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Jennifer Poggiali
CUNY Lehman College

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Student responses to an animated character in information literacy instruction

Jennifer Poggiali
Lehman College, City University of New York

Abstract

Purpose: This paper reports on a grant-funded project to create a hand-drawn, custom-made animated character named Jasmyn. Drawing on animation theory, the paper uses qualitative research to investigate student responses to the medium of animation, the character's design, and three presentation strategies.

Design/methodology/approach: The researchers held three student focus groups to investigate the following research questions: 1. Will students endorse animation as a medium for library instructional videos on the grounds of its entertaining, subversive, or playful qualities? 2. Is Jasmyn designed and written in a way that engages students and compels them to respond to her as a character? 3. How will students respond to three presentation strategies: a lecture-style video, a video with supplemental animations, and a real-time, interactive lesson.

Findings: The researchers found that students expressed broad enthusiasm for animation as a medium, though responses to Jasmyn's personality were mixed. The only presentation strategy that prompted unique responses was the interactive session, although though all three focus groups provided revealing commentary about online learning. Students also identified aspects of the animation and character that could be improved, and reflected on ways Jasmyn might be integrated into online learning.

Research limitations/implications: This study, performed as part of a pilot project, was deliberately small in scale. Clearer implications would emerge from repetition with a larger group of students.

Originality/value: Jasmyn may be the only hand-drawn, custom-made animated character created for library instruction. No research studies on the use of animation in libraries have been published to date.

I. Introduction

Although animation has been used in online education for many years (Moreno, 2004), its application in library settings has been limited. On the one hand, this is not surprising considering the high costs and time investment traditionally associated with the medium. On the other hand, librarians in schools and universities have continuously striven to expand and adapt their online instructional methods, most recently responding to the demands of the so-called Millennial Generation (Harris, 2010; Eva and Nicholson, 2011; Sachs *et al.*, 2013). Librarians have sought to engage this generation with popular visual media such as comics and graphic novels (Upson and Hall, 2011; Hoover, 2012; Poggiali and Farrell, 2014), as well as with online games and tutorials (Thistlethwaite, 2001; Armstrong and Georgas, 2006; Markey *et al.*, 2008) with generally positive results.

This study began with the premise that animation and animated videos may offer an opportunity to engage Millennial students. Animation theory posits that animated characters possess unique properties that cause viewers to respond to them as "real," while conjuring an imaginative, subversive, and entertaining mental space. Animated "performances" draw the viewer into an active relationship of coanimation that, the researchers supposed, might engage students in an instructional experience. Could a playful animation, drawn in a familiar and cartoonish style, prove to be an enjoyable medium for online instruction?

With the help of a \$25,000 grant from the Institute of Museum and Library Services, two professors at Lehman College, City University of New York, developed and piloted an animated character for library instruction. Together with a team of collaborators, the professors—one the Instructional Technologies Librarian and the other an Associate Professor in the Art Department—created Jasmyn (Figure 1). Jasmyn is a hand-drawn, custom-designed animated character, built on software that allows her to be animated on the fly, much like a puppet. She can be recorded for video or operated synchronously, making real-time interaction with an animated character possible.

As part of the grant project, the researchers held three focus groups. The focus groups were designed to investigate three research questions:

- Will students endorse animation as a medium for library instructional videos on the grounds of its entertaining, subversive, or playful qualities (i.e., its animatedness)?
- Is Jasmyn designed and written in a way that engages students and compels them to respond to her as a character?
- How will students respond to three presentation strategies: a lecture-style video, a video with supplemental animations, and a real-time, interactive lesson.

Although the research design included pre- and post-tests and Likert scales, intended to measure student learning and student satisfaction, this paper reports only on the qualitative results of the focus groups (i.e., the three group discussions). Through the course of the focus groups, students commented on animation as a medium for instruction, responded to factors in the character's personality and presentation, and reflected on various scenarios for online learning. The researchers found that students expressed overwhelming enthusiasm for animation as a medium for online instruction, though responses to Jasmyn's personality were mixed. Results related to presentation strategy were less substantial. Students in the first two focus groups, which viewed videos, had mixed feelings about the suitability of online learning in various circumstances. The focus group that experienced the interactive lesson was also ambivalent about online learning, and was divided about the success of the interactive experiment.

