow their own order of steps; some artists may develop the character's personality before sketching the character, while others may begin with sketches and look for character adaptation references. Our goal in modifying this process for AI-assisted character design is to ensure that students learn the essential steps of character creation and gain the skills needed to apply them across various aspects of the design process - developing briefs, gathering references, receiving feedback, designing character personalities, animating the character, and interacting with the character.

In the AI-assisted character design process, students follow the following steps through adaptable code blocks:

1. Briefing: Students begin by describing core attributes of their character, such as the character's name, what they look like, or what their purpose is (e.g. for children's storybook). This step also involves describing some visual elements of the character such as what they are wearing or where they are situated. Students declare several character variables, and use OpenAI's GPT-3.5 model to further develop these attributes into a character brief. (LO1)
2. Referencing: In this step, students create and organize references for their characters. Students utilize OpenAI's DallE model to generate references, and organize the desirable references. (LO3.A)
3. Sketching (or clay modeling, digital drawings): Students use their character briefs and references to begin sketching their characters. They utilize GPT-4o's vision capabilities to get personalized feedback and art suggestions on their sketches (LO3.B). Based on feedback from AI, they iterate on their sketches. They may also compare and combine multiple sketches. We use the term sketching, but this step includes different media, such as pencils, markers, clay modeling, digital drawings, paints, etc. (LO3.C,D)
4. Production: Students develop their final characters using the medium of their choosing and develop character assets to share them with their peers (LO1, 3.E).
5. Animation: Students use Meta's Sketch Animate tool to animate their characters.
6. Personality design: Students design their character's personality by defining their character's key traits, such as their likes and dislikes, and develop sample dialogues to explain how their character interacts with humans. They then use OpenAI's GPT-3.5 model to bring their character to life through an interactive chatbot, where the character can have digital conversations with humans (LO3.F,H).
7. Character conversations: Students can now engage in a chat conversation with their own character. Students use the chatbot code block to create a chatbot for their character. They feed in their character's personality traits and some sample dialogue data - or examples of how their character would talk. They then interact with their character by inputting their own dialogues and questions into the chatbot and witness how their character responds.
8. Sharing: Students then invite their peers to interact with their characters. Students then share out to the class their final characters and how they used AI (LO3.H).

While these are the steps outlined in the guided code notebook, students may choose to use the code blocks in any order. Students are also encouraged to return to different parts of the process that suit their creative needs. The individual character design activity provides students with multimodal opportunities for AI interaction including drawing on paper, modeling with clay, and creating character descriptions, generating AI-made visual design references, receiving AI feedback on character designs, and exploring character animation. Character descriptions, AI feedback, character personalities, and character chats require student prompt engineering. The entire learning activity is designed for four hours including character presentation.

Code Notebook

In order to accomplish the AI-assisted character design process, students work with OpenAI's Application Program-

ming Interface (API) in Python code. We make use of Google Colab - a web-based collaborative Jupyter Notebook service. Google Colab is used as it allows combining executable code and rich text and images in a single document- making it an effective visual guide and tool for students at different steps- and its ability to share and collaborate during programming. The activity requires no programming experience, and guides students through the basics of Python programming, debugging, and utilizing APIs. We use Google Colab's description to explain the process to students in plain English, and Colab's GUI features for them to simply modify variables without writing any code. Different code blocks executed different AI functionalities. For instance, one code block afforded learners to use OpenAI's DallE 2 model to create reference images using their character descriptions; another block allows them to use OpenAI's GPT-4o's vision capabilities to get feedback on their character drawings. Since students had little to no programming experience, we made use of Colab's rich text and interactive GUI options to help students configure variables and adapt the code to suit their character design process. Students had to write a few lines of code, but the sample code blocks made that action relatively easy.

Though the activity sheet was set up in a certain order: character descriptions → AI references → physical art → AI feedback on physical art → physical art modifications → personality generation → character chats, students were told that they could create their own workflow, which was then reflected in their character design activity sheets. Learners could use art supplies and generate prompts for the different activity parts at any stage in their creative process.

