Unexpected Collaborations: Kids' Appropriation of GarageBand as a Group Creative Tool

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ABSTRACT

In this paper we present a case study of kids' appropriation of GarageBand digital music software to create an informal, ad hoc collaborative process. We argue that elements of the socio-spatial context of use combined with the software and the audio mode created a 'safe' space for collaboration and a powerful mode for informal creative exchange and feedback. We conclude with suggestions for future study and questions to consider for the design of systems to support kids' creative collaboration.

Keywords

Kids, Digital Media, Collaboration, Creativity, Ethnography

1. INTRODUCTION

One approach to the design of collaborative systems for kids is to study group work and then analyze the interactions in the group that helped, or hindered, collaboration. In this study we used ethnography to study kids' media production with technology, and our attention was drawn to a particular situation that was not intended to be collaborative group work but became collaborative in practice. An alternative approach to informing collaborative technology for kids, then, is to look at how technologies are appropriated for collaboration in specific situations.

Researchers across a number of disciplines have designed systems for fostering kids' collaboration in creative activity. Some have looked at the design of collaborative systems for specific applications, such as supporting kids' storytelling [1]. Many studies have also looked at how kids confront the problem of a single keyboard and mouse and have subsequently explored new systems for enabling collaborative activity [6, 10]. A focus on systems to support collocated collaboration is an acknowledgement that socio-spatial context is an important consideration [8]. In this paper we also discuss a collocated situation but we focus on an auditory mode over a visual one [5, 2]. We developed the following case study by watching and listening to what kids already were doing with audio-based digital media tools and trying to understand how the process worked.

2. SITE DESCRIPTION & METHODS

This case study is based on the results of six months of participant-observation at a San Francisco-based community non-profit. (hereafter, "The Center") whose thematic focus is on teaching arts and technology. The Center runs a variety of arts and digital media classes for both kids and adults. We participated in two semesters of a digital media production class. During the first session, which took place over the summer, kids came to The Center for six weeks, four days per week, four hours per day. The subsequent four month Fall session was structured as an after school program and took place three days a week for two hours. Participants ranged from age 12 to 17 although most were 13 or 14.

During our time at The Center we employed ethnographic participant observation as our primary method. We attended half of the classes each semester. During classes we took 'jottings' and later fleshed them out into longer fieldnotes [4]. After each semester we gathered our fieldnotes together and coded them in Atlas.ti, a computer-assisted qualitative data analysis package [1]. Our open coding method was based on an iterative, grounded theory approach, and was intended to aid us in organizing our notes and developing themes for future analysis [10].

In the context of this case study it is important to note that The Center actively promoted collaborative, project-based learning. The emphasis on teamwork took a number of forms. Most activities were done in teams which were usually assigned randomly or by an instructor. Instructors also usually assigned kids to formal roles. During production tasks for digital audio and video work, kids were designated 'writers,' 'directors,' 'camera-operator,' 'sound-technician,' or 'interviewer.' The participants were also encouraged, and sometimes explicitly asked, to reflect on group work at the end of each session during group discussions.

3. THE 'CACOPHONY'

Our discussion concerns kids' use of Apple's GarageBand software, an application designed to facilitate the creation of music from sampled sounds and new content. The software ships with a large library of sounds and 'loops,' short single-instrument recordings, which are pieced together on a layered timeline to form unique combinations or 'beats.' The software also allows recording, so it is possible to add other instrumental and vocal tracks to the existing library.
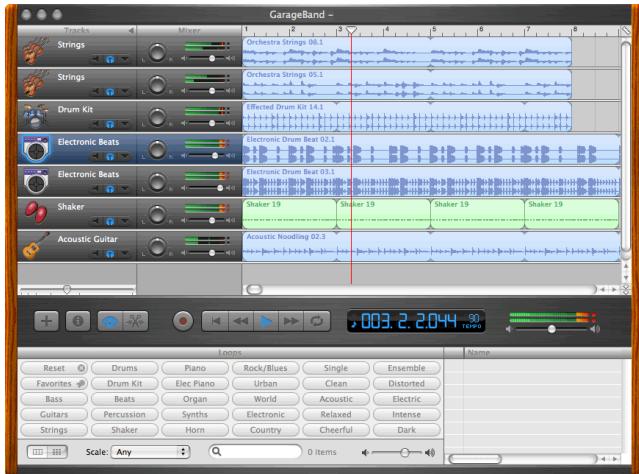
Figure 1. GarageBand User Interface: At the bottom is a browser to explore included loops. The timeline area at the top is used to layer the tracks into 'beats.'