This paper presents the results of qualitative focus group research, and reports on the process of creating what may be the only hand-drawn, custom-made animated character in library instruction.

II. Literature Review

2.1 Animation Theory

Seeking a single, encompassing definition of animation is challenging, if not futile. As Denslow (1997) explains, animation is defined and redefined as new technologies emerge that change the nature of its production and presentation. For simplicity's sake, one might accept Wells's (1998) provisional definition: "a film made by hand, frame-by-frame, providing an illusion of movement which has not been directly recorded in a conventional photographic sense" (p.10). In other words, unlike a live-action film, the movement depicted in animation never *really* took place and therefore could never be directly recorded. Animation is simulated movement, rather than a record of movement.

Crafton (2013) explores this distinction between live-action and animated films, nevertheless asserting that animation is a performative genre. He argues that, although they lack corporeal bodies, animated characters are capable of performances much like those of a live actor. Indeed, in the early decades of animation, animated characters utilized similar acting techniques as stage and film actors (which Crafton categorizes as either figurative or embodied performances). Crafton even shows how classic animated characters such as Betty Boop and Mickey Mouse attained a star status similar to that of contemporary performers like Greta Garbo and Maurice Chevalier.

As Crafton explains, the presence of a viewing audience is definitional to performance; a performance is not a performance without an audience. This means that the animator, the character, and

the audience are all implicated in the performance of an animated film. Crafton explores the status of the audience as “coanimator” of an animated performance. Among other things, audiences coanimate through their willingness to “...indulge their assumptions, exercise their imaginations, suspend disbelief up to a point, and fill in toons’ personalities. The on-screen characters come to the user with ‘some assembly required’” (6). Audiences invest in an animated character as if it were a living individual, knowing all the while that the character’s personality and body have been created by artists, writers, and other real people.

Adding to this irony is the denial of reality and embrace of playful, subversive, imaginative possibilities often seen in animated films. Bukatman (2012) identifies the unruly qualities of many animated characters as comprising “animatedness”—a word that may be used to describe comic strips, live-action movies, and other media. This animatedness draws on and brings to mind our earliest, childlike mental state: “Comics and animated cartoons are filled with tales of playful disobedience in otherworldly realms and, at the same time, themselves constitute fields to playful disobedience. They offer up little utopias of disorder, provisional sites of temporary resistance” (2). The characters that inhabit these utopias are “scamps and rascals who are either champing at the bit of authority or blissfully unaware of its expectations” (4). Think of the Road Runner and Wile E. Coyote, who are free to play out their sadomasochistic exploits on the open road, or of Stimpny compelling Ren to sing “Happy Happy Joy Joy” in an expression of false glee that is visibly painful to him.

Although a very brief exploration of animation theory, this discussion has identified a few characteristics of animation that are important to the present study. Animated characters are capable of performance, and audiences can respond to them as performers. Animations can be imbued with personalities that audiences can believe in, relate to, and enjoy, even though they understand that these personalities are not “real.” Audiences are coanimators; for a successful performance viewers must suspend disbelief, round out characters, and engage imaginatively with the animation. Further, animation often displays a quality of animatedness, which audiences may experience as a reminder of a childlike mental state—subversive, playful, and otherworldly.

2.2 Animation in Libraries

Recognizing animation’s capacity to engage viewers (Ekart, 2012; Martin, 2015), some librarians have experimented with animation generators such as PowToon, Articulate Storyline, Xtranormal, and GoAnimate to create promotional and educational materials (Ahmed *et al.*, 2015; Eva and Nicholson, 2011; Neltner, 2015), to train library staff (See and Teetor, 2014), and to enhance a semester-long, zombie-themed course on information literacy (Stahura and Milanese, 2013). Depending on the software, these animation generators may provide stock characters, often with gestures and facial expressions, as well as backgrounds, props, and templates that users can select and manipulate for their animated videos.

