Ethical considerations in multimedia development

A Review of Literature

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Introduction

Multimedia is the combination of several different technologies, such as video, audio, graphics, and computer-generated interaction. Some of the components of multimedia have extensive research into the ethical ramifications and considerations. For instance, ethical issues regarding mass influences (Bandura 2001, Stern 2005, Ziegler 2007), fair representation and equality (Babad 1999, Dong and Murrillo 2007, Mastro & Greenberg 2000, Sherman 1996), and deception (Lee 2005, ) have been researched in relation to film and television. Ethical issues pertaining to audio, film, and software’s intellectual property rights have also produced a great deal of research over recent years. In addition, the Internet has drawn concern for privacy and the need for online ethical standards. Lastly, effectiveness of technology as a tool in education have been documented in numerous case studies, but research on ethical implications of these combined technologies in education are few and scant.

The combination of various media into one media is likely to produce new effects from the technology. This theory is perceived from basic chemical reactions, whereas flour plus water combined will produce a paste with a completely different texture and purpose. There may also be no distinct effect change in the combination of multimedia just as the two separate chemicals, water and oil, mixed together will settle and remain separated. Research is needed to determine social and ethical issues of these combined technologies. “Each new communication technology either retrieves, amplifies, transforms, obsolesces, or mixes ethical issues from the past or creates new issues for the future.” (Cooper, T.)

This paper will review ethical and social implications of multimedia development through a review of current literature. What are the ethical concerns of educators as it pertains to multimedia projects? Should multimedia be protected by patents or copyright? What constitutes
“fair use” of copyrighted material that can be incorporated into an educator’s multimedia project? Are there ethical concerns and considerations that need to be aware of privacy and confidentiality issues?

**Code of Ethics**

As mentioned, previous research has investigated the relationship of the individual technologies; video, audio, graphics, animation and computer-generate interaction, with social and ethical implications. A review into various books and organizations associated with these technologies provides insight into what ethical standards already exist. For instance, the Association for Computing Machinery (ACM) provides a code of ethics for professionals involved in software development. They provide the following principles to ensure a professional commitment to the “health, safety and welfare of the public” relevant to multimedia production:

1. **PUBLIC** - Software engineers shall act consistently with the public interest.
2. **CLIENT AND EMPLOYER** - Software engineers shall act in a manner that is in the best interests of their client and employer consistent with the public interest.
3. **PRODUCT** - Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.
4. **JUDGMENT** - Software engineers shall maintain integrity and independence in their professional judgment.
5. **MANAGEMENT** - Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance.
6. **PROFESSION** - Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.
7. **COLLEAGUES** - Software engineers shall be fair to and supportive of their colleagues.
8. **SELF** - Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.

(Copyright (c) 1999 by the Association for Computing Machinery, Inc. and the Institute for Electrical and Electronics Engineers, Inc.)

The ACM also offers standards on ethical behavior (http://www.acm.org/constitution/code.html) which includes widely used guidelines of righteous behavior, such as contributing to society, avoiding harm of others, and maintaining professionalism. Similarly, the Institute of Electrical
and Electronics Engineers (IEEE) has a code which also promotes professionalism, “We, the members … hereby commit ourselves to the highest ethical and professional conduct…”

The Association of Educational Communications Technology’s (AECT) mission is to provide leadership for the creation, use, and management of various technologies used in teaching and learning. This agency is also a useful resource for multimedia technologist. Their code of ethics has three main areas; 1) Commitment to the Individual, 2) Commitment to Society, and 3) Commitment to the Profession. These three fields of professional ethics sum the majority of association standards. Each specifies that there is need for the professional to commit a high level of morale behavior in both a macro and micro level – society and individual. Furthermore, a respect and commitment to the professional field is expected. The difference between the various standards is particularly seen in the field or industry of each association. The ACM focus their standards on computer software where AECT focuses on effective educational tools. However, the code of ethics for various industries minimally touches on the unethical problems plaguing our society, such as intellectual property, privacy, and deception. These areas need to be addressed to see how they can curve, deter, and minimize the risks of injury to individuals, inappropriate use, or financial loss for multimedia producers.