Class instructors introduced the kids to GarageBand as a way to add background music to their video productions. We observed that while using GarageBand, the kids related to both the technology and each other in ways we did not see at other times, even during activities that were specifically designed to be collaborative. They shared ideas, exchanged knowledge and skills, and had fun. In short, it was a model of successful collaboration. But what did this collaboration look and sound like? We accumulated a huge amount of ethnographic data during our research, the details of which are scattered through this paper. However in order to convey the rich experience of GarageBand to the reader, we present the following narrative, constructed from the details of several specific instances of use.

Jake and Dawan leap out of their chairs and head for the bank of a dozen computers, eager to keep working on a beat they'd come in early to play around with. The fastest kids can make a conquest of the 'cool' computers, which are in the back, near the wall. Without headphones, however, the sense of individuality that the space affords them is mingled with the group as soon as the experimentation with sound begins.

The volume in the room is low at first, and it's easy to pick out the individual loops of sound and rhythm. As Jake and Dawan begin creating the first sounds, Tyesha, April, John, and the remaining crowd are dawdling and chatting as they amble over to the banks of computers and sit down. Soon the volume creeps upwards as more kids bring GarageBand online. The sounds gurgle and swell, becoming muddled. As the sounds become cluttered, kids turn the volume all the way up, and some pick up the small speakers that sit next to their computers and press them to their ears.

A few minutes pass and the room is a cacophony of discordant instruments and rhythms. Themes begin to pop-up seemingly at random – Dawan finds a Latin trumpet rhythm she likes, plays it a few times and soon, without discussion, three or four other kids are exploring Latin rhythms as well. They set the flavor for the beats that the group will produce today. The kids begin to exercise their personal creativity by stacking sounds and piecing them together, though many are beginning to notice the patterns. April hears a sound she just worked with coming from across the

room and yells out to no one in particular (she must yell to be heard) 'Hey! Who stole my beat?' Jorge finds a catchy hip-hop rhythm and speeds the tempo up, catching the attention of John who is sitting near by. 'That's tight!' John yells. 'Where'd you find that?' And Jorge, choosing to share, dances over to John, eager to share the treasure with him. But he only stays a moment, sensing the urgency of finishing his masterpiece before time is up.

4. GARAGEBAND INTERACTIONS

The preceding narrative details a situation where a supposedly individual activity became unintentionally, but powerfully, collaborative. The instructors saw GarageBand as an activity they could fall back on when nothing else was planned, and as a result it was a free and unstructured activity. We saw many other types of collaborative activities that were task-oriented, role-defined, and formally structured. However, few were as fun, engaging, and social from the kids' perspective, or as diversely collaborative from ours. The cacophony apparently did a lot of collaborative 'work.' Highlighting some salient elements of that work and discussing how and why it operated in the way it did is the focus of the following discussion.

4.1 Noisy

We first want to draw attention to the obvious auditory characteristics of the GarageBand experience. A room with twelve kids working on GarageBand is a very loud place. Instructors often commented on the din and suggested purchasing headphones. Ultimately we began to discourage this suggestion for a variety of reasons. First, the auditory mode provided a common space for sharing and experimentation. The noise was not merely an annoying din but a communal mixing pot for creative ideas. Second, we observed that the 'out loud' quality of the experience helped to transcend physical barriers to collaboration. When kids used LiveType, software for designing animated titles for digital video, kids had to get up and move to their friends' machines to share in the experience. GarageBand, on the other hand, facilitated that same exchange without moving the kids away from their own work. Because of the noisiness of the activity they could be in both an individual and a collaborative mode at the same time.