Despite these forays into animation, few librarians have tested the response of students to tutorials with animated characters. Thistlethwaite (2001) created an animated online tutorial that included a number of animated characters who guided students through different modules. She found that the tutorial was well-used, and anecdotal evidence suggested that it was also quite well-liked. Likewise, Skov-Nielsen (2008) reported on the use of animated characters by the library at Mount Saint Vincent University in Nova Scotia, Canada. Two avatars were added to the library website using the service SitePal. SitePal allowed librarians at MSVU to design and program the avatars to deliver recorded (i.e., not “live”) information to about the library and its services, resources, and events (Skov-Nielsen, 2008). Informal and anecdotal responses from students indicated positive responses. Likewise, a team of interns and staff at the National Library of Medicine created instructional videos on health topics using the animation generator GoAnimate (Ahmed *et al.*, 2015). They report soliciting feedback via informal focus groups of teachers and young people.

While the use of animated characters and research into their effectiveness in libraries has been limited, the literature is richer in its discussion of the separate but related area of embodied conversational agents (ECAs). ECAs are animations, often in human form, that embody the output of artificial

intelligence programming (Rubin *et al.*, 2010). Authors have posited ways ECAs (also called avatars) might be used in libraries (Balleste, 2007; Rubin *et al.*, 2010). Despite this theoretical interest, reviews of the relevant library literature by Rubin *et al.* (2010) and Liu (2011) found that implementation is rare. One exception, identified by Liu, is Neva, an embodied conversational agent available on kiosks in the McLuhan Documentation Center at the University of Lubeck.

ECAs are closely related to animated pedagogical agents (APAs), a form of embodied agent with “two distinctive characteristics: they are highly visible on the interface and their function is to promote learning” (Moreno, 2004, p.23). APAs may be represented in human or non-human form and with various degrees of verisimilitude, although in a review of the literature, Govindasamy (2014) explains that more realistic, human representations have so far been most effective. Although APAs have been implemented and tested extensively in the fields of education and educational technology (Woo, 2009; Schroeder *et al.*, 2013; Schroeder and Adesope, 2014) there is no evidence that one has been used in a library setting.

Unlike ECAs and APAs, the animated character produced and tested in this study was not powered by artificial intelligence. Further, Jasmyn was not created by an animation generator; she was custom-designed and hand-drawn following a process of character development. Like APAs, Jasmyn was used to present instructional content. However, for better or worse, her performance and personality were designed with the ideas of animation theory in mind, rather than those of educational psychology. Likewise, the process used to develop her character reflects the collaborative, iterative practice of animation professionals. In this way, it is more appropriate to place Jasmyn within the intellectual and creative context of art and animation than of educational psychology.

III. Methodology

3.1 Developing the Character and Tutorials

In the summer of 2013, author and her colleague Michael Ferraro, Associate Professor of Art, were awarded \$25,000 from the Institute of Museum and Library Services. This money enabled them to build a custom-designed animated character using animation software created by Professor Ferraro.

This animation software, used as a result of a public-private partnership, allows an animated character to behave almost like a puppet. Artists design a character and draw a series of facial expressions, gestures, and positions. Then, through the software, these positions and gestures can be performed on the fly by puppeteers equipped with a keypad. The character’s mouth, meanwhile, is voice-activated and responds to words spoken into a microphone, usually by a third individual.

To design and build Jasmyn, Professor Ferraro assembled an animation team, including an animation director, lead animator, and several student interns. Jasmyn was first developed as a character for a library-themed web comic (URL removed), and several members of the team had worked on the comic over the previous two years. For this new, animated Jasmyn, the team redesigned her outfit and hair to look more contemporary and visually appealing. The character development then proceeded with design of face chart and gestures (Figure 2).

