

Collaboration by Choice: Youth Online Creative Collabs in Scratch

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Abstract: Online creative production has received considerable attention for its success in creating Wikipedia and Free and Open Source Software yet few youth participate in such voluntary online collaborations, in particular in programming contexts. In this paper, we describe how youth programmers organized collaborative groups or collabs in response to a design challenge in the Scratch Online Community. We report on participation in the “Collab Challenge” in the Scratch community at large and with particular groups, designers’ efforts in recruiting and organizing collab groups, and the role of community feedback. In the discussion, we address what we learned about youth’s informal collaborative skills, fostering community participation, and the design of online communities supportive of creative collaboration, and open issues for further research.

Keywords: Collaboration, online community, programming

1. Introduction

Observations of social network and gaming communities suggest that collaboration among hundreds, if not thousands, of members can be productive contexts for learning [4, 5]. A number of studies have shed light on the nature and dynamics of online creative collaboration, examining knowledge communities such as Wikipedia [2] or smaller collaboratives or collabs for producing digital media [8]. However, the literature on how to organize voluntary learning-centric online creative collaborations is limited. As a starting point for our investigation, we turned to the Scratch Online Community where we organized an open, collaborative design challenge, the Collab Challenge, with the goals of stimulating youth to collaborate on programming projects and studying their collaboration in self-organized groups. With over 850,000 users primarily between 11 to 17 years old and 2 million projects, Scratch is by far the largest youth online programming community [9]. In this paper we report on participation in the Collab Challenge and youth programmers’ efforts in forming and organizing groups. We discuss the implications for design of what we learned from observing hundreds of participants, the roles that participants assume, and the performances or artifacts that result from such collaborations.

2. Background

Most of the existing literature on collaborative learning has examined the factors and arrangements of structured collaborations [3] but we know little about what youth would need to learn in order to collaborate effectively in such situations when the choice of

collaboration, partners and topic lies on the students [7]. Two recent studies on online creative collaborations among adults [8] and youth [1] found that collabs were successful when they had leaders that assumed collective responsibility [10] for coordinating work and had a high degree of communication among members. The goal of our study was to better understand the types of self-organized collaboration in the Scratch community. By looking at the breadth of participation in the Challenge, we hope to map out this new territory of collaboration by choice. This paper addresses the following research question: What were collaborative styles of groups participating in the challenge?

3. Context

To observe and encourage creative collaborations in the Scratch Online Community [9], we designed the Collab Challenge, which we announced on the Scratch website in January 2011. We issued a call for Scratch users to form teams or collabs and create a Scratch project using three pre-defined images as a constraint. Halfway through the Challenge, participants must submit a project draft for the Scratch Team to review and provide feedback. At the end of the Challenge, members of the Scratch Team reviewed the final projects based on the following criteria: originality of the project; creativity of the art, music, and animation; and elegance and sophistication of the programming code.

We collected data on participants' length of time in the community and self-reported gender, age, and location. We also collected multiple versions of projects, project comments, relevant discussions in the online forum, and statistics about the projects that included number of views, "love-its" (a measure of how much people like the project), and remixes. During the review process, we asked questions about their team formation and collaborative process. We also analyzed participants' overall Scratch website activity, including their entire history of projects and social interaction. In addition, six groups participated in a local, face to face Scratch workshop hosted by some of the authors, and these were observed closely.

4. Findings

A total of 137 collabs (341 participants) registered to participate in the Collab Challenge in January 2011. Of these, 52 collabs with 139 participants (groups with 3-7 members, an average of 2.6 members) submitted at least a first draft of their project for review. Twenty-five of those collabs submitted a final version. Of the 139 participants listed in the registration, 125 users had Scratch accounts, 34 of them self-reported as female (27%) and mean self-reported age was 17 (std=9.6), median age at 15, and mode of 13, compared to the average age of 21 (std=17), median age of 17, and mode of 14 of the rest of the community. Their projects came from a variety of genres from games to stories. The Collab Challenge seemed to attract new members to the Scratch Online Community. There were 22 participants in the challenge (17.6%) who joined the online community either within a week of the Challenge's announcement or during the Challenge. It appears these users joined solely for the purpose of participating in the challenge, either recruited by friends who already participated in the Scratch community or through local clubs and workshops that were focusing on the Challenge.

The Challenge also appears to have re-engaged more experienced, long-time members of the online community. Sixty-seven (53.6%) of the Challenge participants had been community members for more than three months, and most of these, 62 (49.6%), had been on for six months or more. Comments made by some of these more experienced

Scratch users suggest that the Challenge provided an opportunity for them to participate anew in the online community. One experienced Scratch user said that the Challenge pushed him/her to go deeper into Scratch:

Yeah, this is the first time I saw the Scratch Team create a contest so I went all out. Usually, I don't have to put too much thinking into my projects – the scripts are already in my head and I just code it up in Scratch. However, this project really pushed me. And it's the only collab project I've ever finished.

Of the 52 collabs that submitted a project, we know that at least 15 collabs were face-to-face interactions consisting either of family members or friends. Other collabs found each other online, either from previous relationships or from recruiting on the forum. At least five groups (23 participants) found each other on the forum and submitted projects. We present here three of these successful collabs and their organizational characteristic.