### Intellectual Property

Intellectual Property is a way to protect its author’s works. The intent of protecting these works is to provide motivation to the author to share their work. It is argued that protections encourage free growth. The four key sections of Intellectual Property are 1) Patents, 2) Copyright, 3)
Ethical Considerations

Trademark, and 4) Trade Secret. Which protection is appropriate for an instructional multimedia CDRom? Here the discussion leans toward the patent and copyright laws for multimedia.

Patents are only granted on certain items, some concepts such as physical phenomena, laws of nature, and abstract ideas (like mathematical algorithms) do not qualify for patents. In addition, creating multimedia instruction can be very costly and take years to produce. Under a Unitarian perspective, educational material should be equally available to all. That adding protection, and thus restricting the use by others, inhibits free growth and thus the good of society. Furthermore, while producers would like to maintain ownership of their product, they also must be mindful of copyright laws to avoid infringements on other authors’ works.

Patents

Patently Absurd: The Ethical Implications of Software Patents (Stark, 2005), provides reflection on some ethical issues regarding technology patents. Quality software is essential to nearly all industries. However, innovative software development is often slowed down by litigation, anti-competitive behavior and questionable ethics. Quinn states a single patent can cost over $20,000 to attain and Perens asserts that the average cost per claim to defend a patent is $3 million dollars. (as cited in Stark, 2005) On the other hand, the manufacturing of software programs is substantially less expensive than the development of physical materials. Software development provides a more creative and ingenious method for production. Up until 1981, patents did not originally protect software. The case of Diamond v. Diehr ruled in favor of a patent for a machine that was controlled by software, thus opening the door for possible patents of software. The ethical dilemma caused by the granting of patents involves fair competition in an open market place. For example, large corporations could gain patents and then choose which other
company could have rights to use their product. Larger corporations would then share with other large corporations who own patents which inevitably will eliminate the smaller companies. The original intent to protect patents weakens the system by large companies who monopolize and build on their patents. Starks offers an example of this effect:

“If a small, university-based development team created the program and tried to market their product, Microsoft could decide that the software is a potential threat. Because almost every multimedia program involves double-clicking, and because Microsoft legitimately holds the patent, there is nothing legally preventing Microsoft from leveraging their patent portfolio as a means to coerce a settlement or buyout of the software.” (p. 60)

What is legal may not always be ethical. One framework of ethics refers to a utilitarianism view. Here an end result is what ultimately should determine rights. Utilitarianism perceives that the greatest benefit to the greatest number of people is what should determine the degree of ethical worth. Duty-based ethics states that the obligation to do the right thing is the determining factor of an ethical act. This framework, while considered ambiguous to Stark, has some future debatable ground for educational technology. He also values the “duty to non-injury” as a valid stance for patents causing harm to consumers. Patents can slow innovation and increase prices. The last framework, rights-based ethics, is undoubtedly agreeable to the patent holder. However, the rights of the general public are overlooked. Stark argues that patents should not be used for software based on these ethical considerations. He suggests that copyright is a better suited alternative for software. Authors can still be protected for their original works but it is the specific implementation of an idea and not the idea that it protected. This way no single company can control a software idea.
Copyright