In tandem with character development, the team also worked on learning objectives and a script. The author decided to focus on the critical evaluation of websites, and contacted a professor in the Department of Health Sciences to help develop a topic that would be grounded in an academic discipline and yet relevant and easily understood by students. The Health Science professor suggested that vaccination was a topic students would likely be familiar with, but would nevertheless require critical thinking to fully understand. Since vaccination and anti-vaxxers were cropping up in the news and on social media at that time, the topic was adopted. The author then defined learning objectives related to source evaluation and drafted a script, which the entire team reviewed and revised.

The team decided to prototype three different approaches to the same lesson. The first would be a pre-recorded video in which Jasmyn lectures with the aid of text animations and screenshots. The second approach would use the same video as its base, but add in supplemental animations that whimsically

illustrate different aspects of the script. The third would adapt the video script into a real-time, interactive lesson with Jasmyn (with a library instructor providing her voice).

At this point, the animation team began to develop the supplemental animations that would be used in one of the two videos. These animations illustrate aspects of the script in humorous and creative ways (Figure 3). They are distinct from text animations, which are used in both videos to reinforce vocabulary and main ideas, and screenshots, which capture and display the websites that Jasmyn discusses (Figure 1).

When the script was revised and complete, it was time to bring Jasmyn to life. This was done in two stages: first, a voiceover artist recorded Jasmyn's dialogue; then, Professor Ferraro was joined by a puppeteer to create a recording of Jasmyn's gestures and movements. As the audio recording played—activating Jasmyn's voice-enabled mouth movements—the puppeteer moved Jasmyn's body while Professor Ferraro manipulated her head and eyes. This tricky and highly synchronized process was repeated several times, until a satisfactory recording was captured. This recording became the basis for the videos that would be tested in two of the student focus groups.

Professor Ferraro then added the texts and screenshots described above and created camera angles and close-ups to enliven the editing. This became the “Lecture-Style” video that was shown in the first focus group (https://youtu.be/gYbL_h--hKI). To this video, he added the supplemental animations, creating the “Supplemental Animations” video that was shown in the second focus group (<https://youtu.be/aPT1OnvlyXk>).

The process of creating the interactive lesson that the third focus group experienced was similar to that of creating the videos. The puppeteer and Professor Ferraro, who were seated out of sight of the focus group participants, controlled Jasmyn's body and head in real-time. The author, also out of sight of the students, provided the voice for Jasmyn, reading from the script and asking questions of the focus group participants. She controlled the appearance of the texts and screen grabs. The author was able to see and hear the focus group participants through a closed circuit TV and microphone, and the participants saw and heard Jasmyn on a large-screen television. Unlike the students who viewed the videos, students in this focus group used iPads to view the links that were discussed in the script.

The focus groups began with the informed consent process. Students then took a pre-test, before viewing one version of the video or experiencing the real-time, interactive lesson. Next, students took a post-test and completed a Likert survey. A conversation about the experience followed, lasting between 15 and 30 minutes. These conversations were audio recorded. Pre- and post-tests were designed to evaluate student learning, while the Likert surveys were designed to provide quantitative evaluation of student satisfaction. As noted above, this article is concerned exclusively with the qualitative results of the focus groups (i.e., the focus group discussions).

When the focus groups were completed, the author transcribed the audio recordings of the discussions. She next read the transcripts, developed codes based on major themes, and coded the transcripts in Microsoft Excel.

3.2 Sampling and Recruitment

Study participants were selected using purposive sampling. Because the tutorials were designed for students who had received little or no information literacy instruction, the sample included many freshman and transfer students. In addition, the researchers thought that students in classes taught by members of the project team might provide biased commentary. They also posited that art majors or minors would be biased favorably toward animation, and attempted to filter out as many art students as possible.

Participants were recruited via a campus email and an announcement on the Library's homepage. For incentives, the students were offered a pizza lunch and \$20 in Amazon gift cards. Students interested in participating filled out a form that asked them to indicate whether they were freshman or transfer students, whether they had taken or were taking classes with anyone on the project team, and if they were art majors or minors or might be interested in becoming art majors or minors.