Activity Sheet

To support the programming activities in the code notebook, we utilize an activity sheet that maps exercises to corresponding action items within the Google Colab notebook. This provides a more organized approach for students to record their results after running the code. Moreover, the sheet provides a dedicated space for process reflection on character design, allowing for insight generation.

Resources and Setup Requirements

Character code notebook and activity sheet can be accessed in Google Colab. This activity requires a laptop with working internet and browser. No prior programming experience is needed. For the physical art-making, students should have art materials available.

User Study

Participants

We evaluated the character design activity with 39 participants (12 middle-, 17 high-school; 21 F, 18 M) in two separate student groups during a week-long AI workshop. 4 students (all high school) had prior programming experience. One student from the second session was excluded from the data analysis due to differentiated instruction for English fluency, highlighting language barriers as a limitation of this

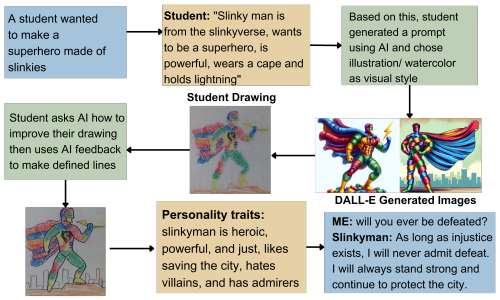

Figure 1: A student's character design process with AI

tool. Participants were co-located in a classroom with their peers.

Data Collection & Analysis

In order to investigate whether the character design with AI learning resources achieves the target learning objectives, we collected participants' completed activity sheets, their code notebooks with the revision history of their co-creation process, their created artifacts (such as sketches and clay models), and observation notes from researchers. Students' completed code notebooks with revision logs enabled us to explore our question on how students use AI as a partner in art-making practices by qualitatively coding their activity sheets according to their creative workflow process. Post activity, participants had the option to reflect on the character design activity and their perception of AI as a creative collaborator. We also administered a pre- and post-workshop survey specific to the character design activity where students were questioned about their attitudes and skills around AI tools and their confidence using AI in art (Table 2). Post activity, students were asked 25 questions about their attitudes using AI in character design, AI skills, and confidence using AI in art. 23 of these were Likert scale items where students rated items on a scale of 1-5 (1=strongly disagree, 5=strongly agree). Items included statements measuring perception of AI (e.g. "I saw the AI tool as an art partner in creating the character", or "AI was helpful in the creation process"), statements on perception of self (e.g. "I can make art in the future","I saw myself as the creator of the character") and preferences in using AI (e.g. "I was to use AI for feedback on designs in the future").

Based on the character design activity options, the workflows of each student were charted according to their Colab and activity sheet documentation. From such workflow characterization, a qualitative coding scheme (Table 3) was created according to themes that emerged from the data. Student workflows showed varying patterns in their inspiration influence (internal vs. inspiration-seeking), ideation style (mental planner vs. physical planner), AI-image satisfaction (satisfied vs. unsatisfied), and feedback application (open vs. closed). The eight codes that fell within four themes served as the coding scheme, from which workflow paths and codes were calculated. After performing within-individual analysis, patterns were detected in each session.

Listed below is the coding scheme (themes, codes, and definitions) and number of participants in each cohort falling within the different codes (Table 3).

Results

All but one participant successfully completed the design activity including creating reference prompts, creating reference images, creating sketches or clay models of their characters, getting feedback from AI and iterating on their character art, animating their characters, programming their characters' personalities and interacting with their characters (LO1,2,3.A,B,C,F,G). One participant did not have proficiency in English, and although the notebook and activity sheet offered a translation option, the sample codes were largely in English. This served as an access barrier for non-English speaking students. The rest of the students shared their projects in a final art show to their peers, educators and parents (LO.3.H).

Qualitative Findings

Analyzing the workflow, the interactions between the four themes were examined, showing 13 different workflow combinations across the two sessions, with both sessions having four combinations in common. A mix of strategies were used for character creation. Though the creative process differed between individuals and between groups, the general order remained consistent: ideation → feedback → iteration → application (LO3.I). Within these phases, 37% of the total students created a clay model for their character designs during a phase of the character creation process (LO1). Though the character personality and chat options were optional, there was a 95% completion rate of total students from both sessions engaging in these humanistic activities (LO3).