If copyright is the answer, then particular attention should be given for the copyright’s role in multimedia. In 1997 a Fair Use Guidelines for Educational Multimedia was published in Liberal Education to assist educators in understanding the legal uses of various works within multimedia. The guidelines were developed through a two year process of debate amongst educators and representatives of copyright holders on what fair use entails. Fair use is a legal technicality that provides exceptions to the exclusive rights of copyright owners and provides limited use of copyright material to educators and students. Section 107 of the Copyright Act provides four factors for consideration of what constitutes fair use. The first factor is the purpose or character in which the material is being used. Does the material used add to a commercial or non-profit educational multimedia product? The guideline identifies educational multimedia products as “systematic learning activities.” An example differentiating commercial from non-profit educational institutions would be the current Video Professor training disks that are marketed on television. Video Professor is a multimedia training product which educates but its purpose and goal is to make a profit. Other examples of commercial products include Lynda.com and Total Training that provide a structured multimedia training product. These products (and thus producers) do not qualify for the exception to copyright material because they are not under a non-profit educational institution. They would then be required to obtain written permission to use any audio, video, photograph or illustration that they did not create themselves. The guidelines also mention that the copyrighted works must originally be obtained through lawful means. In other words, if a producer wished to add a clip from a movie into the multimedia product, they would first need to obtain the movie through a legitimate manner, such as purchasing the movie. The producer could not use a pirated copy or capture the image off the
movie’s trailer from the Internet. Educators can perform and display their multimedia projects so
long as it falls under the other factors. Permitted uses for educators would be face-to-face
instructions or assigned in a self study or remote environment. They may also use the material
for peer conferences, workshops, and within their portfolio. To use the multimedia projects they
created in an online setting, educators must ensure it is a secure electronic network that is
password protected. The guidelines suggest that networks which are not password protected
only maintain the created multimedia project online for no more than 15 days. Students may also
use copyrighted material within their created multimedia projects so long as it falls under the
other factors of the guidelines. In addition, they may keep their copy for inclusion into the
portfolio or for use in obtaining a job.

The second factor in determining fair use is the nature of the copyrighted work. The guidelines
failed to identify the meaning of this factor but it basically means how the works are used. An
explanation of this guideline is posted on the Muhlenberg College website. There it states that
the nature refers to the manner in which it is published. For instance, the nature can be a
consideration when the source comes from a text book or a magazine. The magazine article is
more likely to fall under a fair use. Also, factual data is more likely then creative, original, or
fiction works to be justification for fair use. Lastly, works that were designed for entertainment is
not as likely to be classified as fair use material.

The third factor listed in the Fair Use Guidelines for Education Multimedia pertains to the
amount and portion of the copyrighted work. Because no specific amount was given in the
Copyright Act, this area has been interpreted as a grey area. The guidelines were set through a
consensus of professionals as the reasonable amount but by no means are considered the law.

The following portions have been extracted from the guidelines into a table for simplicity:
In addition to the amount of copyrighted content one can incorporate into their multimedia projects, the fair use guidelines have a reasonable amount of time to be considered “fair use”. This multimedia guideline however appears to focus attention on PowerPoint type presentations of multimedia. Full multimedia projects tend to last much longer then the restricted 2 year and are too costly to reproduce every two years. In fact through the literature review readings of multimedia, many refer to multimedia as simply a PowerPoint type presentation that someone has integrated several technologies into, such as text, graphics and animation. Where as a true multimedia project is created through team collaboration over months or even years of work. The

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<th>Material</th>
<th>Maximum (which ever is less)</th>
<th>Special Note</th>
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<td>Motion Media</td>
<td>10 percent or 3 minutes</td>
<td>Poems &lt; 250 words = Entire work, 3 per poet Poems &gt; 250 words = 250 words, 3 per poet Anthology of Poems = 5 poems/different poets</td>
</tr>
<tr>
<td>Text Material</td>
<td>10 percent or Or 1,000 words</td>
<td></td>
</tr>
<tr>
<td>Music, Lyrics, and Music Videos</td>
<td>10 percent or Less than 30 seconds</td>
<td>No alterations that change the “basic melody” or “fundamental character” of the musical works.</td>
</tr>
<tr>
<td>Illustrations and Photographs</td>
<td>5 images by same artist or 10% or 15 images in published collective work</td>
<td>Difficult to define as the image usually requires the entire works.</td>
</tr>
<tr>
<td>Numerical Data Sets</td>
<td>10 percent or 25 fields/cell entries</td>
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guidelines as such described here thus become limited to the multimedia developer and more useful to the instructor preparing a class lecture. The last of the four factors listed in the guidelines article pertains to the effect of the use on the market value of the original material. If for instance an art instructor posts images of an artist’s work online so the students do not need to purchase the artist’s book, then he/she is effecting the potential market of consumers who might purchase the book.