Three focus groups contained a total of 24 students (6 in one; 9 in the other two). Sixteen women and ten men participated. Although the study aimed to recruit freshman and transfers, last-minute cancellations and additions led to the inclusion of two returning sophomores. Likewise, these last-minute substitutions resulted in four participants who did not complete the survey questions related to enrollment in classes taught by the project team and interest in becoming an art major or minor. One student in the three study groups expressed an interest in becoming an art major.

IV. Results

This study set out to explore three research questions:

- Will students endorse animation as a medium for library instructional videos on the grounds of its entertaining, subversive, or playful qualities (i.e., its “animatedness”)?
- Is *Jasmyn* designed and written in a way that engages students and compels them to respond to her as a character?
- How will students respond to three presentation strategies: a lecture-style video, a video with supplemental animations, and a real-time, interactive lesson?

4.1 Animation as a Medium

On the whole, students felt positively about the use of animation as a medium for learning. One student observed:

“I mean...it was a cartoon so it was better than being taught by a regular person. [Lectures are] a little boring... I want something to be more entertaining. Something with color. That’s what I think the cartoon itself was able to do that.”

This student identified entertainment value as being a quality of the animation that was missing in a regular lecture. Given that the video and the interactive lesson largely followed a lecture format, this suggests that such lectures can be made more engaging merely by the use of animation. The student also refers to the “color” that is missing from lectures by real people. Although it’s hard to say without further evidence, this could allude to the playfulness and liveliness of animation—the imaginative space that *Bukatman* suggests the medium both opens and occupies.

Other students discussed the positive associations they have with animation, in words that again bring *Bukatman*’s theory of “animatedness” to mind:

“...when you use animated stuff you feel like ‘oh, something good is gonna happen.’”

“In the survey, it said if I felt like a kid because it was animation. I put I disagree, because when I was a little girl I would always see animation, so it actually makes me feel comfortable. I like it.”

These statements could, of course, be taken at face value as indications that this generation of students grew up on cartoons (just as many previous generations did) and so feel a level of comfort and delight in the medium. However, they also bring to mind *Bukatman*’s description of how animation creates worlds that resemble our earliest, childlike mental state—which is characterized by freedom, imaginativeness, mischief, and play. The first student’s gut response, “something good is gonna happen,” might have arisen from a recognition that he is about to reenter a familiar (comfortable) imaginative space.

Some students noted that they find animated videos easier to learn from, in part because they held their attention:

“...whenever I read a text and I need clarification I would go to YouTube and I would like to see animation. I kinda like that. Cause I learn better because they'll catch my attention more and they're very descriptive with the topic.”

“It doesn't matter how old are you, I think animation's just—makes you think, makes you see things easier, you know?”

Unsurprisingly, these students had a hard time defining the qualities of animation that make it “catch their attention” or “see things easier.” However, they both clearly define the medium in opposition to others—to these students, it has some special ingredient that is lacking from other instructional media.

These positive responses were consistent across all three focus groups. No student in any group vocalized a dislike or disinclination for animation as a medium for learning. As we have seen, several of their comments can be interpreted as supporting a positive response to the first research question, “Will students endorse animation as a medium for library instructional videos on the grounds of its entertaining, subversive, or playful qualities (i.e., its ‘animatedness’)?”

4.2 Jasmyn's Personality

The second research question for this study was, “Is Jasmyn designed and written in a way that engages students and compels them to respond to her as a character?” Feelings about Jasmyn's personality and her method of teaching were mixed. Some students felt drawn to the character and attributed some of the success of her teaching to her personal characteristics.

“I think her personality draws your attention, and she's outspoken and funny at the same time, so it's easier to relate to her. ... Even on a topic that might not be as interesting to others, so her attention draws you.”

“I think the character, the personality is what really tells you if the person is really at good explaining and things, because if a real person were explaining and had used the same personality as she did, it would have been the same way...”

“She was kind, I guess. Friendly. She caught my attention—I bet she caught other's attention, cause, by the way that she was able to say information. She did a good job.”