Creator Personas

The Visionary: Mental Planners As their first step, these students used prompt engineering to feed the AI tool character descriptions, features, and visual styles before creating physical drawings. Within the first session, mental planners accounted for 56% of students, while the second session was host to solely mental planners at 100% (LO3.A,B).

The Tactile: Physical Planners Physical planners, who either drew out their character designs or sculpted their characters with clay as the first step of their character design process, were only present in the first session, accounting for 44% of the students (LO1).

The Dependent: AI Inspiration-Seekers Both cohorts had a large number of students who replicated the AI character reference images when making their character designs. Inspiration-seekers in the first session accounted for 62% of the students, while in the second session, 92% of students fell under this category (LO3.E).

The Independent: Inspiration-Intrinsic The Independent persona composed of 38% of students in the first cohort, a number which dropped to 8% for the second cohort. These are thinkers coming up with their own sources of inspiration outside of the AI model.

The Fulfilled: Satisfied with AI Character Generation A majority of the students were part of The Fulfilled in both groups, with 81% of students in the first cohort and 67% in the second. These students only generated two or fewer prompts to create their AI reference images.

The Explorer: Unsatisfied with AI Character Generation The Explorers were students who generated three or more AI reference images for their characters. This number was low for both cohorts as 19% of students were unsatisfied in the first, and 33% were unsatisfied in the second (LO3.A).

The Iterator: Open to Feedback Many students took advantage of the character design feedback the AI model provided. Though 46% of students in the first session applied AI feedback to their character drawing iterations, the percentage rose to 67% of the students in the second session (LO3.C,D,E).

The Determined: Closed to Feedback Sticking to their original drawings, 54% of students in the first session chose not to incorporate the AI feedback provided to them (LO.E). Though all students prompted the AI model with feedback questions, the textual outputs didn't result in art iterations. In the second cohort, 33% of students chose not to integrate AI feedback into their final designs.

Case Study: Taylor

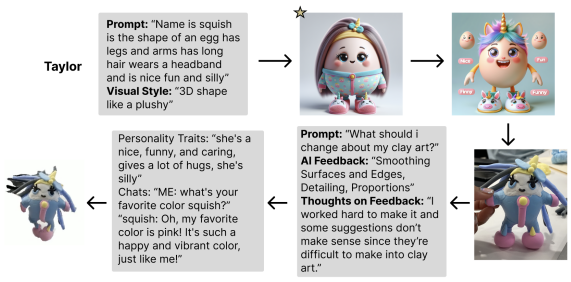

Figure 2: Taylor's creative workflow with AI starting from ideation to AI reference generation, to clay model creation, to animation.

Within the first cohort, Taylor [4], a 10-year-old African American girl, initiated her creative workflow by playing with the clay but struggled to ideate and turned to AI for inspiration (Figure 2). She planned her character through the character description prompts, creating a character named 'Squish' in the "shape of an egg." After generating a few AI references, Taylor began to sculpt her clay model, matching her selected AI reference image (*star in Figure 2). Because of Taylor's mental planning process, reliance on AI for visual inspiration, and low image generation amount, Taylor falls under The Visionary, The Dependent, and The Fulfilled personas.

After finishing her clay character, Taylor fed the image into the AI model and asked for AI feedback, asking four questions such as "*What should I change about my clay*

[4]name changed

Inspiration Influence			
The Dependent (C1: 16, C2: 11)	Uses AI for primary visual inspiration of character and matches their final creation to AI image generation.	**The Independent (C1: 10, C2:1)**	Finds inspiration from thoughts and AI-extrinsic sources.
Ideation Style			
The Visionary (C1: 15, C2: 12)	Uses character description as a first step. Has a mental vision of the character before starting.	**The Tactile (C1: 11, C2:0)**	Physically plans character design through drawing or clay before prompting AI.
AI-image Satisfaction			
The Fulfilled (C1: 21; C2: 8)	Generates AI reference images less than 3 times.	**The Explorer (C1: 5, C2: 4)**	Performs AI reference image generation 3+ times.
Feedback Application			
The Iterator (C1: 12, C2: 8)	Modifies art according to AI feedback	**The Determined (C1: 14, C2:4)**	Dismisses AI feedback and keeps art the same.

