

The Use of Computer Based Technology in
Art Therapy with Adults who have Severe Physical Disabilities

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Abstract

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The following qualitative research paper explores how the computer can be incorporated into an art therapeutic practice as a tool for art making when working with adults who are living with severe physical disabilities. The computer acts as a mediator that helps foster a sense of mastery, offers control over an art making process, and aids in the development of a positive self-concept when working in art therapy with adults who are living with chronic physical illness and limited mobility. Using a theoretical methodology and clinical vignettes, this paper examines how traditional techniques such as drawing, painting, and collage have been adapted using modern technology to meet the needs of clients who are living with physical disabilities. Advancements in new technology offer art therapists the ability to reach more individuals and diverse clinical populations. By incorporating technology into art therapy it has expanded the possibilities for clients who have physical limitations to engage in an art therapeutic process, where the artwork is created not by the therapist, but by the client. Art becomes a mirror, a container, and a witness to many personal struggles for individuals who are living with chronic illnesses.

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Chapter One: Introduction

The use of modern technology is an ever growing trend in the field of art therapy. Today we are surrounded by technology. Whether or not we choose to integrate these new methods into traditional art therapy practice is a continual question we must ask ourselves. How might incorporating technology be advantageous for our clients? What kind of clientele might benefit most? Will technology eventually replace the use of sensory rich art materials and processes? What are the inherent qualities of new media? How does it affect the client/therapist relationship? If we don't incorporate technology into practice is our field falling behind? All of these questions and many others flood my thoughts and have been a hot topic in art therapy literature over the last decade. In 2009, an entire issue of the Journal of American Art Therapy Association was dedicated to exploring the use of new technologies in art therapy with various populations. Penny (As cited in Kapitan) wrote, "Information Technology is a steamroller, and if you are not on the stream roller, you're going to be part of the road" (2007, p.50).

The topic of art therapy and the use of technology in practice with clients is currently up for debate. Although many art therapists have written about technology and its potential use while working with this very population, there are very few clinical examples. (Malchiodi, 2000; McLeod, 1999; Parker-Bell, 1999). Orr (2005, 2009), Asawa (2009) and Peterson, Stovall, Elkins and Parker-Bell (2005) have all either surveyed or interviewed art therapists about the benefits and limitations of technology in art therapy, asking which clients might benefit most from this service. One of the most common responses was that technology would increase access to art therapy for various individuals who have limited mobility. Yet, only 9.5-12% (Asawa, 2009) of art therapists

admit to using technology with their clients to create art, and none of these practitioners refer to its direct use with clients who have physical disabilities.

The aim of this paper is to not only explore the potential application of technology in art therapy but to provide case examples of how I have adapted the traditional techniques of art therapy using computer based technology with clients who have severe physical disabilities; disabilities that are often the result of a long history of chronic physical illness. Through a thorough examination of literature I will describe art therapist's hesitations as well as successes when incorporating technology into their own clinical practice with varying populations. I aim to demonstrate how other art therapists, as well as myself, have adapted the traditional tools and materials of art therapy while incorporating technology in working with individuals with very limited physical abilities. I will explain how traditional techniques such as drawing, painting and collage can be achieved by using digital media. Art therapy has been described as a process which can enhance self-esteem and improve one's self concept and I will argue that this may even be strengthened with the use of advanced technological tools.

Art therapy is a process where one achieves a sense of mastery of one's own creations and builds confidence through a process of self-awareness and meaning, all within a safe space in the presence of trained and caring art therapist. By using new technology in art therapy, clients who have varying physical abilities can engage in an empowering and motivating journey. When faced with both physical limitations and chronic physical illness art therapy may provide individuals with an alternative means of expression and communication.

Statement of Purpose

The goal of this research is to address the question of how computer based technology can facilitate the process of art therapy with adults who have severe physical disabilities. I aim to examine both the limitations and benefits of using computers as a tool to create art with people who have physical disabilities as well as describe the efforts that art therapists, past and present, have made in incorporating digital imagery technology (DIT) in their therapeutic practice as a tool for art making. Although there has been very little research written describing how traditional materials and new media have been adapted to meet the needs of people with physical disabilities, many art therapists have described the potential it could hold (Asawa, 2009; Malchiodi, 2000; Orr, 2005; Parker-Bell, 1999; Peterson, Stovall, Elkins & Parker-Bell, 2005; Weinberg, 1985). Orr (2005) explained how computer based technology may offer clients the ability to produce art, an opportunity they may not have had otherwise. While creating artwork, these individuals may acquire specific skills through the use of modern technology, and feel a sense of empowerment and control often leading to an increase in confidence and self-esteem. I would like to contribute both, to the body of knowledge in art therapy regarding working with people who have physical disabilities and the use of modern technology in the contemporary field of medical art therapy.

Definition of Key Terms

Physical Disability: “A condition where a person experiences significant deviation or loss in their body function or structure that results in physical limitations in their physical activity that may affect their participation in life, depending on the context within which they live” (Taleporos & McCabe, 2005, p.683).

Severe Physical Disability: In the context of this paper I have defined severe physical

disability as a condition in which the person has severe limited ability to move their body, this could include a person who is considered quadriplegic where their arms, legs, and torso are paralyzed and they may only have the ability to make slight movements with their head and neck.

Chronic Physical Illness: A long term physical illness that has no known cure, and or illness that limits an individual's physical functioning.

Amyotrophic Lateral Sclerosis (ALS): Is a progressive and fatal neurological disease. People living with this disease become progressively paralyzed and unable to breathe or swallow. There is no known cure or effective treatment to date (ALS Society of Canada, 2011).

Duchenne Muscular Dystrophy: A progressive genetic neuromuscular disorder which causes delayed development of muscle coordination and skills in childhood. In some cases, individuals will lose the ability to walk, speak, and breathe on their own. (Muscular Dystrophy Canada, 2011)

Digital Imagery Technology: "The collective digital tools that are used to create art and not a specific device" (Peterson, 2006, p.2).

Computer Based Art Making: A circumstance in which the computer and more specifically a particular arts based software program is used to facilitate the creation of a digital image.

Assistive Technology: "Any item, piece of equipment, or product system, whether acquired commercially, off-the-shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disability (US Government Printing Office, 2005).

Methodology

The present research uses primarily a theoretical methodology with integration of case material in the form of vignettes. Junge and Linesch (1993) describe theoretical research as the following “theoretical research, including critical theory, critiques and integrates existing theories in an attempt to generate new knowledge and theory” (p.66). Haverkamp and Young (2007) support this by describing the purpose of theory or construction based research as to “elaborate elements of a theory in new domains, or to expand researcher’s understanding of specific constructs” (p.273). Because little literature currently exists describing both art therapy and implementation of new technology while working with adults who have physical disabilities, I will be pulling from multiple sources of literature including advances in art making and technology, technology in art education, technology in art therapy with various populations and psychotherapy with adults who have physical disabilities. In essence, I will be generating new theories, or new ways of thinking about working in art therapy with a specific population based on these multiple sources of knowledge. I will be assessing the effectiveness of using technology with adults who have limited mobility by reviewing and critiquing past and current literature that is relevant to my research topic.

When writing a theoretical paper, primarily the data, is the theory itself (Junge & Linesch, 1993). Cohen and Manion (As cited in Gilroy, 2006) explain the main stages of theoretical research and I have followed a similar pattern of analysis. First, I began by collecting, selecting, verifying, and organizing data. Once I had conducted an extensive literature review I systematically engaged in note taking and identified keywords or topics that reflected common themes surrounding my research topic and began to put

meaning to the chosen topics that became my theoretical foundation. Patton (As cited in Marshall & Rossman, 2010) described this process as “a means of attaching significance to who and what was found, making sense of the findings, offering explanation, drawing conclusions... and imposing order” (p.219). In a parallel process, I have assessed when and how to incorporate case material to support or disconfirm the theories and emerging themes I discovered. This process allowed me to integrate case material as well as current and past theories in situating art therapy combined with technology as a means to facilitate a healing process while working with adult clients who are living with severe physical disabilities. I will begin by describing current and past efforts by art therapists to incorporate technology into clinical practice while highlighting both the benefits and limitations.

Chapter Two: Art Therapy and the Integration of Modern Technology

Haven't we all, at some point, picked up a cell phone, used a laptop computer, or turned on our television or DVD player using one of our multiple remotes? Perhaps we own an MP3 player or maybe even the newest IPAD. Some of us have even had the pleasure of engaging in the creation of art via a technological device. Have you ever tried the paint program embedded in your computer, when you first purchased it? A personal computer was a novelty 15 years ago. Today the computer has become a standard item in schools, hospitals, studios, and is becoming a standard item in art galleries and museums across the globe. The computer is increasingly being used as a tool for art making across various disciplines including art therapy.