Another article reviewed by Arn, Gatlin, and Kordsmeir studied the perceptions and understanding of these guidelines. The authors noted that research in this area was very limited and scant. In addition, there had not been much case law at the time the article was written in 1998. The research on these guidelines was conducted to gather knowledge on whether individuals actually knew what was considered “fair use”. Seventy-seven participants completed a questionnaire, sent via email. The questionnaire had 15 questions providing a sample scenario in using copyrighted material. The participants could answer either “Yes” if the

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**Copy and Duplication Limitations**

- Non-educational or commercial use – must obtain permission or a license
- Continued use beyond the terms below must obtain permission or a license
- Educator – faculty, teachers, instructors, and those involved in scholarly, research and instructional activities for non-profit:
  - 2 copies, one for educator and one for library on reserve
  - Up to a period of 2 years within a multimedia project
  - Up to 2 years on password protected network
  - Up to 15 days on unsecure network
- Student:
  - Within the course of the semester they are created
  - Unlimited time for portfolio and job/graduate school interviews
statement is correct or “”No” if the statement if incorrect. Scientific tools and measurement were utilized to detect any possible variances from demographics. The results were then graded in 10% increments whereby if the overall participants correctly answered a question within the 90% to 100% range the group received an “A”. The participants received an “F” for two of the questions. The first question that should a clear lack of understanding pertaining to copyright was “May an educator who wants to demonstrate to a class how to create multimedia work use copyrighted materials without permission?” The participants swayed towards the caution side as 50% stated “No” this would not be permitted. The other question that had significant results was “May an educator in a multimedia presentation for classroom use only 10% or less of a copyrighted video without obtaining permission?” Only 56% answered the question correctly by choosing “Yes”. However, this question is a little vague. The participants might have chosen “No” because they thought the 10 percent was another number. While the participants answer many of the questions on the conservative side, this may not be a good thing for “fair use.” Fair use is provided for educational purposes as a tool. Thinking on the conservative side will limit the degree that this tool is being used.

Privacy

Privacy has also become a great concern for many in the digital age. An excerpt from Theoretical Foundations of Multimedia (Tannenbaum, 1998) notes that a “multimedia producer has an obligation to consider the societal ramifications of his works.” The issue of privacy dates back to 1890 when the misuse of photography was put in the Harvard law review by Samuel D. Warren and Louis D. Brandeis. Tannenbaum cites their article:
“There is substantive support today for the proposition that privacy is a "basic right" entitled to legal protection. . . . There is an emerging recognition of privacy as a distinct, constitutionally protected right.”

The belief that privacy is a “basic right” is still well supported. Anne Wells Branscomb is cited that the technology is changing faster then the law. The process of the law to digital technology is through the agreement of free citizens on the norms and rule of behavior for its use. The digital information and technology is changing faster than the laws can be reviewed and then rewritten. Tannenbaum also identifies the relevance of privacy issues to multimedia developers is associated with the use of images and other information as it relates to individuals. When individuals take part in a multimedia project, the producer should obtain a release. A release is a formal written permission from the talent, model or narrator to use their image or likeness. Furthermore, releases or permission should be obtained when information about a particular person is incorporated into the multimedia production. It is also ethically and legally advised to limit the use of that information to the purpose for which permission had been granted.