4.2 Unstructured

Most class activities were structured and formal – part of a curriculum that specifically encouraged group, project-based learning. In contrast, the kids perceived their time with GarageBand as a time away from that structure – a time to have fun and not worry about the expectations for results that came with structured creative work. The kids learned that scripts, notes, presentations, and the like were expected at the end of their group work. With GarageBand the kids were free to explore their creativity according to their own rules, and we observed them doing so quite often. Some kids, for example, chose to stack loops on top of each other to create complex, layered tracks while others strung one loop after another without stacking them. A few students, discovering GarageBand's voice recording capability, chose to intersperse singing, raps, or vocal imitations of instruments with loops. Each of these efforts was rewarded and acknowledged equally in the context of the creative process.

4.3 Social

We also want to place emphasis on the social qualities of the situation. Despite the individualistic nature of the assignment the process was acted out in a highly social way. This sociability was most recognizable in the kids' verbal announcements and exchanges – shouted approbations ("That's tight!"), interrogations ("Where'd you find that?"), and accusations ("Who stole my beat?!") – all of which were sometimes followed by conversations. In addition, the cacophony itself replicated these forms of sociality through nonverbal interactions. The wordless spread of Dawan's Latin trumpet beat, for example, represents a pattern of social interactions in the form of aural cues. The 'viral' mechanism through which beats moved through the social group is itself a social process.

4.4 Collaboration

We suggest that these three overlapping aspects of the GarageBand experience – noisiness, an unstructured mode, and an informal social environment – were important for fostering a informal creativity. None of the structured collaborations we saw shared the richness of these elements. The fact that the GarageBand experience shared more in common with instances of informal sociality and 'play' we saw before and after classes than with structured classroom collaborations may be evidence that the GarageBand experience was a better fit for kids' 'natural' interactions [9].

But how do we know that the GarageBand experience was a collaborative one and not merely a collocated one? The evidence is striking. We saw them sharing tricks they had learned and showing their friends where to find a particular audio loop. Spontaneous contests sprung up on more than one occasion when two kids would battle for the honor of owning the 'best beat'. More subtle evidence comes in the form of the beats themselves. They sounded the same because the kids had informally agreed on a subset of the more than 1000 loops through a collaborative process. In addition, we noted that the shared collection of loops changed between the two distinct sessions in which we participated – evidence of a collaborative creative negotiation.

Having established both that the GarageBand experience contained certain qualities and that the experience was collaborative, we have left only the connection between the two. How did the specific qualities of the GarageBand experience lead to collaboration?

5. SERENDIPITOUS COLLABORATION

In this section we make some suggestions about why the GarageBand experience succeeded as an unintended collaborative endeavor. Part of what drew our attention to the GarageBand experience was that the kids expressed how much better they liked it than other collaborative experiences. We look at the elements of this analysis from a kid's point of view, and suggest that GarageBand created a successful and likeable context for creativity for at least two reasons: (1) it created a safe environment in which kids could experiment without fear of consequences from either teachers or their peers, and; (2) it created a context for the free exchange of ideas and feedback using a mode that they were already accustomed to.

5.1 A 'Safe' Space

We argue that the success of the GarageBand experience is partly a result of the presence of a 'safe' environment for creative experimentation. Procedures for brainstorming are based upon the principal that an environment where ideas can be posed and explored without judgment or criticism fosters creativity [7]. GarageBand operated on a similar principal, but instead of a whiteboard it used the sound-space of the room. Three aspects of the activity provided this safety: the socio-spatial configurations, the noise, and aspects of the GarageBand interface.

First, each kid had his/her own computer so that ownership and control were not in question. Additionally, the spatial orientation of the machines in small clusters provided the kids with the ability to hide the visual evidence of their creativity from other kids. They were 'safe' from prying eyes.