All three students quoted above showed signs of responding to Jasmyn as if she were a real person, listing her qualities as outspokenness, humor, kindness, and friendliness. Even the second student, who acknowledges Jasmyn's unreality by comparing her to a “real person,” says that both the real and the animated person would have been equally effective teachers.

Other students disliked Jasmyn's sense of humor, though they differed in their views as to the impact of this aspect of her personality on their level of engagement.

“I found it kind of corny. ... She'll make little jokes, and I could tell they were using that to try to capture the audience and try to get them more into the lesson, but the jokes came off as corny.”

“I think she tried to get our attention... Well, I don't think that that was that funny, but I think it's a—it acted as a great attention grabber.”

The first student's commentary is especially revealing. This student identified an aspect of Jasmyn's character that revealed her to be constructed—in other words, not a person. The speaker begins by saying

“She’ll make little jokes,” a grammatical structure that grants Jasmyn agency, but quickly changes direction by identifying the writers (i.e., the professors) behind the character: “I could tell *they* were using that to try to capture the audience.... [emphasis mine]” In this instance, the character seems to have failed to allow the students to suspend disbelief and accept Jasmyn as a person.

Jasmyn’s age and peer status were also factors of her personality that came under discussion. One student observed that Jasmyn’s “relatability” was crucial in holding attention and establishing the character’s credibility.

“What I like about the character is that she's relatable, especially for the demographic that is getting the information. It's really important that they get their information from somebody who they can see and accept information from. Cause sometimes, depending on who's giving us information, we actually judge it. ...so when we see a character we can relate to, we kind of take in the information more easily than we would have from a different person.”

This student took Jasmyn’s characteristics at face value, accepting her as a peer and granting her an identity, much as Crafton says is possible for audiences viewing other cartoon characters. However, another student voiced a dissenting opinion. He felt Jasmyn was less trustworthy because she had no real-world identity:

“I think it's difficult to judge because she's an animated character and you can't relate to what's behind that character.... I think you can only judge it because of her voice, [because] we don't really know who is speaking in the video.”

These contrasting comments suggest that “relatability” depends, in some ways, on the viewer’s willing suspension of disbelief. The first student quoted above accepted the character and her personality as being real, while the second student did not.

However, another astute student observed that her engagement with the video was dependent on a number of interrelated factors, including Jasmyn’s personality:

“...sometimes just to see words on a screen can be boring, but a person actually saying it—an animated person—actually draws my attention more into what she was trying to tell us. And also her personality draw us in, like it could be—there are some animations that are boring, but she said jokes such as "Duh" and stuff like that. But she kept me alert and I was interested in the video because she was an animation.”

The medium of animation, Jasmyn’s personality, and the fact that this personality is conveyed through a representation of a human form (as opposed to a paper clip, a glowing light, text on a screen, etc.) all had an impact on this student’s positive response and engagement.

On the other hand, aspects of the animation and puppeteering emerged as factors that prevented some students in the third focus group from becoming engrossed in the learning experience. During this real-time, interactive lesson two puppeteers operated Jasmyn as the author read from a prepared script. Students were equipped with iPads and encouraged to view the links and articles that Jasmyn discussed. Students in this focus group commented on the repetition of Jasmyn’s gestures and movements, a stiff quality to those movements, and her inability to walk around. One student commented:

“...I just kept seeing her moving the same way and I just kinda lost focus and just paid attention on the article and that's it. I was just hearing her instead of looking at her.”

Several students agreed with this statement, indicating that when they lost interest in watching Jasmyn they focused instead on their iPads. Another student observed a disjunction between Jasmyn's voice and face:

“The survey said that, like, ‘oh, does she not have enough facial expressions?’ and I put strongly agree... Your voice was a lot more animated than her face was, so it didn't really match up.”

Like Jasmyn's sense of humor, which dissolved the illusion of her personhood for some students, a lack of polish in the animation and puppeteering revealed her to unreality for many in the third focus group.