Freedman (1997) explains that, when teaching art, it is important that teachers explore the ways in which their student's use technology in their everyday lives. Video

games, television, and the internet are very seductive for a younger population. Freedman described the every growing concern that students will become isolated and antisocial when given the opportunity to sit in front of a screen rather than engage in social activities with friends. New technologies have also been a source of networking and global connection. People are sharing and creating art on a global scale made possible by multiple technological advancements.

Computer technology, both in terms of hardware (the computer system itself) and software (the programs by which one can create art), are being used as a new media for artistic expression. Biswas (2008) writes “adoption of computer technologies in art practice have challenged the limits of these technologies and stimulated their development” (p.67). Artists are now working with graphics designers and software creators so that they can use the computer to the best of their ability, as a tool for art making. This being said, the computer is a very adaptable tool, and is often an easily accessible one for so many individuals, no matter what their age. Drunker (1997) explores the idea that the only limit to using computers as a tool for art making is our own human imaginations. He explains that with increasing experience also comes increasing skepticism, yet new tools are the foundations for new ideas.

When creating art using pre-constructed software programs the question must be asked, “who is the artist”? Is it the software programmer or the person sitting in front of the screen, using the tools and creating the image? If the software being used has a wide variety of tools and offers the artist as much control as possible we could argue it is then the user who is truly the artist. Artwork made on the computer also has a very seductive quality. The way light is emitted and reflected offers the person creating the image

alternating points of view, the ability to engage in trial and error while maintaining the original image and the capacity for serration, which can be defined as the capacity to create multiples of an image without destroying the original (Freedman, 1997). With the benefits come the limitations or downfalls of using technology in the process of art making and this debate has been a heated one in the field of art therapy. Not only are art therapists beginning to argue whether or not the computer is a valid tool for art making, they are debating whether or not it holds a therapeutic potential.

The Debate: Art Therapists Reactions to Technology

As far back as 1985, art therapists had begun to incorporate new technology in art therapy as a way to meet the needs and demands of a growing clientele (Weinberg, 1985). But not all art therapists agree on its potential use in art therapy for varying and often valid reasons. Orr (2006) surveyed 177 both registered and student art therapists and found that only 9.5 % reported having received any training regarding the use of technology in their art therapy programs and only 19% reported using technology with clients as a tool for digital art making. In a 2005 survey, Orr found that only 17.9% used technology to create digital artwork. Asawa (2009) was more interested in the reasons behind why art therapists chose to adopt or reject the integration of technology as a therapeutic medium. Asawa worked with three arts based focus groups (N=13) to explore the answers to these questions with the following results: 63% of the participants explained that they did not use technology as a tool to create art because of high costs of equipment and 50% described how they were unfamiliar and uncomfortable using such hardware and software in therapeutic practice. Peterson, Stovall, Elkins and Parker-Bell (2005) also explored the impact that technology has had on art therapists at the 2002

annual conference of the American Art Therapy Association. Here, 195 professionals completed a survey and the results were that almost 99% of participants stated they owned a computer, while only 18.4% described creating digital artwork and only 12.31% described using it to create artwork with clients in sessions. So what are the many reasons behind art therapist's adoption or rejection of this media into the clinical practice of art therapy?

Hesitations.

Peterson (2010) used Roger's (2003) diffusion model to explain how and why an art therapist may adopt or reject digital imagery technology (DIT) for therapeutic purposes. He explains that the therapist first becomes aware of some aspect of DIT and then develops an interest in using it. Over time, the therapist will evaluate it, test it out in some kind of trial and then either adopt it or reject it. Let's first examine the hesitations around the use of DIT and more specifically the computer as a tool for art making. The most common and perhaps most obvious response for not adopting technology is the high cost of equipment and its inaccessibility (Asawa, 2009; Peterson, 2010). Art therapists often use their own financial resources during practice to purchase materials and many explain that they or their agency could not afford to start purchasing technology in addition to art supplies to offer to clients. However, computers are no longer as inaccessible as they once were. Today, new systems can be purchased used or at reasonable prices.

The third most common response for rejection of DIT is that art therapists feel they have very little knowledge and experience in training and working with this new media or have had a negative experience with computers. This has impacted their willingness to adopt it. Austin (2009) reports, that art therapists are reluctant to develop a

more comfortable relationship with high tech media. Kapitan (2007) reminds us that there seems to be a shortage of appropriately skilled art therapists to educate us on how to use new media in art therapy. Very few graduate programs offer any courses or information on how to integrate this new media into future art therapy practices or even use a computer in addition to the types of materials that are currently being offered to create art. Fear may be the underlying factor. A major fear is that there will be over reliance on the ultimate machine and we will begin to privilege the machine over the hand (Austin, 2009). Yet, Austin writes, “Techno-digital media may diminish the role of the hand but they have the potential to engage the mind and body in profound and meaningful ways” (p.84). Art therapists have also described that they fear not being in control and that technology would remove what art therapy holds so very sacred: the art making process (Asawa, 2009).

Perhaps, the greatest fear is the separation it is perceived to cause between therapist and client. McLeod (1999) describes concerns of coldness and separation by placing a computer in between the client and the art, which was once thought of as an awkward barrier to art production. Many worry about how a connection will form between the computer and the client, thus decreasing the connection between the client and the art, the client and their own body, and also a decreased connection between the client and the therapist (Orr, 2005). There seems to be a definite desire to maintain art therapy’s “purity” and traditional materials as the sole tool for art making. Art therapists who work with fibers, ceramic, paint or sculpture may easily view technology as an opposing force (Kaptian, 2007). “For art therapists to use technology in the therapeutic sense, the technological object has to be accepted as an art making tool as well as seen as

appropriate for treatment”(Peterson, 2010, p.28). What follows is an examination of a few of the advantages of using technology as a tool to help our clients create art.

Approval.

Art therapists agree that creating art using computers reduces fear of failure, reduces the pressure of creating a beautiful product from the start, and is generally less threatening than a large piece of blank white paper (Orr, 2005; Peterson, Stovall, Elkin, Parker-Bell, 2005; Peterson, 2010). For clients who feel that they do not have high artistic abilities or skills and are generally reluctant to begin art making, a computer may seem less intimidating, especially if they have already used one for various other tasks. Adolescents and children of today’s generation are familiar with technology and computers and it would seem like a natural transition to use it in a therapeutic context. Kaptian (2007) wrote “if we fail to adapt to this generation we will become increasingly anachronistic” (p. 50). She explains that we must cross the digital divide and accept the creativity that this generation demands. There is strong need to fill the gap between the tools that we, as art therapists have learned to use and are familiar with, and those of the general public (Orr, 2005).

“A computer has a way of creating a safety net for a client that is not readily available in other media” (Peterson, Stovall, Elkins & Parker-Bell, 2005, p.140). As fearful as art therapists are to adopt this new tool for art making, clients on the other hand are becoming increasingly comfortable in using it. Clients who acquire new skills when using the computer could very well develop a sense of mastery over their creations which would positively affect their self-esteem. No matter what media is chosen, what remains the most important is that it has the capacity to produce positive change (Peterson,

Stovall, Elkins & Parker-Bell). Using the computer, one is free to make unlimited reproductions of an image while having little fear that their original piece will disappear. If a mistake is made, or the client does not like a mark that has been made, no problem, it can be quickly erased and transported back to its original state. Clients may be less hesitant to engage in quick changes and transformations of their images because of these possibilities for reparation.

Although many art therapists do argue that this type of media is inaccessible it may be the only way a client with any type of physical disability can physically engage in art making and its healing therapeutic process. For a client who has become paralyzed because of a long history of chronic physical illness, art making, using technology and assistive devices may be the only way that they would be able to engage in art therapy. As will be described later, by using technology with clients who have physical disabilities, the therapist is removing their own hand in helping to produce the artwork and offering the client complete control over their own creative process. This process alone will likely increase a feeling of empowerment in a person who once thought they had to rely on the hand of the therapist to make any sort of artistic production (Orr, 2005). Computers may also be used in long distance therapy or with clients who have immunology issues (Orr, 2005). A laptop computer is easily transported and quickly disinfected. As our field grows we must begin to integrate more tools to meet the needs and demands of an ever growing client population. “Whether computers can advance art therapy techniques depends entirely on our innate curiosity as artists to explore and investigate this new medium” (Wadeson, Durkin & Perach, 1989, p.296).

Adoption and Integration of Technology into Therapeutic Practice

Technology as part of a continuum of all media options.