Second, that same spatial organization allowed the audio evidence of creativity to spill into the room, where the stewing together of many beats made it difficult to trace their origins or attribute ownership without the participation of the creator. Thus, the noise we describe as a critical aspect to the experience provided some 'cover' for the work.

Finally, characteristics of the software were also important. GarageBand's user interface design encouraged creativity by separating exploration from assembly and by minimizing the cost of both. Browsing libraries of beats required little investment in time or personal ownership, and once kids decided to commit a beat to the timeline they could easily remove or edit it. The kids had a sense that their work was disposable. At the end of each semester we found the Center's computers littered with dozens of cast off files, many with titles such as "My Song" (the default file name), "My Song1," "My Song2," etc.

5.2 Informal Exchange & Feedback

The GarageBand experience allowed kids to choose whether to take ownership of their creative ideas. This is similar to many other social exchanges during which kids sometimes chose to present their ideas as 'serious' and other times as 'jokes.' By using the cacophony as a mechanism for unstructured, informal exchange and feedback, kids similarly chose the situations in which they felt comfortable taking ownership. While the lack of headphones forced a baseline interaction, that ability to choose further participation encouraged kids to express themselves.

This process worked in two stages: first an informal exchange and then a potential feedback. As we have described, kids mimicked ideas that they picked out from the cacophony. Often they chose to repeat a short clip over and over again, perhaps both to explore the sound and to announce their exploration to the group. This mimicking provided a kind of feedback to the originator of the idea that did not require him or her to take ownership of it, or even admit to having originated it. In the second stage, kids often turned to verbal feedback, ('Yeah, yeah!' or 'That's tight!') at which point the originator chose weather to respond and take credit. In this sense the context provided a kind of 'cover' which kids took advantage of based on their own comfort level. The act of taking ownership took many forms, from the overt ("That's right! Who's got a better beat?") to the subtle (a glance or a shared look with a nearby friend that acknowledges the praise).

As a final point, we wish to suggest that the preceding two factors helped give the kids a sense of ownership over the creative

process with GarageBand, and that this sense of ownership was an important enabling factor for collaboration. The kids largely chose when and how they used the software. They were given little guidance about how to create a beat, and instead took advantage of their own ideas about music. They shared knowledge about the software freely, and frequently discovered new functionality that they then took great pride in teaching to their instructors. Ultimately they 'owned' the experience.

6. CONCLUSION & NEXT STEPS

In presenting the GarageBand cacophony as a case study in kids' collaboration with digital media, we have tried to describe, and to a lesser degree explain, how the synergy of socio-spatial context and technology changed an individual activity into a collaborative one. We have highlighted the noisy, social, and unstructured qualities of the GarageBand experience, and then suggested that these qualities created a 'safe' space for interaction and a mode for informal exchange and feedback that enabled rich creative collaborations. Ultimately we have cast these experiences as providing one possible model for fostering kids' collaboration with digital media.

As a case study of collaboration with technology, we think this paper describes a context in need of further study by the CSCW community. We do not claim to have examined all its facets, and here we have tried primarily to be descriptive and suggestive. But even from this initial analysis we believe there are interesting lessons for the design of collaborative systems.

First, our case study addresses a specific instance of kids' collocated collaboration where the audio mode, not the visual one, was the focus of collaborative exchange. The GarageBand experience suggests that audio-based digital media can produce powerful collaborations among kids, and we have only begun to understand the salient qualities of those interactions. Thinking about the GarageBand cacophony as a shared space for facilitating collaborative exchange also leads us to questions about how to capture and leverage this sensory information in situations where collaborators are not collocated. How much of that information is necessary to facilitate creativity? What form should it ideally take? Finally, we believe that focusing on the collaborations we have not designed for – the situations where kids appropriate technology to meet their own needs and determine their own context – can provide a wealth of information about the ways kids intuitively create and share. These intuitive modes of working and playing can be the starting point for designing powerful collaborative system.

7. ACKNOWLEDGEMENTS

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