The Role of Robotic Telepresence in the Academic Library

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INTRODUCTION

College students today, who are the "Millenials" (born between 1980-1999), tend to be more comfortable with technology and accepting of change because they were brought up with rapid changes in technology (Kapoor & Solomon, 2011). These students expect that their academic library and librarians will be conversant in the technologies they are used to and will offer support by having information formatted for their devices including smart phones, tablets, and mp3 players. In addition, they anticipate that communication with the library will take place online via multiple social media outlets; in the manner they are used to communicating with others in their lives. In order to stay relevant in the eyes of students, it is the academic library's charge, then, to provide these students with the technologies they know as well as to introduce them to emerging technologies with which they are not yet familiar. Given that these students have an aptitude for synchronous communication in computer-mediated environments, telepresence machines are finding important roles in the academic library.

This article will center on VGo, which is the trade-marked name of one robotic telepresence machine. There are other telepresence options available – Skype and Citrix's GoToMeeting are examples – but, in addition to audio and video, VGo has a mobility feature that makes it a virtual presence machine. The VGo robot comes with its own software that allows the user to control its movements with a mouse via a desktop computer. The audio and video elements work through the desktop computer's camera and microphone. According to the product's website, VGo "replicates a person in a distant location" (www.vgocom.com). An individual using VGo can see, hear, speak, and move as though they are physically present in another location. It has a rechargeable battery with a charging "dock" station, and offers about 12 hours of battery life in between re-charging sessions. With the screen mounted on top of the four-foot tall white frame, VGo's "body" is able to interact with either standing or sitting persons. VGo is most commonly used in hospitals in instances of remote visiting for family members, facilities training, or in allowing physicians to quickly communicate with patients situated in the other end of the hospital. When VGo has been used in education, it has largely been used in cases of immune-compromised students who are unable to physically attend classes. Usage in the academic library is thus far uncommon and presents a new opportunity to engage students with technology.

This article will describe the benefits of telepresence in the modern academic library by offering an overview of the ways in which technologies like VGo can be used in the library to enhance staffing and security, virtual reference and distance education, as well as public relations. The discussion will include the use of VGo as a mobile library tour guide and library visitor ambassador, a teleconferencing device for virtual reference and distance education students, and a robot with which students can experiment. These examples will open possibilities for other academic libraries that wish to employ robotic telepresence as an emerging technology for students.

BACKGROUND

As social beings, humans need to engage with each other. Computer mediation of this engagement will often be successful, provided that key sociological requirements are met. Today's emerging telepresence technologies like VGo are based upon this fundamental human need to communicate and connect, and these technologies attempt to bridge the physical gaps created by time and space to simulate closer human contact. Even in a heavily technology-based world, humans still desire person-to-person contact (Moody & Wieland,

2010). Today's telepresence technologies follow ideas gleaned from sociology such as the need for giving and receiving non-verbal cues, for gaining trust as well as an understanding of power dynamics, and for feeling connected to another individual without being distracted by the workings of the telepresence technology itself.

Johnston and Spicer (2012) define emerging technologies as being "promising new and developing technologies that are likely to have a large impact on teaching, learning, research, or creative expression within the university environment" (p. 68). These technologies need to help solve problems, expand library services, and ensure viability of services while saving money (Kajewski, 2006). When introducing an emerging technology into the library, it is important to have staff with know-how, users with interest in the technology, and a certain level of buy-in for it to become incorporated into library usage. While staff resistance to new technologies sometimes persists, often it is remedied by a clear description of what the technology can and cannot do. This concept of "affordance" describes the way that a technology works and what it can and cannot allow the user to do (Willcockson & Phelps, 2010). Staff members with a particular aptitude or knowledge of the technology might assist in bringing their library colleagues along in learning the new technologies (Johnston & Spicer, 2012). Collegial teamwork in learning a new technology can reduce the workload and leverage the skills within the group (Willcockson & Phelps, 2010).

Part of the goal of telepresence is using the technology to help build and maintain relationships and to decrease the amount of passivity that might occur with non-telepresence technologies (Moody & Wieland, 2010). Stafford and Lindsey (2007) note, for example, that asynchronous web delivery of computer-mediated courses is not satisfactory to all learners. They found that in "videoconference formats, social cues are strongly represented, in comparison to strictly computer-mediated instruction formats" (p. 229). We rely on non-verbal cues in our daily interactions. Being able to see the speaker and read his or her non-verbal cues can allow students to gain a deeper understanding of the material both by relating to the person and also by better understanding non-verbal cues. It is easier to engage with a real time conversation than with asynchronous content that does not provide nuance or non-verbal context.

The role of non-verbal cues is just as important in the realm of reference interactions as they take place in the library. Virtual reference, as it pertains to technologies such as e-mail, chat services, and instant messaging, allows student library users to have "scheduled synchronous contact with a librarian" (Steiner, 2011, p. 448) while they are not physically present in the library. Academic libraries need to ensure that they are serving all of their patrons, regardless of their physical location (Duncan & Gerrard, 2011). However, communication barriers arise and it is difficult for the librarian and the student to engage effectively with each other (Steiner, 2011). The librarian's role is to be approachable and that approachability is what one hopes will lead the student to a teachable moment. Without subtle non-verbal cues and without the ability to show screenshots or do co-browsing, much of the opportunity to teach is lost. Telepresence enables the librarian and the student to see each other while the librarian demonstrates a catalog search or a technological skill. The converse of this, of course, is the shy student or the student with a question who would rather remain anonymous while asking. For these students, non-verbal cues and face-to-face contact are less important than remaining anonymous. They want to attain the information important to them but do not want to be "judged" or queried in a way that seems personal. The anonymity provided by technologies other than a telepresence like VGo allows students to approach a librarian with a question they might otherwise be too embarrassed to ask (Godfrey, 2008). The lesson here is that telepresence is not without its faults. On the one hand, it enables virtual face-to-face contact, and on the other it can remove the anonymity shy students seek.

Perceptions of formality or informality and politeness or rudeness are essential to a successful reference transaction between a student and a librarian. Formality, both in the specific employment of words and in overall communication style, can indicate the librarian's level of expertise and establish trust on the part of the student or library user (Westbrook, 2007). According to Westbrook, in chat reference, users may "be more open to inferring politeness or rudeness from relatively small indicators" (p. 641). Needless to say, this can quickly lead to miscommunications. Chat only allows for quick, often abbreviated, written words. There are few ways to communicate "tone" beyond a few rudimentary emoticons allowed by some chat programs. Students can misconstrue the brevity

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