If we begin to view technology, specifically the computer including hardware and software properties, as an extension of the tools we offer to our clients to use for artistic expression it may be more easily accepted by art therapists at large. Then, there is no worry that the computer will replace traditional media. Rather it compliments it and is an alternative option for those who may initially be uncomfortable or unable to engage in art making with traditional tools such as drawing, painting and sculpture. Orr (2010) explains that it is important we see technology on a continuum of all media options rather than an invader from the outside. We can then start to examine its inherent qualities and broaden our definitions of what should be considered a medium in art therapy practice. Because few people consider themselves artists in the traditional sense of the word in today's culture, computers may be a way to access those individuals who are much more comfortable using technology (Orr, 2010). "To participate as artists in a techno-digital culture, we must broaden our definitions of art materials and contexts across a wide spectrum...art therapists must be willing to move beyond historically validated media and offer our work in new contexts" (Kapitan, 2007, p.51). Of course natural materials will always have a place in art therapy but art therapists should be free to expand and include the computer as an option by which to create art. McLeod (1999) wrote "what comes to the surface with traditional art materials comes out with electronic media, as well" (p.201). This, we must keep in mind. It is not the tool that matters, rather how it is used in a safe and positive therapeutic environment.

The process of adoption for digital imagery technology.

As we become more knowledgeable and comfortable experimenting with

technology as individuals, we may feel more apt to bring it into the therapeutic settings and offer it to our clients as a means to create art. Like any other materials we must first experience it ourselves before we feel comfortable offering it to our clients. Because the use of a computer as a tool for art making is rather new, this may take time. While exploring technologies inherent qualities, Orr (2005) spoke of a process of adoption that was first developed by Dunn-Snow and Joy-Smellie (2000) to teach students a specific technique during art therapy training. Orr realized that this process could also be applied when art therapists show interest in adopting DIT as an option for art making. The steps include: first conducting historical research about the technique and second, determining which population might benefit most from using this technique. Third, examining which settings or approaches could be most successfully used and the last step is to experience it ourselves. When we begin to experience and personally adopt new media as a tool for art creation, only then can we truly offer it to our clients and feel comfortable doing so. We have to gain a certain level of confidence to really be able to experience its therapeutic value.

Clinical applications and client populations.

“If we view computer technology as an ally, art therapists have the potential to expand their work into a new world of possibilities” (Malchiodi, 2000, p.30). And this is what art therapists have been doing over the past few decades. The adoption and integration of technology has been used with varying clientele and clinical populations ranging from children with learning and behavioral disorders to geriatric populations who are living with dementia. Weinberg (1985) is noted as one of the first art therapists to write about her own experience of integrating art therapy with technology while working

with individuals who acquired brain trauma or endured a cerebral vascular accident and others who had become quadriplegic and were unable to move their limbs or torso. When working with clients who have limited mobility “computers do not demand manual skill for the creation of art. What the computer does require is that the artist (patient) makes aesthetic judgments” (p.71). Without the computer these clients are limited in terms of how involved they can be with traditional materials. McNiff (1999) expresses how the greatest advantage of incorporating technology is to help facilitate art therapy with those individuals who do have limited mobility. With today’s advancements in software and hardware a client may be able to make the most bold and expansive gestures just by placing his finger on a pad, screen, or other technological device (McNiff). It seems we cannot deny the potential of incorporating computer based technology in art therapy when working with individuals who have physical disabilities and this will be explored in depth in both Chapters Three and Four.

Other art therapists have worked with children and adolescents who may be the least fearful of using technology to create art because it is already a part of their developing identity and culture. Canter, in 1989, wrote about her experience using the computer in art therapy while working with children and adolescents who had behavioral and emotional difficulties. She described how it gave youth more control over their environment, thus hyperactivity and destructive behavior decreased as their mastery using the computer and creation of art increased. Canter described how using the computer to create art provided these children with an opportunity for success. Later, in 1999, McLeod explained how using readily available software programs children are offered the ability to create stories, animations and images where the mouse becomes an

extension of their fingertips and can easily mimic traditional media functions. Thong (2007) thoroughly described her work with children who have been hospitalized due to illness or physical complaints. She worked with them using various kid friendly software programs as a means to work through their emotional reactions to being hospitalized. She described how the computer as an art making tool was able to reach those that were defensive towards engaging with traditional mediums. Creating art via a computer may help break down the barriers that adolescents have put up between themselves and the therapist. By using this technology the children and adolescents were able to express and communicate the experience of pain, anxiety and anger while being at a hospital.

Computers have also been used as a means to create art with clients in an inpatient psychiatric setting. Hartwich and Bran Decker (1997) developed a program in Germany that was based on integrating computers into art therapy with clients who were experiencing psychosis. They found that the computer engaged the client and allowed enough distance between themselves and the art work so that they did not lose contact with reality while still expressing and communicating through the act of art making. They noticed how, when using traditional methods such as painting the client would fall back into a psychotic state while expressing traumatic dreams or memories but that this happened less when working with computer software. Hartwich and Brandecker attributed this to the safety experienced by the firm structure and containment of working at such a distance. Emotions could then be expressed and contained safely within the art therapeutic environment.

Lastly, technology has recently been incorporated into art therapy when working with geriatric populations who are living with dementia. Milhaildis, Blunsden, Boger,

Zutis et al. (2010) described the potential of using computer based art making as a way to enhance art therapists ability to reach older adults with dementia. They developed three prototypes of touch pads called EPADs that were designed specifically for use in art therapy with this population. Using the first prototype, the EPAD I, the client could engage in finger painting by touching a screen. A variety of brush types and colors were provided as well as outlines and images to work with. The second prototype, the EPAD II was a multi-touch surface where the client could drag, glue, drop, and brush images on to the screen to form a collage. Background images were also an option from which to begin working with. The third prototype, the EPAD III, was used to create flipbook animations.

As we increasingly understand and read about how art therapists have used digital media for therapeutic purposes the only limits, again, will be our own imaginations. Of course, we need to adapt the media to meet the demands and needs of specific clients. The idea is not to replace traditional materials but to offer a great selection of tools to meet the needs of diverse and unique populations. There will always be initial hesitations when trying to incorporate new things into an old practice but as we can see art therapists have been enthusiastic in doing so. Parker-Bell (1999) wrote “no art tool - including the computer - suits all needs or situations, but most can be used well in a therapeutic context if the therapist knows the properties and potentials they hold” (p.184). I think this holds true and will guide our future endeavors in using technology in the field of art therapy with varying populations.

Ethical Concerns and Considerations

Competence.

With new technologies come new ethical concerns and considerations that apply

when working in art therapy with clients in any setting. Of course when working with new media and technology all previous ethical standards and practices still apply but art therapists may find themselves having to be even more careful. Malchiodi (2000) highlights the importance of staying up-to-date when working with this new media. She suggests that art therapists first establish a philosophy where one considers how and why you see this media as useful in therapy and gain an understanding of which particular client population may benefit. After this is established, it would be important to conduct research on the history of the media as well as how other art therapists have and are using it in therapeutic practice and then to experiment with it yourself. Malchiodi (2000) also reminds art therapists that it is important to be sensitive to whether or not the media that is being offered is culturally appropriate. Not everyone is comfortable working with new technology and this is something to be aware of when deciding whether or not it would meet the needs of a particular client or client population.

It is true that current ethical guidelines offer little assistance in helping art therapists navigate their way in deciding what types of technology are appropriate or inappropriate. Never the less, art therapists must be ethically sound and acquire a competence in therapy that is practiced. “The art therapist demonstrates media competence by intentionally deciding to use or not use digital media in art therapy practice because of how it affects clients, its suitability relative to the needs of clients, and the role it plays in clients’ lives” (Orr, 2010, p.95). For example, one would not offer wood burning as a technique to a small child, with little experience and no fine motor skills. In the same manner new media may not be appropriate for an older adult who has no desire to use a computer or has no previous experience in working with modern

technology. As much as an art therapist may desire to share a new trend or thinks that a computer would be perfect for working with a particular client, the needs and desires of the client are always at the forefront. It is our ethical duty to ensure our clients' needs are being appropriately addressed and that a well thought out rationale is utilized.

It is important as a professional field to adapt the tools, materials and therapeutic techniques to meet a unique and growing clientele. In 1990, the American's with Disabilities Act (ADA) was adopted. This act required all professionals, including art therapists, to accommodate people with differing special needs. Ethically, it is our responsibility to ensure that anyone, despite a person's physical limitations, has the opportunity to participate in the offered services. For example, if an art therapist is working with an adult who has difficulty holding a paint brush they are ethically responsible to try and adapt the tool for potential use with all individuals. From an Occupational Therapist perspective this could mean using an adaptive tool so that painting can be successfully achieved. This also suggests art therapists should have the ability to offer a variety of tools to meet the needs of clients who have limited mobility by using adaptive technology and new media. I will explore in Chapter Three and Four how to work in art therapy with adults who are living with severe physical disabilities by painting and drawing using adaptive technology and arts based software programs. Drawings or paintings that would have traditionally been created by hand, can now be created by moving one's eyes from left-to-right and up-and-down.

Confidentiality and consent in the digital era.

