2021-2022 Amir Lopatin Fellowship Research Report:

Youth Agency in the Participatory Design & Implementation of a Social Media Platform for Schools

Emily Southerton

STANFORD UNIVERSITY

FELLOWSHIP ACKNOWLEDGEMENT

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Special consideration for the 2021-2022 fellowship was given to summer projects involving community-level fieldwork which use technology and project-based learning to make education more engaging for primary and secondary school-age students and otherwise enhance children's educational experience.

This report provides an update with regards to the full scope of the ongoing dissertation research project, "Youth Agency in the Participatory Design of a Social Media Platform for Schools," which the Fellowship supported. This report also shines a light on a summer workshop series offered in thanks to the direct support of the Amir Lopatin Fellowship.

INTRODUCTION

In January, the poet Amanda Gorman published an Op-Ed for *The New York Times* titled, "Why I Almost Didn't Read My Poem at the Inauguration." In it, she detailed the risks she took on as a young Black woman speaking publicly to a country steeped in political turmoil. It is a stark reminder that the voices of our youth do not often reach the public's ears. In fact, despite her presence on the inaugural stage, there are few spaces to safely host the work of young people, even in schools. Still, it is difficult to imagine the 2021 Presidential Inauguration without Gorman encouraging Americans to find the power to "author a new chapter" in our nation's history. Through her widely-shared performance, Gorman made the argument that youth are uniquely positioned to not only learn, but also teach, empower, and enact positive change. And given the right platform, they do.

CONCEPTUAL FRAMING

Solving our world's challenges calls for the development of agency—the will and capacity to act on the world (Ahearn, 2002)—in youth. When young people, such as Gorman, exercise agency, they put what they have learned to use to affect communities within and beyond the walls of a school (Vaughn et al., 2020). What's more, assessing the real-world impact of their work causes youth to self-direct their learning toward improving outcomes they care about (Dyson, 2020). A measure of youth agency is thus a key determinant of the impact of schooling on both students and our world.

I conceptualize youth agency in schools through an approach developed by Vaughn and colleagues that suggests it is simultaneously dispositional, motivational, and positional (Vaughn et al., 2020). The latter handles the fact that agency cannot solely be conceptualized at the individual level, because while students can work to position themselves well to create change, students can also be ill-positioned in and by their environments to do so.

Teachers and researchers have noted this environmental interactivity and suggested the importance of real-world tasks and audiences in activating student agency in schools, such as through project-based learning (Cohen & Riel, 1989). In such cases, students take creative licenses to solve actual problems and present solutions to relevant communities. Still, institutional constraints make coordinating those efforts difficult, and a large, multi-year study found that, despite authentic task and audience development being primary goals of improving education, the majority of students' assignments are still only seen by their teacher (Applebee & Langar, 2011). Students instead imagine audiences for their work, which is assessed by their teacher as a proxy for impact. In this way, schools commonly distance young people from their capacity to "act on the world," even while purportedly preparing them to activate it.

(CONCEPTUAL FRAMING CONTINUED)

Outside of school, however, there are spaces in which youth frequently create work for real-world audiences: social media platforms. In those spaces, youth choose their tasks and audiences, and subsequently exercise agency and develop skills by choice (Valkenburg & Piotrowski, 2017). In some instances, youth have used social media to build movements of social justice and change (Sinxoto, 2018). Yet, today, the most widely-used social media platforms, such as TikTok and Instagram, are not well-designed to support youth development. These platforms are, perhaps surprisingly, designed for adults, with youth users as "edge cases;" companies use this to explain why youth have (inexcusably) become collateral damage of such platforms which do more harm than good (O'Keeffe & Clarke-Pearson, 2011). Girls, in particular, are targeted by attention-driven profit models of the largest social media companies and suffer significant impacts in their health and well-being as a result (Hicks, 2021).

Still, young people continue to frequently show up for audiences of their choice —friends and young people like them—on social media platforms (Anderson et al., 2018), demonstrating a potential opportunity to reimagine these platforms for good and for academic disciplines. But it has not yet been demonstrated whether social media platforms, if designed for schools, will promote a greater sense of agency among the young in educational settings, or to what degree. It is also unclear whether or how youth might play a role in that design work. Based on my research into this question, I believe it is possible that when designed for schools, and in particular, when designed in partnership with students themselves, social media platforms will promote a greater sense of agency among youth, serving as a conduit for real-world tasks and audiences.

(CONCEPTUAL FRAMING CONTINUED)

I also believe that it is possible that project-based curricula which allow youth to imagine, build, and use their own learning environments, can promote a greater sense of agency in schools. This study is therefore intended to inform our pedagogical understanding of the extent to which agency may be fostered and encouraged in the young through deliberately focused design and writing curricular strategies, as well as digital platforms. This study's methodology and findings have broad implications for youth and all who design youth learning environments and technologies.

Research Questions:

1. To what extent does designing digital platforms for engaging real-world audiences contribute to youth's sense of having agency?
2. What challenges do youth identify through the design process in reaching such audiences, and what agentic features emerge in their prototypes to address these challenges?
3. To what extent does self-publishing work for real-world audiences in schools, using a youth-designed social media platform, increase the experience of youth agency?