4.1.1 A Benevolent Dictatorship

TheWizard was for two years one of the most prominent members of the Scratch community who had announced he was going to scale down his participation on the website until the release of the new Scratch version. However, a few days after the Collab Challenge was announced, TheWizard came back and posted an invitation for people to join “TheWizard's Coolio Collab” where he described that he got inspired by a “truly good game idea,” a mix of an RPG and a fighting game. TheWizard enticed potential collaborators with fame by association, suggesting that teammates would gain popularity because most of his projects “get to the top ranked lists” on the front page. Once he approved applicants to join the group, including two relatively new members (< 3 months on the Scratch site) he gave them several options of different tasks they could work on. Five people formed the group and they went through more than 30 versions before finishing the game. Their collaborative project was well received by the community at large and it was arguably one of the most sophisticated projects submitted to the challenge. While every member of the collab contributed in visible ways, TheWizard carefully orchestrated the whole effort. Almost half of the comments on the “Coolio Collab” forum thread were posted by TheWizard. Overall, the group's organizational model was primarily centralized and dependent on a strong leader but members seemed to have enjoyed participating in it as they were most likely honored to be part of TheWizard's team.

4.1.2 A Team Effort

Like TheWizard's Coolio Collab, “The Angelic Collab” formed in the website discussion forums initiated by another experienced Scratch user Archangel. Its seven members were spread across three countries. While Archangel facilitated the group collaboration, ideas and decisions were negotiated by the group based on the feasibility and likelihood of advancing the team in the Challenge. Occasionally, a member would summarize the ideas and ask members to vote and reach a consensus to move forward. To develop the project, members split themselves up based on their interests and skills into graphic artists and programmers. Programmers would remix each other's projects to add their update to the ongoing development, while graphic artists would share their assets such as images or animations through Scratch projects that programmers would later integrate. They coordinated their exchanges and remixing through the website discussion forums, regularly summarizing their efforts and tasks to keep everyone in sync. In the end, they

produced one of the Challenge projects that received the most attention from the community. The collaborative processes of the Angelic Collab demonstrated how one collab achieved success through a shared leadership model that spread the responsibilities of organization, decision-making, and development across its members.

4.1.3 A Friendly Partnership

When the Collab Challenge was announced, experienced Scratch user Sunday from the United Kingdom asked her Scratch friend fashionista519, who was from the United States and who she “met” 5 months before in the Scratch Online Community, to collaborate on a project. When they began exchanging ideas for the Collab Challenge, they both expressed a mutual interest in making a 3D game and converged on a storyline involving a Samurai Warrior. Fashionista519 worked on developing graphics for the game while Sunday led the programming. Both showed equal dedication to their project development, meeting often online and sharing the responsibilities of the project making. To develop their project, they took turns adding code and media assets to the main project, which the other would later remix. Unlike “The Wizard’s Coolio Collab” and “The Angelic Collab”, they communicated and coordinated through their project comments and in a Scratch website gallery that held all their project versions. Whenever they spoke about their project progress, they also used that time to converse about their lives and their other interests. While both were excited at the prospect of having their project featured, working together on their project became a social activity for the two friends.

5. Discussion

The observations in three collabs we highlighted in the findings indicated that members from successful collabs exhibited qualities valuable in collaboration such as clear communication, solid leadership, and social skills to develop relationships – qualities that also emerged in previous studies of collabs [1, 8]. These findings also suggest that participating youth seem to have quite a repertoire of informal collaborative skills to handle these types of opportunistic collaboration. Analysis of failed collabs (those that did not create any projects) and the reasons behind their failure could also provide deeper insight. Beyond strategies in how to best use the Scratch website to work together, these collabs may have also needed support in how to collaborate effectively. The design of online communities to support creative collaboration must not only consider the emergent needs of their creators but also the qualities that creators must cultivate to collaborate successfully.

Ultimately, the Collab Challenge became not only a context to initiate and study collaboration by choice but also a way to engage Scratch members more deeply in their community: oldtimers came back to join collaborations while newcomers joined to do the Challenge. Some groups had members of mixed experience, allowing peer mentorship [6]. Having Challenge projects accessible for the community to view in one gallery, and especially featured on the home page, brought not only attention (views and love-its) but also many comments from the Scratch Team and broader community members, facilitating conversations amongst Scratch users at large. This finding might explain the larger appeal that online creative collaborations have for participants. Amidst all the academic benefits of collaborative work that have dominated research and practice discussions for so long, it points to a motivating dimension of collaboration that has been neglected in research. On a surface level, the presence of audience for work might provide a simple answer, but perhaps on a more profound level the striving for affinity might be a

better explanation [4] on why participants are willing to contribute, share their work, and help others. These are aspects that deserve further investigation.

Acknowledgements

The writing of this paper was supported by a grant from the National Science Foundation (NSF-CDI-1027736) to Mitchel Resnick, Yasmin Kafai and Yochai Benkler. The views expressed are those of the authors and do not necessarily represent the views of the Foundation or the University of Pennsylvania or MIT.

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