Probably one of the greatest concerns of art therapists in this modern era is ensuring client's therapeutic process is kept confidential and that ethical consent is

obtained if ever the artwork is to be shared for educational, medical or scientific purposes. It is the art therapists' responsibility to educate their clients about the vulnerability of digital media (Orr, 2010). In order for clients to be able to protect themselves and work in an environment with technology, art therapists must be educated about how to deal with these kinds of ethical dilemmas. "The participatory nature of digital media may contribute to an unclear understanding of boundaries between what is appropriately private or public" (Orr, 2010, p.97). What was once a drawing on a piece of paper safely stored in a folder inside a locked cupboard could now be an electronic piece of art stored on the desktop of the art therapist seconds away from an entire global network. Clients may be interested in sharing their artwork and story on a global scale because of the nature in which it was created, yet it is the art therapists' responsibility to make sure they are thoroughly educated about both the benefits and limitations of doing so. When working with digital media, an image can also be in two places at once, it can be viewed on the client's computer in privacy and saved on a USB Flash Drive to be viewed by the therapist in the security of her office. When saving client's artwork on a USB Flash Drive the therapist must be aware that the potential exists of acquiring viruses if sharing the same USB between computers. It would be important to keep a backup of all clients artwork in case there was a malfunction with the USB. It would also be important to find a way to lock the USB or acquire a password before viewing any of the files it contains in case the USB was ever lost or stolen, therefore further protecting clients' work. Although this may seem like added work for the therapist, the effort is priceless when seeing a client, who may not have ever been able to participate in art therapy without these advancements, paint for the first time.

Chapter Three: Art Therapy, Technology and Adults with Physical Disabilities

Up to this point I have explored how art therapists have introduced technology into various art therapeutic practices. I have highlighted the many hesitations, limitations and benefits of doing so. In the remaining chapters, I aim to describe how computers can be used as tools for art making when working in art therapy with adults who have severe physical disabilities. I will begin by briefly describing how the computer may affect the establishment of a positive relationship between client and therapist. I will then describe the ways in which the computer may influence the desired therapeutic goals of both the client and therapist in establishing positive change.

Challenging the Triad

A major focus in art therapy is the relationship between client, therapist and artwork (Dalley, Rifkand & Terry; Jones, 2005; Kramer, 1986). This triad or triangle is unique to art therapy. Many combinations of relationships exist within this triangle - the relation between the client and therapist, client and artwork and the therapist and artwork. Each one of these relationships is bi-directional, where one object or person affects and influences the other. There may also be a triangular relationship between the therapist, client and materials, the therapist, client and process and the therapist, client and product (Franklin, 1992). Kramer (1986) strongly believed that the relationship between the therapist, client and materials are deeply intertwined.

Unlike traditional talk therapies the development of a relationship between the client and therapist often happens through the art object. The art object changes the function of the therapist, as he or she is no longer the sole object of transference (Jones, 2005). Transference can be described as “the patient’s transferring of past emotional

relationships to the therapist” and countertransference is “the therapist’s evoked responses” (Lewis, 1992, p.317). When materials are presented to the client and they are encouraged to create an image, the image may serve as a way to indirectly communicate something to the therapist and the artwork may serve as a container to hold overwhelming thoughts or emotions (Jones, 2005). At times relating to the therapist through the art object may be easier for a client rather than directly expressing an issue verbally. The artwork may hold the many feelings of both the therapist and client. The purpose of the artwork begins to take on the role of mediator for both the client’s transference reactions and the therapist’s countertransference responses (Jones). The client is often encouraged to explore him or herself through the artwork, which becomes an agent of change between themselves and the therapist. “The art therapist and client work together to understand the art process and product of the session and this forms a basis for a triangular relationship” (Dalley, Rifkind & Terry, 1993, p.7).

The art therapist as third hand.

Kramer (1986) was the first to coin the term “the art therapist’s third hand” and this phrase may have special meaning when working with adults who have physical limitations. Kramer describes the third hand as the following

A hand that helps the creative process along without being intrusive, without distorting meaning or imposing pictorial ideas or preferences to the client. The third hand must be capable of conducting pictorial dialogues that complement or replace verbal exchange. (p.71)

Kramer makes reference to the importance of an acquired third hand just as a

psychotherapist must have a third ear and an art therapist will cultivate a third eye to help perceive messages embodied in the client's artwork (Kramer,1987) . The art therapist may use their "third hand" to help clients in their artistic process if they do not have the ability to do so. A therapist may show a client specific firing techniques when working with clay or help save a sculpture before it collapses, if it was not intended to do so. Kramer explains that when working with clients who have physical limitations, a major goal of the therapy may be that the client remains in control and exercises their autonomy as part of the therapeutic process. The therapist functions as an auxiliary hand that supplies the needed strength and skill to complete the artistic process (Kramer). When working with a client who has physical limitations, the art therapist may become an extension of this person's body. The art therapist could, as Kramer explains, entirely create the art product with the client's close direction and instruction. In other situations the therapist may be lending a hand to help in the creative process and the artwork would be made collaboratively. For example, an art therapist may need to support a client's arm while painting or mix colors for a person who is unable to reach a palette. Either way the therapist becomes an essential part of the art making process and develops an intimate connection with the client in ensuring that it is the client's creation that is being constructed.

What role does the computer play?

Today there exists many tools which may also aid a client to create artwork in a therapeutic setting without the "therapist's third hand." The computer is one way by which digital images can be created with graphics arts software. Clients who may have little control over traditional art materials such as paint brush or scissors can gain

complete control over their art making process by using the computer in addition to other adaptive devices. Clients who live with quadriplegia may also create art using assistive technology and a tracking mouse system, which offers a person the ability to control the mouse of a computer by slightly moving one's neck, head and eyes. Although this may sound like an amazing opportunity for clients with limited mobility, art therapists have expressed valid concerns regarding the impact the computer will have on the triadic relationship between therapist, client and artwork.

Some art therapists fear that when clients begin to create art using a computer it will facilitate an isolating and cold experience, and hinder the formation of a positive therapeutic alliance (McLeod, 1999). Other art therapists have described the fear that the client will develop a relationship with a machine rather than the therapist (Orr, 2006). However, if we view the computer as a mediator, it becomes no different than a paintbrush, which facilitates the motion of paint to a canvas. Whether or not a therapeutic alliance is formed depends on how the client and therapist interact with one another, not the choice of the mediator (Orr, 2010). The computer is a tool and what is most important is how it is used. If the therapist is knowledgeable, skilled and experienced in using it as a means for therapeutic art making, then the formation of a relationship while using this tool should not differ from using any other media.

Orr (2010) described how the nature of digital media actually encourages a very collaborative process between client and therapist. The client and therapist when using this new means of creating art must work together. What is likely holding the therapist back is her very own reluctance to develop a more comfortable relationship with this new media (Austin, 2009). A computer supports the building of a transactional space between

the client and therapist in which an artwork is created and discovered together (Gussak & Nyce, 1999). McNiff (1999) described how the image, when created using a computer, becomes equally accessible to both the client and therapist. What may be thought of as an isolating experience is really a transactional process. From my own experience in art therapy using technology while working with adults who have limited mobility is that the artwork is created in front of our eyes as we face the screen together and watch the artistic process unfold. After each image is created both the therapist and client have the opportunity to view it up close or at a distance. During this process the computer production facilitates the communication between the therapist and client, as we equally engage with the artwork. While a client is creating an image, the therapist can clearly see the process, the tools they choose, and any struggles they are experiencing. Working with the computer in art therapy is an engaging, interactive process. McNiff (1999) describes how there is a far greater perceptual fluidity among the therapist, client and artwork.

It is important as therapists that we become aware of the ways in which the materials and tools we choose to offer to our clients have an impact on the developing therapeutic relationship between client and therapist. From my own experience the computer has not hindered the development of the therapeutic alliance but rather is seen as a positive transformative tool in the therapy sessions.

The Role of the Computer in Helping to Foster Positive Change

I will now briefly touch on the ways in which the computer may foster positive change when working with adults who have limited mobility in art therapy. Just like in traditional art therapy, the client and therapist work together to build a relationship and establish personal goals for growth. In the section to follow I aim to describe goals that

can be achieved by incorporating a computer as a tool for art making when working with clients who have limited mobility. To support these findings I will be incorporating artwork created by two adults who I have seen in art therapy while I completed my student art therapy internship. To preserve confidentiality pseudonyms are used in place of their real names.