METHODOLOGY

This study engages 42 middle-school girls and non-binary youth in the challenge of designing a social media platform for schools. In May of 2021, these youth participated in a two-week interdisciplinary computer science and critical literacy unit at their school in the San Francisco Bay Area. During the workshop, student groups learned to empathize, imagine, and create 15 platform prototypes that might support youth voice and agency in their school. The students illustrated design ideas in Google Sites and Slides, and presented their prototypes to their classmates and the research team. The participatory design process represented an authentic task with authentic audiences as the platforms are currently being brought to life in students' own classrooms, for implementation in the spring of 2022. The second part of the study will take place then, and will follow the implementation and iteration of the youth-designed platform in the students' school community. There, youth will self-publish school work to create impact.

In this study, youth enacted critical research methods—youth participatory action research (YPAR), in which youth conduct research to improve their communities (Kirshner, 2015) and participatory design, in which users of a technology collaborate in its redesign (Spinuzzi, 2005)—to engage with issues they experience. By identifying barriers of agency in classrooms, deficiencies in existing social media platforms, conducting and analyzing interview data with each other, and creating interventions for real classrooms, the girls and non-binary youth employed critical research methodologies. Because computer science is a field dominated by men, the efforts of these young girls and non-binary youth in redesigning digital spaces for users like themselves falls within Frierian and intersectional feminist models of change (Crenshaw, 1990), including design justice (Costanza-Chock, 2018).

SETTINGS & PARTICIPANTS

This research is taking place at a private middle school in the Bay Area. While the school is self-described as a "girls' school," it primarily serves girls, nonbinary youth, and boys. The school's yearly tuition is $34,850, and 27% of students receive financial aid. The school serves roughly 200 students, and is 51% white, 18% Asian, 18% "bi-racial," 9% Hispanic, 3% Black, and 1% Pacific Islander. The study participants reflect the racial makeup of the school and identify as girls and non-binary. They were 42 members of the 60-member 6th-grade-wide computer science classes who opted into research; all students received the curricular intervention. Supplementary research activities (interviews and optional design sessions) took place after school, including over the summer, on Zoom. The teaching and research team included three women: the students' computer science teacher, a professional user-experience (UX) designer, and myself, an ex-teacher and researcher. The students' teacher identifies as Asian American, and the designer and I are white.

DATA & ANALYSIS

This study uses a mixed-methods approach on top of critical methodologies to understand the development of agency in youth, the reproduction of agentic opportunities on their platforms, and the impact of using said platforms to self-publish work for community audiences.

Survey. The Student Agency Profile (StAP), a validated survey tool for assessing students' sense of agency (Vaughn et al. 2020), was given at key intervals before and after the design process. The StAP survey assesses the degree to which interventions, like real-world tasks and audiences, might support agency. The survey uses a 5-point Likert-like scale to measure student agency across three dimensions—dispositional, motivational, and positional—as a composite of the constructs of students' intentionality, self-perception, choice-making, persistence, and the interactivity of their environment. Survey items include, "Having different ideas from my teacher is ok," (disposition/intentionality) and prompt students to rate their agreement with the statement; smiley faces provide an additional affective visual illustration of agreement. Response options include "neither agree nor disagree." Preliminary analysis employed one-tailed paired *t*-tests and reliability was assessed through post-survey interviews.

Post-Interviews and Design Think Aloud. Post-interviews were conducted over Zoom during the week following the design unit. 15 students answered interview questions and participated in a think-aloud that were each designed to clarify and further explain survey data. During the think-aloud, students shared their screens to give a walkthrough of their team's prototype and described the intentionality behind the designed features. Data were analyzed collaboratively (Smagorinsky, 2008) with the students' teacher, using a constant comparison approach (Kolb, 2012) to explore inductive themes and establish line-by-line agreement. Deductive coding explored themes related to the agency frameworks outlined in the StAP survey (Vaughn et al., 2020), including positional codes, such as "interactivity," between students and teachers, and "sharing ideas," among student groups.

(DATA & ANALYSIS CONTINUED)

Platform and Text Artifacts (and Presentation Videos). In addition to the surveys and interviews, I explored students' platforms as artifacts, applying themes identified through student interviews and the StAP survey to understand the extent to which students designed opportunities for agency development into their platforms. Artifact analysis identified platform features (e.g., feedback and commenting) that showed up prominently across student platforms. Student presentation videos, in which students described platform features and their motivation for designing them, triangulated connections between interviews, artifacts, and designers' intentions. Text analysis of writing that students publish on the platform in the spring of 2022 will examine youth's use of these platforms, and will similarly explore themes in students' texts related to agency, using the above inductive and deductive approach.
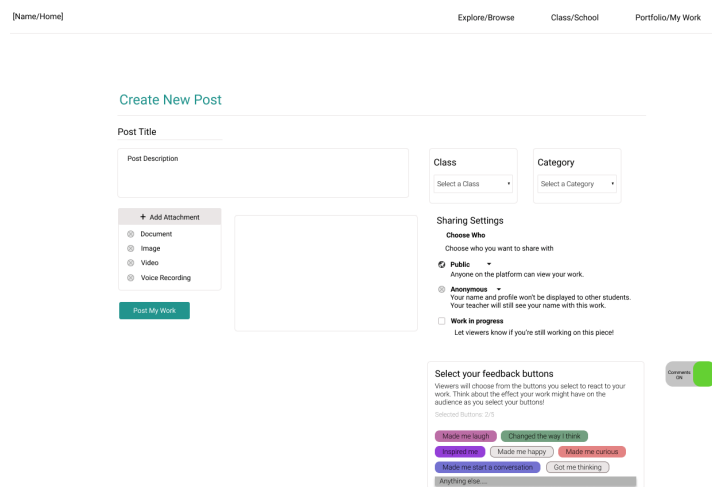
SPOTLIGHT ON FELLOWSHIP SUMMER