**Deception**

Another ethical concern for multimedia is deception. To deceive is to cause one to believe what is not true or to give a false impression. (America Heritage Dictionary) Deception in multimedia is that act of deceiving through the use of visuals and audio. Illustrations and photography have essentially been reinvented with the onset of computers and digital software programs. An artist can manipulate their work with ease and speed. Video and audio can also be manipulated to edit out sections, stretch or reduce the speed of an action, and change the appearance. A person can either be edited into a video or cut out from a video without the viewer knowing. Never before
had false impressions been so easy to manipulate, creating an unprecedented moral, legal, and ethical dilemma.

*Digital Image Manipulation*

Images are converted to a digital format through *picture elements*. These elements, often called pixels, are the computer data of a complex series of ones and zeros that speaks computer language. Dawn Mercedes discusses the ethical considerations of manipulation to these pixels. (1996) Mercedes cites a book by Margot Lovejoy (1989) that relates the discovery of photography to this new era as it questions the “functions of art”. Issues such as photographic reality, artistic value, and image honesty are being questioned and reexamined. She first provides some ethical examples of picture alterations, such as O.J. Simpson’s Time magazine image published on July 27, 1994 or the National Geographic manipulating an image of the great pyramids of Egypt so that the image could fit on the cover layout. Then Mercedes acknowledges appropriation of images as another issue. Using another person’s image is a starting point for an artist to create their own image and borders on copyright infringement. Any copyright material used is unlawful unless it falls under the “fair use” doctrine. This exception often leaves an open-ended debate on what qualifies as “fair use”. There are many motivational reasons for someone to debate its use, most noted is that revising manipulating, and appropriating images can save the person (and company) time. Subjective interpretation of “fair use” had become the standard. While distorting images until they become unrecognizable seems to be an acceptable form of a new piece of art, modifying images for use in documentary, scientific or news programs are highly unethical and frowned upon. To protect images, copyright protection information can be embedded into an image. Also, Norwegian publications have put special symbols on their images
to inform the public when an image has been modified or altered. Mercedes suggests awareness as an important step to address issues and education as part of a solution. Education is a means for redefining this post modern culture.

**Availability/Access**

In a research study by Lin and Kolb (2006) a purposive sample of technology practitioners were interviewed about the role of ethics within design and training situations. Twenty practitioners in all participated in the study and each had a minimum of 2 years experience in either 1) design and development of online courses, 2) instructional technology support or 3) technology use in training programs. Eighty percent of the participants were between 25 and 45 and the group was equally divided between sexes. The interviews consisted of open-ended questions to be recalled directly to their work activities. The average interview lasted 40 minutes and was conducted over 4 months. Two interviews independently read and coded the comments. The data analysis was divided into three stages. Within this process the participants verified the content as encoded. Of the 20 participants, 75 % mentioned copyright as the number one ethical issue, 65% identified Learner privacy as an issue and in third place, 11 of the 20 participants acknowledged accessibility as an ethical issue and fourth greatest concern was diversity, being mentioned by 7 of the 20 participants as an issue. Since this paper has already reviewed copyright and privacy, the research collected from Lin and Kolb will focus on accessibility. The diversity results will be discussed further under the section proceeding section. Accessibility refers to a product reaching beyond the majority of users to a smaller group of users who may have more difficulty acquiring these sources. An example for accessibility concerns are users with special needs. While they may physically obtain a copy of an instructional multimedia product it may not be accessible if it
doesn’t have the require components for them. One participate stated they could really do something cool with the technology but then it wouldn’t be accessible and they need to make it 100% accessible. The participants stated in general that it is more important to make it accessible then to add on fancy technological features and “cool” effects. The authors stated that accessibility is the “most troublesome” ethical issue because of the societal concerns. A gap between those with access and those without access may impact life and societal groups because the groups without access will have a disadvantage in society. For instance, if individuals who are deaf do not have accessibility to training because the training incorporates audio, then they may not be able to improve their skills or compete for jobs. The accessibility concern is related to the digital divide. Those who have not typically are already at a disadvantage. Accessibility restrictions will only increase the gap (or divide) amongst special groups. One concern with accessibility is cost. Multimedia projects can be quite expensive and the cost of making projects accessible need to be budgeted into the cost of production.