In sum, the answer to the second research question, “Is Jasmyn designed and written in a way that engages students and compels them to respond to her as a character?” is mixed. Many students were engaged by Jasmyn's kindness, outspokenness, and peer status and responded to her as if she were a real person. Others identified her humor, which seemed corny and calculated, and inherent unreality as factors that prevented them from suspending disbelief and engaging with Jasmyn as a character. And the third focus group, which experienced the interactive lesson with Jasmyn, noted that imperfections in her live performance hindered their engagement with her.

4.3 Responses to Presentation Strategy

Student responses to the three presentation strategies (i.e., lecture video, video with supplemental animations, or interactive lesson) were unfortunately less informative than the other areas of inquiry. For the most part, discussions of presentation strategy in the first two focus groups revolved around online learning in general, rather than on the lecture format or the supplemental animations.

However, one interesting trend did emerge from these discussions. Students expressed strong opinions about circumstances in which they preferred to experience online learning.

“I mean, it depends, because sometimes you just want to be alone and sometimes you just want to be with a class, you know? Well, it depends also on the topic. Sometimes some topics are hard, and you're gonna be like, ‘Ahh?’”

“Well, I think for me, it depends on the topic.... Cause for this type—for, like, English—it's easier...for the cartoon to tell you how to do something. But for something like science it's better, for me personally, like hands-on, instead of a cartoon or something...”

“...for math I need someone who can teach me, not a computer. Cause I try to search up examples of problems online and it never works out for me. And I need someone actually being there and giving me problems from their head, not from something generated in a computer.”

As these responses suggest, student opinions about the appropriateness or effectiveness of online instruction varied, and their perceptions of the nature of STEM and humanities disciplines often drove these observations.

The third focus group, which experienced an interactive lesson, produced more commentary about the effectiveness of the presentation style. Opinion was strongly divided about the interactive lesson and online tutorials in general.

“I think [the interactive lesson] was a bit too impersonal. ... It's just the fact that you're not there to teach us and it's a screen, even though it's your voice.... I would—if it was in a classroom or it was in a lecture—I would probably walk out, because I would feel like I don't have to stay there.”

“...I don't feel that way at all. I felt more comfortable. That's more of my element—iPad in my lap, looking at a screen—and that I feel comfortable. If I was in a class, I know that I have to stay here to learn, and it was a good lesson. I wouldn't have, like, walked out or anything.”

“I agree that it was a bit impersonal and I didn't feel so engaged because I'm so used to having an actual person there teaching me, like that one-on-one interaction. So I felt like...this was more geared towards a younger generation, like younger kids because I feel like they would be more engaged.”

On the other hand, students in this group broadly agreed that an interactive animated character, possibly communicating with them through Skype, had the potential to alleviate the anxiety they feel when they talk to or ask questions of a real person.

“...I felt like, as a supplement it would be like more of a tutoring session, kind of. Like, you know how a tutor is right there with you? Except...it wouldn't be that awkward cause you would be looking at a screen, but it would still be personal...”

“The idea of Skyping with animation I think is very interesting, cause you'd be able to ask them questions, and not be actually talking to a person.”

“[Skyping with an animated character] removes the anxiety of talking to a stranger.”

These conversations led all nine students in the third focus group to agree that they would feel greater comfort asking questions of, or interacting with, an animated character than they would a real person—even if they knew the animated character was being voiced in real-time by a real person. This strand of the discussion relates to aspects of Crafton's theory of animated performances, which proposes that a viewer can simultaneously know an animated character is unreal and yet still believe in that character's identity and personhood.

These wide-ranging discussions of online learning provide only a partial answer to the third research question, “How will students respond to three presentation strategies: a lecture-style video, a video with supplemental animations, and a real-time, interactive lesson?” While students who experienced the interactive lesson responded to it in unique ways, the students who viewed the two lecture-style videos seemed to have very similar experiences. Student commentary about presentational strategy was much more focused on the dichotomy between online and in-person learning than minor distinctions in animated storytelling. While it is disappointing to leave aspects of this question unanswered, the conversations of the students provided unexpected insights into their beliefs about online learning.