The Amir Lopatin Fellowship fully supported a special project-based workshop series for the students in the summer of 2021 focused on design iteration.

The summer workshop series, run by the same teaching and research team, engaged students in three major design challenges that arose from their Spring inquiry: privacy, safe and effective feedback, and encouragement to publish. Through sustained inquiry around these challenges, students examined platform prototypes and used the design cycle – empathize, imagine, and create – to iterate upon prototypes and converge on one platform design. Students learned to use the web-based prototyping tool, Figma, to illustrate their design modifications for development (Figure 1). Participating students thereby engaged in the early stages of the process of building the platforms that they designed in the Spring.

Figure 1
Sample student platform iteration of "New Post" feature with focus on choice-based commenting and one-click feedback to encourage publication without fear of bullying

Data were collected throughout the workshop series, and were analyzed and used to directly support the continued development of the final useable platform.

(SPOTLIGHT ON FELLOWSHIP SUMMER CONTINUED)

Of their involvement in the workshop, the middle school girls and non-binary youth reported a sense in pride in their participation and specifically in their ability to think about real-world problems and bring their own creative solutions to life:

- *"I am proud of creating creative ideas to [address] problems that we want to help [solve] and actually creating them."*
- *"Overall, I am proud of designing the ideas I had and [happy] that I am getting to work on this project."*

Students reported learning to use the Figma prototyping tool, and additionally reported gaining a new sense of confidence and appreciation for their design abilities:

- *"I learned that it is not too hard to design a website!"*
- *"I learned that designing is something that takes a considerable amount of time and care; I messed up a few times while working, so I learned to be more careful while working.*

Finally, students reported having fun in the workshop series, an outcome not to be overloooked in the time of online learning and COVID-19:

- *"I had a lot of fun and I learned a lot about creating a site."*
- *"I had a lot of fun doing this project."*

SIGNIFICANCE

Preliminary analyses of this full study have begun to suggest that there exists an opportunity for youth to re-design social media platforms, and possibly other learning environments, for schools and in schools. Not only do youth designers experience a significant increase in agency through the process of designing their own learning environments, but the platforms themselves are designed with agentic features to support students' future use.

This study has the potential to demonstrate that building better digital learning environments is not just a technical task for computer scientists, but one that would benefit from the type of critical re-imagining of spaces focused on the experiences of those most impacted by their harms. This research centers youth voice in the participatory design of the types of learning environments that they occupy each day. Results will help inform our pedagogical and technical understandings of the extent to which agency may be fostered or encouraged in schools.

Recommendations from prior research have pointed to the prioritization of adolescents as a primary user group in design work (Lenhart et. al, 2021), but this study takes that call a step further, and prioritizes youth as designers themselves. Implications exist for designers of youth environments and technologies, as few such studies exist to amplify the imaginings of young marginalized users through their own platform designs.

It is worth noting that this moment presents a unique opportunity for youth participatory digital design work. Key findings from research on the early integration of online learning due to COVID-19 emphasize the need for better digital environments that might support agentic learning, and in particular for our nation's most vulnerable youth (Ladson-Billings, 2021).

(SIGNIFICANCE CONTINUED)

As the dust has begun to settle on the drastic change that accompanied schools' closures as a result of COVID-19, the reopening offers the education community an opportunity for a "reset," in which we might build on a history of critical theory that has called for such a reset for decades. Now is a time to not repeat the mistakes of the past by continuing to leave out student voices; instead we must move forward with students at the forefront, toward what is necessary, possible, and imagined in the eyes of youth. Like Amanda Gorman, I believe that a child's poem and platform can change the world, and we must be courageous in our support.

> "What stood out most of all was the worry that I'd spend the rest of my life wondering what this poem could have achieved. There was only one way to find out," (Gorman, 2022).

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Amir Lopatin's legacy continues to advance the work of equity in education through the learning sciences and technology design, and I am charged and humbled to be a part of those efforts.

Without this support, I would not have been able to broaden and deepen my efforts with these 42 middle school girls and non-binary youth. In turn, it is my hope that their work in empathizing, imagining, and creating better digital tools for tomorrow will continue to exponentially advance the ideals embedded in the fellowship.

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