**Fairness/Equality**

Fairness and equality are two other concerns with multimedia projects. Fairness is the “ability to make judgments free from discrimination or dishonesty. (WordNet) Equality is “the state or quality of being equal; correspondence in quantity, degree, value, rank, or ability.” (Dictionary.com) Fairness and equality play a role in the creation of multimedia projects and as such are an ethical issue to consider. As mentioned in the introduction of this paper, fair representation and equality have been researched in other forms of media, such as television. It took decades from the birth of film before substantial research was gathered on this issue. However, in the development of multimedia, the ethical issues and awareness of earlier
technologies, as they relate to multimedia, should also be included into an ethical review of issues involved in multimedia. Therefore, the equal and fair representation of diverse groups are a factor in developing ethically appropriate content. In addition, large multimedia projects may expand to international territory. International projects have additional ethical issues then those already mentioned. Cultural ethics is the awareness and respect of vary cultures without the intention to change that culture. A analysis on this issue from Bradshaw, Keller, and Chen (2003) reviews some ethical concerns multimedia developers need to be aware of in their design and development of projects.

Diversity

Linear and Kolb’s study mentioned earlier also revealed that diversity was an issue for 35% of the technology practitioners when designing and developing training situations. Technologist need to be conscious about the impact of the material on diverse backgrounds. The material first needs to be understandable and meaningful to a broad group of learners. Various cultures and backgrounds can have different meanings for an assortment of words typically used in one context. In addition, it should be respectful of the cultural and diverse backgrounds. As an ethical issue, diversity also means doing no harm to others through stereotypes and discrimination. For instance, in a multimedia project scenarios are often included as instruction. Repeatedly depicting minorities in negative scenes would be unethical. Multimedia developers should be aware of discriminations in the script for age, gender, race, religion ethnicity, sexual preference or any thing else that may be sensitive to others. It is good practice to have diverse groups provide input and feedback on the multimedia content. In larger multimedia projects which involve group collaboration, a diverse team will assist in providing fair representation.
Cultural Ethics

In *Reflecting on Ethics, Ethical Codes, and Relevance in an International Instructional Technology Community* (Bradsaw, Keller, and Chen, 2003) the authors examine the complexity in the development of an international code of ethics. They first distinguish the difference between morals and ethics. Morals are social values while ethics surpasses this to encompass what should be done. Ethics has more of a utopian quality and mores will vary across diverse groups and societies. The authors question if the greater good could me generalized into a set of standards and if a universal set of ethical codes can share equal relevance in diverse contests?

Professional codes of ethics consist of of guidelines that relieve the professional from setting individual standards while also providing a consistent foundation of guidelines for the field. In an study Bradshaw, etc cited by Leach and Harbin (1997), a comparison of the code of ethics were conducted for 24 countries. There were dissimilarities in the perspectives of all the social and cultural contexts considered. Another article cited asserted that a universal formula was impossible, based on their methodological research. (Walsh-Bowers, and Rrilletensky, 2002) Bradshaw, etc projects that a universal code can collaboratively be constructed under certain circumstances and with objective considerations. They state that certain elements need to be taken into account, such as 1) practical needs and realities, 2) practices and concerns, and 3) the subjects or people who may be impacted by unethical behavior.