Table 1: Coding Scheme

art?" Unsatisfied with the AI feedback, Taylor commented, *"some of the suggestions don't make sense since they're difficult to make into clay art."* The dismissal of AI feedback categorized Taylor into The Determined persona group. Taylor inputted her character personality with her character targeting *"All ages and people who need a best friend."* She then started chatting with her character, asking seven questions like, *"will you be my best friend squish?"* Finally, Taylor created a character animation to bring 'Squish' to life, finding an AI companion in the process.

Surveys

Student responses on their pre- and post-study surveys revealed that after participating in the activity, more students preferred to create artwork with AI or with AI & humans (LO3.I). Participants showed a significant increase in their trust in AI to provide them with reliable feedback, their self-perceived knowledge of writing prompts, and understanding of AI (LO3.C,D,E). Students demonstrated no change in agreeing that AI can be biased. This could be attributed to an already high pre-test score in students' understanding of AI to have biases. Furthermore, students did not shift on how morally good it is to use AI to create art, and stayed somewhat neutral pre- and post-study. Regarding confidence in AI-related character design skills, students demonstrated a significant increase in overall confidence and their ability to explain how the AI works (LO2). Post activity, students also overall agreed that they saw AI as an art partner, and that they want to use AI tools to make art and gather feedback in the future. Students also overall reported finding the activity between easy to medium (mean 3.87 on a scale of 1-5, 5 easiest), high school students found the activity significantly easier (mean=4.31) than the middle school students (mean=3.2). Two students found the activity difficult (2).

When asked about their opinions of AI as an art collaborator, students generally viewed AI as a helpful tool for visualizing ideas, generating references, and overcoming creative blocks (LO3.A). One learner said, *"It allows me to see what my ideas would look like as a piece of art without having to make the art."*. Many learners emphasized the importance of balancing AI with human input. One stated, *"It's like having a real person. But if you let him do all the work, it's basically not yours,"* expressing concern that overreliance on AI might take away their creative ownership of the final product. One learner notes inaccuracy as a limitation of AI, *"I had to regenerate the pictures a lot because they were not really what I wanted,"* while another mentioned that AI struggled with details like a *"French Fry hat."* (LO3.K)

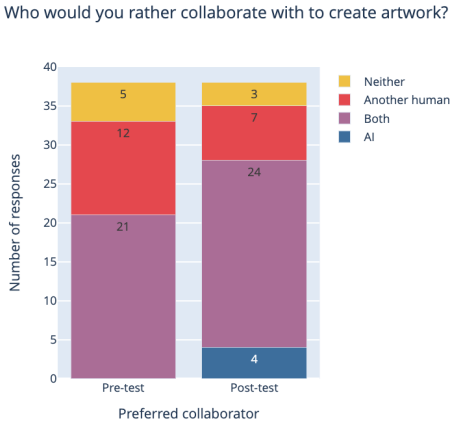

Figure 3: Post activity, participants reported higher preference of collaborating with AI and human+AI

When asked about whether AI can be used in other creative fields, most learners believed that AI can be applied to various creative fields, but retaining control is needed - particularly in music, writing, painting, coding, and video creation (LO.3.I). For example, one learner said, *"AI could help humans make cool buildings that humans may never think of,"* indicating its use in architecture and design (LO3.J). Learners see AI as useful for ideation in creative fields like these. (LO2.J.) Some learners were skeptical about AI's abilities in more human-centric activities like dance and acting.