“Albert” is a gentleman in his late 40’s who was diagnosed with Amyotrophic Lateral Sclerosis (ALS) almost eight years ago. ALS is neurodegenerative disease which causes progressive muscle weakness eventually resulting in nearly complete paralysis of the body. However, it does not affect one’s cognitive abilities. Albert can no longer move his limbs or torso but does have the ability to make slight movements with his head and neck. Albert is now being supported by long-term mechanical ventilation as he can no longer breathe on his own and has lost his ability to speak. He lives in a long-term care facility and spends most of his time in bed. Albert is one of the most intelligent people I have ever encountered in therapy. He communicates with the use of assistive technology, specifically a “head mouse tracker” and an on-screen keyboard. He creates artwork through moving his head, neck and eyes which controls the mouse on his own personal laptop. Albert is kind, sensitive and an extremely insightful man. Through art therapy Albert worked to increase self-awareness through the process of art making around particular themes of psychological healing.

“John” is a gentleman in his early 30’s who was diagnosed in childhood with Duchenne’s Muscular Dystrophy, which is a genetic neuromuscular disease. As the disease has progressed, John is unable to move most of his body. He is able to move his hands but at times requires assistance because of limited strength. John has complete

control over his head and neck. Like Albert, John can no longer breathe on his own and is being supported by long-term mechanical ventilation. He is able to speak and gets around in a motorized wheelchair. He is active in the long-term care facility where he resides, and enjoys watching sports, working on the computer and making art. He creates art using the computer with my assistance and uses a graphics tablet and stylus, which will be described in depth later. John is enthusiastic about his own art therapy process and enjoys making images as a means of self-expression.

Both Waller (2002) and Luginbuehl-Oelhafen (2009) describe the psychological impact that chronic physical illness can have on the individual living with any disease. Waller states that the psychological features of an illness are rarely addressed within hospital settings yet there appears to be a strong link to physical symptoms. In the field of medical art therapy the aim is often to address the emotional impact of an illness within a so-called “physically focused” setting. “The creative process may help the individual to make life more meaningful, to enhance his ability to know himself and to help him reach his potential” (Luginbuehl-Oelhafen, p.22).

Autonomy, control and empowerment.

Luginbuehl-Oelhafen (2009) explains that one of the main stresses in adults who have physical illness is a loss of autonomy and control over many aspects of one’s life. When an adult acquires an illness that causes a loss of function, their job and the role within their family could likely change as well. A person is less likely to feel independent and in control of their surroundings while living in a long-term care facility. Severe physical limitations also require that one become more dependent on others for many physical needs.

An important goal for art therapy is to help adults who have limited mobility, regain a sense of autonomy and control while focusing on personal strengths and abilities. When a client begins to use the computer to create images this may be one area in their lives where they are in control. The computer removes the therapist's hand from the client's artwork and makes it possible for adults with physical disabilities to create art independently (Peterson, 2006).

John for instance still has the ability to move his hands but could not apply the required amount of pressure of a pen, to create certain images. I was able to offer John a graphics tablet and stylus that required little pressure and only small movements of the wrist to make images. With this tool John was able to create art on the drawing tablet that translated to the larger screen of his own person laptop (Figure 1). I purchased a tablet that was small enough so that John could reach all four corners without a huge amount of physical effort.

The art process can be one of empowerment for an adult who has limited mobility. The therapist aims to help individuals become more assertive and gain a sense of power over one aspect of their lives (Franklin, 1992). Albert, while working with the themes of "The 7 A's of Healing" from the book *When The Body Says No* (2004) by Gabor Maté, explored his associations to the theme "Assertion," and created an image that visually depicted his struggles and successes of being assertive throughout both the course of his life with ALS and previous to the diagnosis (Figure 2). Art therapy may become an empowering process for clients who find natural materials such as painting and drawing



Figure 1. Doodle 3. Drawing created by John with graphics tablet.

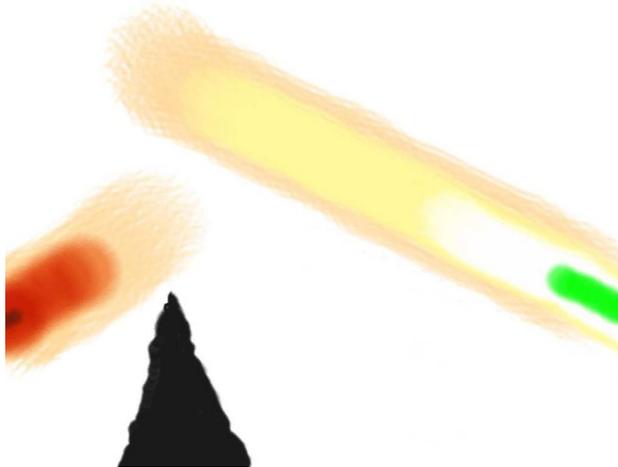


Figure 2. Assertion-search for a firmer foundation. Painting created by Albert in response to theme of assertion.

limiting because of the need for physical manipulation (McLeod, 1999). Or in this instance for clients who would be unable to participate fully in art making if it wasn't for the advancements in technology. In art therapy, a focus is often on the process of creating rather than on a final art product. When working with clients who have limited mobility, the choices the clients make are significantly more important than the final image. Art therapists have expressed their own fear of losing control when the computer is introduced (Austin, 2009) yet if the control is being transferred to the client, it may be hugely beneficial.

Mastery and self-esteem.

As a client gains more experience in creating digital art they will likely become more comfortable making images, develop confidence in their skill, and a sense of mastery in their creative process. It is through the achievement of this mastery that self-esteem can be positively enhanced (Malchiodi, 2000). Both John and Albert in the beginning stages of therapy, cautiously explored the tools of the software programs, and as their comfort level increased they acquired confidence to explore new techniques such as pastel, airbrush, oil paint, and charcoal, using a computer software program. The art product is also proof of this acquired mastery as seen here in John's work. The first image (Figure 3) was created two months prior to the second image (Figure 4) and the improvement of skill level is clearly evident. Although the focus is not on the product in art therapy when a person develops new skills it has a significant impact on feelings of self-worth.

Although John's skills had improved dramatically, he still asked for my assistance in completing the second image. I drew the outline of the person for John and he filled in the body with color as well as completed the rest of the image. In the second image there



Figure 3. Doodle 3. Doodle created by John using a graphics art tablet.

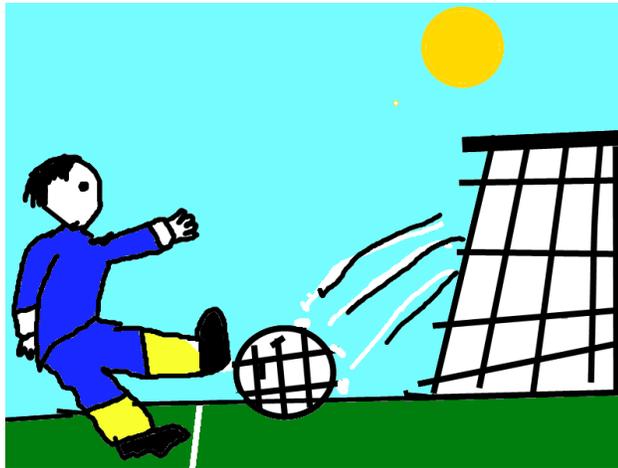


Figure 4. Soccer. Drawing created by John with graphics art tablet.

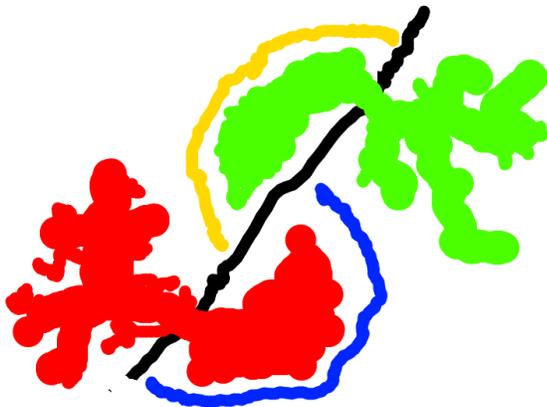


Figure 5. Image of myself. Image created by Albert in response to theme of acceptance.

is evidence of a base line, movement, and action. John gained the confidence and ability to fill in shapes with color and in doing so created an embodied image, which for him represented something he enjoyed doing which is watching sports. John was proud of the creations he made and was grateful that he had the opportunity to use art as a means of self-expression.

Communication, identity formation and self-concept.