The challenge to generalizing ethics for diverse groups is in varying interpretations. The authors identify the following considerations: 1) Language, 2) Power and Symbolic Capital, 3) Contextual Factors, 4) Relevance & Relevance Theory. The language can be confusing through language structure, syntax or word choice. For example single pronouns or gender words, simple
distinction words such as wish and hope, and the perception or sense of the word such as “must” which can be translated in a forceful or disrespectful way. Power and Symbolic Capital refers to the social status and cultural ascendancy. Often those in power are supported by those who are not in power. Symbolic power shapes the people’s experience and their personal dealings within it. This power is not only monetary but can also come from labels such as first world and third world or even less developed or developing countries. The third area identified, Contextual Factors, and relates to the context of ethical issues. The widely used example to determine the degree of a wrongful act is if it’s a parent stealing to feed his child. An absolutist would argue that any stealing is wrong regardless of the context. The Relevance and Relevance Theory explores the terminology of relevance as it relates only through the context. The individual codes need to be relevant on an individual basis or they will likely be dismissed. The receiver interprets the code base on inferences received from perceptions of the sender’s intent. The context therefore is constructed by the receiver. Relevance Theory has four assumptions for communication: 1) every word had a assortment of possible interpretations, 2) interpretations are not simultaneous, 3) there’s a single criterion to evaluate interpretations, and 4) the criterion can exclude all but a single interpretation. Hence, developing an ethical code challenges the guidelines to contain relevant information to both the sender and the receiver.

Bradshaw, etc. cites Freire’s (1996) concern over ethical universalism, that “cultural invasion” occurs when a culture penetrates another group and tries to instill their own views on that group. The intention may have a agenda which could be from good thoughts. Cultural relativism in response suggests that morals are subjective and outsiders tend to lack understanding in a local context, thus should not criticize the cultural practices of other groups. Bear in mind, that while local practices may be moral (relating back to the earlier definition of a uniform social value) but
may also be unethical (wrong). A culture synthesis rejects an invasion of one group but supports each group’s contribution. To become a global member of instructional technology professional “we need to move from serial ethical development to parallel ethical development.” (Bradshaw, etc. p.18) A global ethical code can be established through shared inputs. This in turn provides a mutual learning environment through cultural synthesis instead of cultural invasion.

Conclusion

The literature in review provided some look into ethics as it pertains to multimedia. However, much of the research seems to lack in three areas. First many articles refer to multimedia as a presentation media, such as a PowerPoint presentation. A presentation which integrates various forms of media is a very simple form of multimedia. There is such a vast perspective of the terminology and capability for multimedia that providing an ethical code to fit all the needs may not always be appropriate. The difference between presentations and a series of instructional products containing integrated technologies that makes up one structured course is like comparing a bicycle and a 757 jet plane. They both may have a seat, wheels and can transportation a person but obviously it takes more resources, efforts, and time to build a plane. The vague interpretation of multimedia hinders a thorough review of possible ethical issues for larger productions.

The second issue that the review seems to lack was current research into the topic of multimedia research. Most of the articles found were several years old. Current trends and technology have changed at a rapid enough period that new issues may identified and should be explored. Also, several articles on multimedia ethics stated that awareness and information about copyright, privacy and other concerns need to propagate amongst users before ethical systems can mature.
For instance, as users become aware of the fair use guidelines, they are able to use it more fully and thus gain effective use of the laws and rights as it’s intended to be used. Out dated materials can not give a perspective on how this awareness has changed or even if it’s improved.

The third issue within the current available research on ethics multimedia relates to scientific research. Only a couple articles located on multimedia offered any form of study. In addition, the couple studies that included some degree of research was provide only small samples. While the one study conducted by Lin and Kolb did seek out a purposive sample of 20, this is still a very small sample considering the growth of Instructional Technology professionals.

Furthermore, studies have not given detailed views of such issues as professional conduct, which would be a huge part of larger multimedia productions. The current research lacks content analysis of diversity representation, accessibility issues and its impact, privacy of data retrieval and deception issues enabled by multimedia technologies. It is suggested that these topics be further investigated. Research needs to stay on top of changes so that proper guidelines can be set. The abilities for full length movies to be streamed online reflect the progress we’ve made in compression. Many training courses are now being provided through Internet access and it multimedia courses will continue to grow.

References