V. Recommendations

This qualitative research, even with its small focus group size and limited scope, indicates a few directions that may be promising for librarians. Firstly, with further experimentation, animation may prove a productive medium for instructional technologies. Granted, for a student to enjoy a video shown during a focus group (for which she is being compensated) is one thing; for that same student to take the initiative to watch the video on her own or to pay attention to it during a regular class, are two very different things. This study does not report on independent usage or real class engagement. Nevertheless, with the availability of low-cost animation generators such as PowToons and GoAnimate, librarians might experiment with animation in instructional technologies with relative ease and little financial investment.

When designing an animated character, librarians will likely attempt to craft a personality for that character that students can relate to and find engaging. In this study, the small population tested appreciated Jasmyn's personality and found that it drew them into the video. Many students liked Jasmyn's outspoken dialogue, kind and friendly manner. At least one comment hinted at the notion that Jasmyn's peer-status may have played a role in making her more credible to students. It is more than likely that different personality traits would appeal to different student populations, so librarians would do well to test a potential character with a focus group of their own.

However, if a personality is embodied by a less-than-believable animation, problems may arise. The students who experienced the interactive lesson were dissatisfied with Jasmyn's repetitious gestures and stiff movements, leading to a level of disengagement with the animation that might have been disastrous in a self-directed, online setting. Indeed, Mayer and DaPra (2012) have shown that students learn more from APAs that exhibit realistic, "human-like" gestures and facial expressions. Further, Kim and Baylor (2006) have posited multiple ways in which the instructional methods of pedagogical agents might be based in social-cognitive theories, but warn that the "naturalness" of the agent's behavior "may be crucial to fostering social relations with learners" (p.590). When selecting an animation generator, or designing one's own animation, librarians would do well to consider the naturalness of the character's gestures, movements, facial expressions, and voice, since these may have a meaningful impact on learning.

Opinion was divided about the various kinds of online learning the groups discussed. Some students craved interaction with a real person, and expressed doubts about their ability to learn certain topics from a video or an animated tutorial. Others sought out videos and enjoyed learning from them. Some of those students who experienced the real-time interactive lesson revealed that it would fail to hold their attention in a typical instructional setting, while others were stimulated and excited by the experience. These very divided opinions may argue for librarians to continue to offer a diversity of learning experiences for students—classroom teaching, in-person reference, chat reference, online learning modules, etc.—to suit student preferences and moods. As one student observed, "...sometimes you just want to be alone and sometimes you just want to be with a class, you know?"

One of the most surprising outcomes of the study, however, was the agreement among students after the interactive lesson that they would feel more comfortable asking questions of an animated character—even one voiced in real-time by a real person—than they would asking questions of a real person. This perspective is similar to that voiced by students in a study by Hong *et al.* (2014). This study reported on the use of an animated agent in an English language course, finding that 16 of 31 students "agreed that they felt more at ease talking to the animated agents than to the teacher" (p.390). It is important not to extrapolate much from these small studies, and to remember that students in the current study were not exposed to this exact scenario. With that caveat, it may be worth exploring the use of animated agents and real-time animation in chat reference or other forms of virtual librarianship.

VI. Conclusion

Though small-scale and preliminary, this study supports further experimentation with animation in a variety of student-centered library services. Students expressed enjoyment of and comfort with the medium, and many felt they were more engaged by animation than other types of instructional videos. These results point to new areas of experimentation: How would Jasmyn fare as an avatar through which librarians deliver virtual reference? Could Jasmyn reduce library anxiety if she appeared on a library website, or guided students through a virtual library tour? Would students be more likely to view animated videos if assigned as part of a library flipped classroom lesson? With the growing sophistication of animation generators, it is possible for librarians to begin experimenting with animation on their own, even without the unique partnership described in this paper. Animation theory can help guide these experiments, reminding librarians to create engaging characters and exploit the playful, subversive, imaginative nature of the medium.

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