Art therapy is most highly recognized for its ability to offer an alternative means of communication, as compared to solely verbal psychotherapy. Art making provides an opportunity to communicate non-verbal and verbal, conscious and unconscious feelings surrounding a chronic illness experience. This experience may be isolating for someone who is unable to communicate verbally. Art may also be an opportunity to explore an altered body image and begin to form a new self-concept and identity safely within a therapeutic setting. Moon (2010) describes how creating “art can reshape old concepts, construct new ideas, refine attitudes, and introduce ways of understanding newly created meanings and identities” (p.106). Through art making, pain, anxiety, anger and feelings of depression are communicated, which may not be possible to express by solely verbal means. Albert, early on in therapy, explored his sense of self, through an abstract image (Figure 6). He described this image as representing an action, the process of being split by a strong and vital force. What was once whole (possibly himself) has been parted by a surging line (possibly the illness), and the contents, which he described as his psyche, are uncontrollably spilling out of the once contained halves. Albert explained that since the diagnosis of ALS, his life and sense of self has changed, but as therapy progressed he reflected on the idea that many parts of him are still whole and he is still the person he

once was, despite the illness that has overcome his physical body. Without the computer, Albert would not have been able to create this image and express his thoughts on the impact his illness has had on the formation of his own self-concept. As Albert demonstrates, the image is a powerful tool to help a person look deep inside him or herself and reveal things that could not be discovered by solely verbal means. The image may be a person's only opportunity to explore sensitive issues surrounding both illness and identity.

While working with both Albert and John, the integration of a computer in the art therapy setting became quite natural. It was a mediator, providing both men the opportunity to create art and express charged and/or playful images. For Albert, the computer became a means by which he speaks to the world through images or words. For John, the computer is a playful space, an opportunity to escape the hectic world of an intensive care unit. The computer enhanced our ability to communicate with one another through the power of art. In Chapter Four I will explore the ways in which the computer can be used as a valid therapeutic tool. I will begin by describing easy to use and accessible software programs and accessories by which to create art. I will then describe how techniques such as painting, drawing, and collage can easily be adapted by using new media in art therapy with clients who have limited mobility.

Chapter Four: Adapting Art Therapy Materials

When working with clients who have limited mobility, a major focus of the art therapeutic process is adapting the art materials in helping foster a positive therapeutic experience. In the following chapter, I will describe how clients can engage in drawing, painting and collage by using various software programs and computer equipment. Each

tool and material must be adapted to meet a client's specific needs. When working with the computer the art therapist must be knowledgeable of the types of software that exists by which to create art and the properties they hold. I will begin by describing specific software programs and the differences in using open source and Creative Commons software as opposed to registered software programs.

Software

Art therapists over the past decade have begun to describe specific software programs that they have offered as a means by which to create art in therapy. Software is defined as the programs used on a computer to complete tasks such as word processing, creating graphic images, and accessing the Internet (Malchiodi, 2000). Most of the programs that have been described are suited to these needs of specifically children or adolescents. The most common programs that art therapists have used in practice include Magic Mouse's Flying Colors, KidPix and KidPix Deluxe, Haptek's People Putty, Create-A-Story by Story Book Weaver, Photo Fantasy by Arcsoft, 3D Movie Maker by Microsoft and both Adobe Illustrator and Adobe Photoshop (Malchiodi, 2000; McLeod, 1999; McNiff, 1999; Parker-Bell, 1999; Thong, 2007; Tubbs & Drake, 2007). Similar to the hardware or computer system, software and graphic arts programs are constantly being updated and improved. Although, the programs listed have proved to be extremely beneficial with certain clientele, the cost can be quite steep.

Open source and Creative Commons.

Over the past two years I have been interested in exploring open source and freeware software programs or software created under the Creative Commons copyright license for use in art therapy sessions. Open source software are programs that have been

developed in a very public and collaborative manner, which makes them available for the public to use for free. Freeware on the other hand is not “open source” but are programs that are available at no cost and can include both open and closed software. Sometimes this type of program would be a limited version of software that requires purchasing or may only be available for a limited amount of time. When working with clients in art therapy, I would recommend using open source software to avoid these problems. Often open source software is part of a GNU General Public License, where it “is a matter of the users freedom, to run, copy, distribute, study, change and improve the software” (Free Software Foundation Inc, 2011). The GNU project was launched in 1984 as developers began creating and distributing free software for public use. Other software that is available for free is licensed under the Creative Commons Act. “The Creative Commons is a nonprofit organization that develops, supports, and stewards legal and technical infrastructure that maximizes digital creativity, sharing and innovation” (Creative Commons Attribution License, 2011). The creative commons licenses provide alternatives to the “all rights reserved” paradigm of traditional copyright. Like open source software the developers and users work together to improve the function, accessibility and availability of free graphic arts programs for public use (Creative Commons Attribution License). There are many open source or creative commons software programs available today. As I describe specific techniques that clients have used in sessions with the computer, such as drawing and painting, I will bring your attention to the specific software being used and how to access it. Although I have incorporated such software specifically with adults who have physical disabilities, I believe these programs have the potential to be incorporated into art therapy with a

variety of clinical populations. To learn more about General Public License or the Creative Common license please visit these websites www.gnu.org and www.creativecommons.org.

Accessories and Adaptive Devices

Drawing tablet and stylus.

Before I begin to describe specific techniques and tools for art making using the computer, I will briefly mention what other accessories or adaptive devices might be necessary in addition to the computer and software programs when working with adults who have limited mobility. If an art therapist is working with an adult who has difficulty operating a regular mouse or keyboard these tools can be adapted. For example, in order to operate the computer, a joystick could be used instead of the mouse.

Personally, I have found graphic arts tablets beneficial for clients who have limited mobility to use while drawing. A graphic arts tablet is a drawing pad that can range in size from small (5"x5") to large (10"x10") and the stylus is the pen that is used with the tablet. An adult with limited mobility may find the tablet and stylus easier to control and operate while drawing or painting because the stylus is very light weight and requires a very small amount of pressure to make a mark. Therefore, a person who is unable to apply pressure due to weakness in the hands may be able to create art using a drawing tablet. When working with people who have limited range of movement, a small drawing pad may work best.

Mouse tracking device.

For other individuals, using a graphics drawing tablet may not be possible due to even less ability to move one's body. In order for adults who may have complete body

paralysis to gain control over the computer, assistive devices such as a mouse tracking system may be an option. It works like this. A tracking dot is placed somewhere on the users body, most often on a pair of glasses. The head tracking device then transmits a signal from the computer monitor to this dot. A camera is placed on top of the screen in order to track the dot on the glasses. Then the movements of the person's head will control the on-screen cursor (Head Tracking, 2007). In addition to the mouse tracker, a program can be installed in the computer so that an individual would have option to right click, left click, drag and drop using the same head mouse tracking technology. This type of technology would have to be purchased by the individual user and could be costly, although sources of funding do exist to help support accessibility and methods of communication for adults who have physical disabilities. There exists a simple and free version of a mouse tracker called the Camera Mouse. This tool allows one to control the mouse of a computer by identifying a point on one's face using an external or internal camera on the computer. The Camera Mouse can be downloaded for free at <http://cameramouse.com/>. All of these tools and devices take time to acquire the skills necessary to use them with ease, but with patience they are extremely valuable in helping to create art. In addition to a head mouse tracker, on-screen keyboards are also available. Today most computers purchased do come with an on-screen keyboard option, but again there are many easier online versions that can downloaded for free.

McLeod (1999) explains that, "the potential for developing techniques using the computer for art therapy is limited only by the therapists creativity and understanding of the process, just as in any other art medium" (p.202). I would add that the potential of using the computer as a tool for art making also depends on the eagerness and willingness

of the client who wishes to participate in their own therapeutic process with this particular media. In this next section, I will be comparing traditional art materials and techniques such as drawing, painting, and collage with their technological counterparts. I hope by providing examples of the ways in which clients who have limited mobility used the computer as means to makes images will add to the evidence of the computer as a valid therapeutic tool.

Drawing

Thong (2007) defines drawing as a representation of forms or objects on a surface by means of lines created by a variety of drawing materials. Some materials that are ubiquitous to drawing are pencil, markers, conté, and pastels. Drawing as method of art making has been at the heart of art therapy since its very beginning. Each drawing material has their own characteristics, for instance, oil pastels lend themselves well to layering, while pencil may help convey personal narratives (Moon, 2010). Many of these materials can be used on a variety of surfaces including various types of paper. The marks that one creates can be aggressive or light, explosive or controlled. Many of today's computer software programs offer the artist/client various options of drawing tools, which mimic traditional drawing media.

To create more technical drawings, Ink Scape, a graphic arts software program would be well suited. Ink Scape is an open source vector graphics program. Its functions are similar to Adobe Illustrator or Corel Draw and it is available for free for public use. Two more basic programs which offer a variety of drawing tools are Paint.Net and Art Weaver. Paint.Net is part of the Creative Commons act while Art Weaver is an open source software program. Art Weaver, while primarily used for painting, offers tools such

as chalk, conté, charcoal, crayons, felt pens, pastels and a basic pencil. With Art Weaver, a person has the option to draw on different surfaces, such as handmade paper with a rougher or smoother texture.