PRE- AND POST-SURVEY ITEMS	Pre-test	Post-test	p
I do NOT trust AI to provide me with reliable feedback [REVERSE]	3 ± 0.953	2.167 ± 0.577	**0.001**
I do NOT know how to write prompts into the AI tool [REVERSE]	2.417 ± 0.669	2.25 ± 0.622	0.2931
I would agree with an AI tool on its feedback	3.167 ± 0.835	3.917 ± 0.515	**0.0217**
I understand how an AI tool comes up with its responses	2.75 ± 0.866	4 ± 0.603	**0.0002**
I am confused by how the AI tool works [REVERSE]	2.667 ± 0.778	2 ± 0.853	**0.0194**
AI tools can be biased	3.417 ± 1.379	3.25 ± 0.965	0.3507
It is morally good to use AI for art creation	2.917 ± 0.669	3 ± 0.426	0.3614
Using AI tools in code	3 ± 1.128	3.167 ± 0.718	0.3288
Using code notebooks	3.167 ± 1.193	3.417 ± 0.669	0.2455
Drawing characters	3.667 ± 0.888	3.5 ± 1	0.3614
Using reference images for character design	3.583 ± 0.996	4 ± 0.739	0.1588
Explaining how AI works to my friends	2.583 ± 1.165	3.417 ± 1.084	**0.0374**
Using AI in a different art project	3.167 ± 1.193	3.917 ± 0.793	0.0955
AI Skills and Attitudes [overall]	3.1667 ± 0.9162	3.6203 ± 0.9207	**0.000049**
AI Confidence [overall]	3.1944 ± 1.1214	3.5877 ± 0.9227	**0.0015**

Table 2: Participants showed an overall shift in AI skills and attitudes around AI as a creative collaborator, and confidence in using AI in art making. In the post-test, participants had a higher trust in, and perceived understanding of AI (Appendix).

For example, one said, *"Music, but dance... definitely not."*

Classroom Discussions

Classroom discussions after the character design activity revealed that learners enjoyed the process and reported benefiting from AI-generated references. One student said, *"I took the shading and color elements of the AI art, and I applied it to my ideas. Kind of a best of both world[s] combined."* However, some found the AI feedback to be generic. One student reported, *"I know it will ask me to add more elements, add more colors and shadows, and then praise my drawing."* Students personalized AI feedback, such as a student working with clay asked for specific suggestions with the colors available - *"I have pink, yellow and white, how can I make this (the clay model) cooler in an easy way."* (LO3.d). Students also shared their frustrations with the character design process, such as how AI was bad with creating alphabets. A student shared that AI would keep giving their Chinese Goose character traditional Chinese clothing, which was *"very stereotype and biased"*(LO3.K). Participants reported enjoyment in personifying their characters and sharing it with their peers for interactions. Some students devised novel techniques in developing their characters' personalities such as teaching it to speak in emojis.

We observed that after following the character design learning activity in a guided format, students took agency of which steps they wish to return to in order to refine their characters (LO3.E). For instance, some created more reference images, some asked new questions for AI feedback, and some developed their characters' personalities and continued having conversations with them. Four students developed their projects computationally, where they added conditions to how the character responded based on human dialogues. Hence, students were able to adapt AI utilities to suit their creative processes (LO3.J). Participants also reported the desire to have more time to complete the activity.

Conclusion

We present a character design with an AI learning activity, where middle and high school participants used a code notebook and a guided activity sheet to design interactive characters in collaboration with AI tools. A user study with 39 participants demonstrated that students could effectively use AI to generate character references, receive personalized feedback, program personalities into their characters, and interact with the characters through chat. Students could also envision ways of using these resources in other creative activities, such as creating music or games. Results indicated that middle school students may benefit from more scaffolding in the form of an introductory programming task to Google Colab and Python. We also found that while the notebook and activity sheet supported multiple languages, programming activities and classroom discussions remained non-inclusive of learners who did not speak English. Further work must involve diversifying this activity to other languages and cultural contexts. This learning resource is an effective tool for introducing youth with little to no technical experience to using foundational AI models in their creative projects. Future work must also explore how learners translate these skills into their own art making process.

Ethical Statement

The research protocol was approved by the university's Institutional Review Board. We obtained informed priot consent from participants, and their parents. Students were made aware about the abilities, limitations and ethical implications of AI tools prior to the workshop.

Acknowledgments

We are grateful to teachers and students who participated in this work; Isabella Pu, Sharifa Alghowinem, Wen Yu and Griffin Smith for teaching assistance; S.T.E.A.M Ahead, Boston Homeless Services, and the Chinese American Association of Cambridge for participant recruitment.

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