When I first began to work with Albert in art therapy we explored his ability to use the software program paint.net, and I asked him to fill the surface of a page with different types of lines. Because this program and method of working (using the computer by which to create art) was new to both Albert and myself, conducting a very basic assessment in terms of Albert's physical ability to reach all corners of the screen helped determine what Albert's abilities, limitations and strengths were when using this specific program and method of creating art. Albert experimented with tools that allowed him to create straight and curved lines but also a basic pencil by which he could make more natural lines (Figure 6). Albert created this image with the assistance of a mouse tracking system. He controlled the mouse of his computer by slight movements of his head and neck. When Albert first began to draw using this method he expressed frustration, as the tools were not easy to control, but over time Albert gained a comfort and familiarity with the software program which reveals itself in his later works.

John also developed drawings using the Paint.Net program. He created an image of a lacrosse net and ball by using a stylus and graphics drawing tablet (Figure 7). When he used the computer I placed his laptop on a table directly in front of his wheelchair and the graphics tablet was placed on a small table attached to the wheelchair. This setup allowed John to draw with less difficulty. Due to the progression of Duchenne's muscular dystrophy, John does not have a great amount of strength in his hands. Using the stylus allowed John to complete drawings with little required pressure. "The line in drawing



Figure 6. Lines. Drawing assessment completed by Albert.

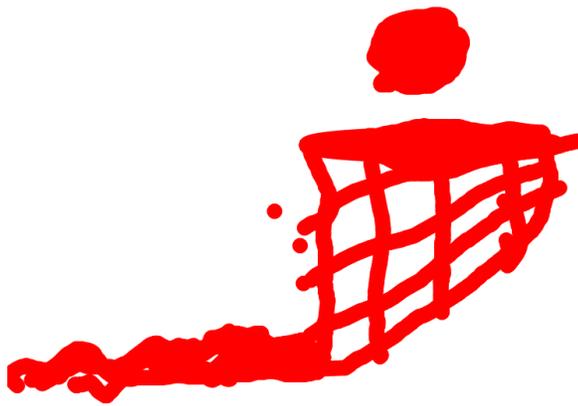


Figure 7. Lacrosse net. Drawing created by John with graphics art tablet.

may reflect movement, goal orientation, direction, exploration, relaxation, rigidity, and many other qualities that an individual must deal with in his life” (Seiden, 2001, p.69).

While making art, John playfully explored the sports he enjoyed. He was reminded of a time outside of the hospital and let his imagination take over during his art making process.

Painting

Painting is another traditional method of creating art that is used in art therapy with varying clientele. Paint comes in many forms such as water color, acrylics, oil paints, and can be applied to nearly any surface (Moon, 2010). Color is very present in painting and Seiden (2001) describes how it can bring energy and charge or flood a surface with feeling. The tools used for painting are, like drawing, limited by a person’s imagination. Whether one is painting with their fingers, a brush, sponges or a stick, painting becomes an easy and fluid means of self-expression. When working with adults who have limited mobility, paintbrushes can be modified and added to so that they are easier to use. Adults have also painted with either their mouth or feet when unable to use their hands to hold a brush. Paint is fluid and easily lends itself to bold and spontaneous expressions. Painting may be a means to access difficult emotions and can be layered and reworked as desired by the artist.

When working with a computer, painting is completed with pixels rather than pigments. Art weaver offers the artist/client the choice of using virtual oil paints, acrylic, sponge painting and airbrush. The size of the brush is the artist’s choice and the program offers various types of brushes such as a soft bristle, a brush for fine feathering, for glazing or for wet versus opaque acrylics. The opacity of the paint can be adjusted and if

you are using the graphics pad and stylus the pressure you apply will change the opacity naturally. Art Weaver also has the option of painting with an impressionist or pointillism style. The nice thing about working with Art Weaver versus Photoshop is that the tools/brushes are easily accessible as they are all presented on the main interface of the program. For someone who is not extremely comfortable using graphics software, there is no need to search through the file bar to find the brush or technique a person desires. When using the program with a mouse tracking system, having these tools directly on the main screen is essential.

Albert worked in art therapy to explore his own personal association to the “7 A’s of healing” presented in the book *When the Body Says No* by Gabor Maté (2004). He created various paintings using the Art Weaver program, and as his confidence grew, so did the variety of tools used. He became more comfortable exploring and expressing his thoughts and emotions in an abstract image. While exploring the theme of “Anger” in art therapy Albert expressed thoughts about the fine line between anger and rage. He created an abstract painting that explored his early repressions of anger (Figure 8).

Albert used specific colors to represent parts of himself and others in order to express invading or repressed angry thoughts, people or events. The yellow in the center of the image was what he described as the core of his essence, yet it is being smothered and invaded. In this painting, Albert used virtual acrylic paint and oil pastel as well as various other painting tools and techniques. Two months later, Albert worked on a painting surrounding the theme of “Attachment” also part of the 7 A’s of Healing. He called this painting “Adult-Child Attachment” (Figure 9). Following this creation Albert expressed that he was proud of what he had made. It seemed clear that he was acquiring a

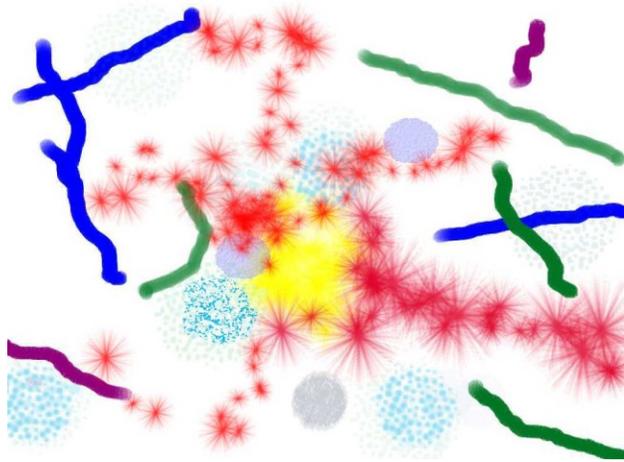


Figure 8. Repression. Artwork created by Albert in response to the theme of anger.

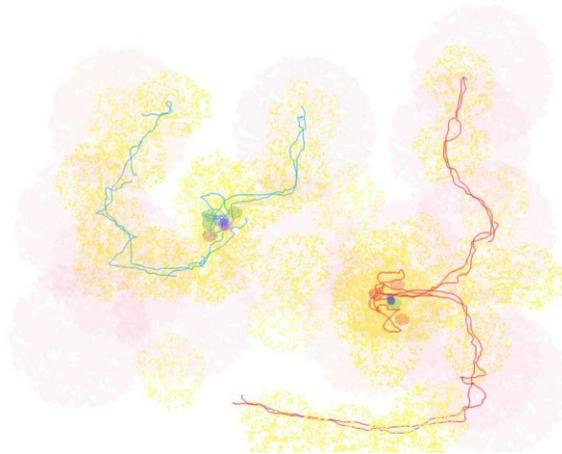


Figure 9. Child-adult attachment. Artwork created by Albert in response to the theme of attachment.

sense of mastery while using the graphic arts program Art Weaver. Albert expressed how he enjoyed both the process and product that he created. I was astounded with the way in which he used a variety of tools and the delicacy in which he portrayed this image of attachment. We explored its embryonic presence and symbolic meaning within the session. In using the computer as a tool for art making Albert was able to create a very fluid, soft and organic painting in which he explored significant personal symbols and meanings surrounding the topic of attachment.

Collage and Photo Manipulation

Traditionally collage is the process of creating an artwork using already existing two-dimensional images, materials or objects that are adhered to a surface to complete a pictorial composition (Moon, 2010; Thong, 2007). Materials may include magazine images, stock images, photographs, scanned images and fabric. Collage is often used in a first session as an introduction to art making. The process of creating an image from already existing pictures may be seen as less threatening for someone who lacks confidence in their artistic ability. Collage is a valid therapeutic form of art making and can also be used as a means to uncover unconscious material. The images chosen may have great symbolic meaning and reflect significant aspects of the client who chooses to work with them (Moon, 2010). Collage, although traditionally completed on paper, can also be created with a computer. Images can either be scanned into the computer or taken with a webcam, which is a camera that is built into a computer screen. Other sources of images include stock image databases found in some word processing programs or images found using the Internet, preferably using images that are part of the Creative Commons act, which are free for public use. If a client were to use any image from the

internet they could be impeding on registered copyright laws unless they were to give credit to the particular image source or artist. Collage offers a client the opportunity to re-work or alter an already existing image or create one from scratch.

John created a collage using stock images from a clip art database in a word processing program (Figure 10). During the holidays, John is reminded of his life in a long-term care facility, and he strongly desires to be home for Christmas. Although John has the opportunity to go home for Christmas day, he cannot stay long because he is being supported by long-term mechanical ventilation and needs a respiratory therapist with him at all times. John created this collage to add life to his hospital room. He is a very positive thinker and tries to make the best of his current situation. He expressed that he wanted to put this banner up in his room to bring out the festive spirit in the hospital. These types of images would be difficult for John to draw due to physical limitations, but using collage he was able to use already existing Christmas themed pictures to create the banner he desired. He chose images from a clip art database then copied and pasted them into a document using the Paint.Net program. We later printed this poster in color and put it up in his room.

Albert also experimented with already existing images yet in a very different manner. Albert also breathes with assistance of a mechanical ventilator and part of this process is that he has to receive suction many times a day to help him breathe. Each patient who receives suction responds to it differently, nonetheless, it is not a pleasant procedure. During this procedure, Albert is removed from the mechanical ventilator and a small tube is placed in the artificial airway into the trachea to remove secretions from the lungs. Each procedure lasts approximately 15 seconds but during this time the patient

cannot breathe (AARC, 1993). Following a rather intense suctioning experience, Albert explored with me how this felt. Albert described that he could not explore this through drawing or painting because he did not have the physical capacities to illustrate it. I suggested that perhaps he could look through pictures and try to find any images that expressed how he felt while being suctioned. He thought about it and then decided he would look for an image of a deflated balloon always needing to be inflated again, as this is how he described his feeling. He opened up the Internet on his computer and began to search for this image. We looked together at many inflated and deflated balloons and he chose an image that for him represented his experience (Lydon, 2011). This was indeed a powerful image and it held symbolic meaning for him (Figure 11). He described the balloon as deflated and broken at the neck. The red for him represented blood and life, while the black asphalt was lifeless and presumably caused the balloon to pop. Although Albert was unable to draw about this experience he found meaning in an already existing image. This was the first time that Albert expressed his experience of being suctioned and the emotions surrounding his inability to breathe on his own using imagery, which proved to be a very powerful experience during which many feelings were ventilated and contained within the image itself.

Although I have described the potential for creating drawings, paintings and collages using the computer, clients could also create 3D sculptures and animation projects using computer based graphic programs. Art of illusion and 3D canvas are two free basic open source software programs by which to create 3D sculptures. While, programs such as Daz3D and Anim8or are geared towards creating your own 3D animated scenes. These programs offer pre-created images of people, animals, vehicles



Figure 10. Christmas Banner. Artwork created by John to decorate hospital room.



Figure 11. How I Feel. Image chosen by Albert to reflect personal feelings.

and specific scenes and backgrounds. Unlike the basic drawing and painting software I introduced with my clients, 3D animation and sculpture software may be more difficult to use, especially if one is not familiar with this type of software. Comprehensive tutorials describing how to use these programs should be available for anyone who is interested.

Canter in 1989, began to use computers as a means to create art with her clients in therapy sessions. She wrote “whether computers can advance art therapy techniques depends entirely on our innate curiosity as artists to explore and investigate this new medium” (p. 296). The tools, materials and techniques can be adapted, yet it will always depend on the willingness of both the client and therapist to view this new media as therapeutic. Drawing, painting and collage as demonstrated throughout this chapter can be achieved, experimented and explored by using various graphics arts programs. When working with clients who have severe physical limitations the computer may serve as one of the only ways they may be able to draw and paint. Art is a very powerful tool and its ability to act as a container, a mirror, and a witness is very present even when using the computer. Albert and John both explored the potentials of various drawing, painting, and collage tools throughout their own art therapy process. Over time they gained a sense of mastery and confidence in using the programs and tools available. Albert created art on a very symbolic level and at times used metaphor to address more difficult issues. John enjoyed the art making process as a type of oasis away from the busy and sometimes hectic world of the intensive care unit. The idea is not to replace traditional materials in art therapy but rather adapt them to client’s needs whether they are physical or emotional. Seiden (2001) wrote

A full length mirror will reflect your body. A smaller mirror will

reflect your face. In both situations you are unable to see your inner organs. You cannot see your mind, your soul, your thoughts and feelings. Yet these invisible qualities are essential elements which define you at least as accurately as your physical being.

(p.15)

Art then becomes another type mirror - a mirror that has the ability to see a person's strengths and abilities. This mirror does not judge, rather it is a witness to personal struggles and successes. Does it matter how this mirror is created? Will it not serve the same purpose or hold the same value if produced by a computer or a paintbrush?

Chapter Five: Conclusion

Moon (2010) asks a very important question - what is therapeutic about digital media? Yet, this is not simple to answer. In my own experience working in art therapy with adults who have severe physical disabilities it has become apparent that digital media and the computer have the capacity to promote positive change. New media like any other media must suit the client's needs and therapeutic goals. The computer and art making process may have the capacity to empower an individual's ability to express, increase a sense of control, increase a sense of mastery and tolerance, facilitate the development of new skills, and offer the experience of being witnessed and seen. The computer has the potential to be a mediator in communication and self-expression with adults who are living with serious chronic physical illness.

Advancements in new technology offer art therapists the ability to reach more individuals and diverse clinical populations. By incorporating technology into art therapy it has expanded the possibilities for clients who have physical limitations to engage in an

art therapeutic process, where the artwork is created not by the therapist, but by the client. Tools such as drawing, painting, and collage can be adapted and explored by using the computer, and clients who may have not been able to engage in these techniques because of physical limitations, now have the opportunity to do so. With this technology come the freedom of expression and the freedom of choice. The availability and accessibility of creating art via the computer is increased when using graphics arts software that is part of the Creative Commons or General Public License. Because these types of software are developed in a collaborative manner they are free and accessible for all public use. Art therapists do not have to worry about the expensive costs of such programs or copyright and distribution laws. As technology expands our willingness to explore it as a therapeutic media should also. If we can begin to see the computer on a continuum of types of media we can offer to our clients, then we are expanding our field and widening the accessibility of this therapeutic process to various individuals with differing needs.

A Future outlook on Art Therapy and the Use of Technology

Over the past two decades art therapists have written about the potential of using technology in art therapy with clients who have physical limitations (Malchiodi, 2000; McLeod, 1999; Parker-Bell, 1999) but where is the proof that it is actually beneficial? In order to support the potential of using technology with this specific population, art therapists need to share experiences and knowledge of doing just that. When art therapists begin to share with one another, both their successes and disappointments, in using technology in art therapy with clients who have physical disabilities, we will only then gain a greater understanding of its potential for therapeutic applications.

As with any new idea, material or technique, we need to be educated on how to use

it as well as understand the properties it holds. By doing so the fears associated with using technology in art therapy, such as fears of isolation, coldness, separation and interruption of a therapeutic alliance, will likely be reduced. As art therapists begin to gain a familiarity and develop knowledge in using the computer as a tool for art making we can offer this unique form of therapy to diverse populations. Therapy is a process of opening up, taking risks and experiencing the unknown; art therapists must also be willing to take risks in exploring the computer as a new medium in art therapy. McNiff (1999) suggests that we do not replace natural materials but rather broaden our definition of the tools we can use in therapy to help individuals in their own process of self-discovery. “We still have our bodies, still have to function in the world, and have to deal with equipment glitches, malfunctions and the limits of our own human imagination” (Drunker, 1997, p. 1). What becomes the most important focus is how we deal with these issues. If we deny the potential of technology in a therapeutic milieu then how are we helping foster new growth in this profession?

I had the privilege of witnessing both John and Albert’s artistic and therapeutic process and without new advancements in technology this would not have likely been possible. By incorporating new technology into art therapy practices we are widening the door by which clients can enter into a gratifying therapeutic process.

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Appendix

CONSENT FORM TO PARTICIPATE IN RESEARCH

“The use of Modern Technology in Art Therapy with Adults who have Severe Physical Disabilities”

This is to state that I agree to participate in the research inquiry conducted by Sarah Tevyaw entitled *The use of Modern Technology in Art Therapy with Adults who have Physical Disabilities*, as part of her Master’s studies in the Department of Creative Arts Therapies at Concordia University.

Purpose

I have carefully read and understand the consent information about the above study. Its purpose and nature have been explained to me, I have had the opportunity to ask questions about it, and I am satisfied with the answers I have received.

Procedure

I understand that some or all of my artwork (in its digital format) and my comments about the artwork may be included in the research paper. I also understand that case material in the form of vignettes may be used in the research paper to describe how and why I have made artwork as well as general comments relating to or describing the art therapy process.

Conditions of Participation

I understand that I am free to withdraw my consent and discontinue my participation at any time without negative consequences. I understand that if I do withdrawal my consent or choose not to give it this will have no effect on the quality of therapy I am receiving. I understand that my participation in this study is voluntary and there is no hidden motive of which I have not been informed.

Confidentiality

I understand that the researcher will know my name but will not disclose my identity to others or in the publication. My identity will therefore remain completely confidential. I understand that the data from this study and the final research paper may be published and that copies of the research paper will be bound and kept in the Program’s Resource Room and in the Concordia University Library.

This type written note stands as my signature witness by

Signature of Participant

Date

Witness to Signature

Date