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Female Youth Social Empowerment through Educational Technology:
Digital Film as a Critical Language of Transcendence

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In North America, the acronym for "Information Communication Technology" has often been reduced to "IT", ignoring the communication aspect of this field of study. Interestingly, the communication part is specifically the one that females generally identify to and prefer. Could this presumably insignificant modification represent the absence of the feminine perspective in ICT?

Contrary to the trend in other scientific disciplines, Snyder, Tan and Hoffman's study (as cited in Sanders, 2005, p. 3) shows that, in the United States alone, the number of women acquiring degrees in computer science dropped by almost a third between 1982 and 2002. Internationally, current statistics reveal that women's levels of participation in ICT do not usually reach 10%, as found in Charles & Bradley's paper (as cited in Sanders, 2005, p. 3).

In other words, technology is an influential field in which women's contributions have diminished during the last generation.

> As Sanders (2005) puts it: In view of the growing role of technology
>
> in the world at the beginning of the 21st century – in education,
>
> communications, occupations and entertainment, and as a tool
>
> for solving the world's problems - women's low and decreasing
>
> representation is a major worry. (p. 4)

It has been observed that the drop in women's participation in IT mainly happens during their high school careers (Sanders, 2005). Therefore, this paper will attempt to shed some light on the ramifications of technological literacy for female adolescents. The intent is also to explain how the reinstatement of the "communication" aspect of I"C"T in education, using digital film

communication, can indirectly trigger young females' interests in the technical and data

management components typical of information technology. By accommodating girls' learning

styles while using ICT tools at school, they gain confidence in their technological application

competencies and by extension broaden their professional prospects in technological fields.

<div align="center">Concepts and Assumptions</div>

Terminology

      For the sake of concision and clarity, in the pages that follow:

1. The term "youth" will refer to teenagers, specifically high school students.

2. The concept of "empowerment" refers to: the ability to discern between

   propaganda and information; individual freedom and social responsibility; the

   mastery of technological tools and processes needed to see through

   misinformation; and the necessary capabilities to take action and rectify it.

3. The "grammar of filmmaking" is a metaphor defining film as a language using

   frames, shots, scenes and sequences to convey an original message.

4. IT: indicates the "[…] development, implementation, support of management of

   computer-based information systems, particularly […] computer hardware"

   (Wikipedia, 2008).

5. ICT: "[…] encompasses […] technologies for broadcasting information – radio,

   television; and technology for communication through voice and sound or images

   – microphone, camera, […]" (Wikipedia, 2008).

6. "Technology" in this paper, relates chiefly to communication technologies; the

   focus on communication is to demonstrate that when young women become

   proficient in using ICT tools in the classroom, their confidence level increases,

giving them a better chance at choosing professions requiring technological

expertise in the future.

7. "Male": if stereotypical masculine attributes seem derogatory in view of women's

deficient membership in the male dominated professions encompassing ICT, no

subversive discourse is intended; on the contrary it is presumed that masculine

traits and contributions are invaluable to any healthy society.

Contemporary Issues and Methodological Considerations

While some of the research on gender and technology may be quite recent, changes in the

field are so rapid that by the time a study has been concluded, some parameters may already have

become irrelevant. For example, concerns about women's accessibility to computers have

diminished with the advent of laptops. As a result of this new invention young women don't have

to worry about their safety while walking to a computer lab on a school campus when it is dark

(Sanders, 2005). However, in homes with only one computer, males still tend to monopolize the

tool (Gunn, 2003); an important concern when considering that homework is increasingly done

on computers and that e-courses are becoming more popular (Christensen, 2008).

Another investigative issue currently challenged is the traditional link between ICT and

hard sciences. While many past papers stressed the predominant male ratio in the fields of

mathematics and science, more girls have become interested in these disciplines during recent

years (Sanders, 2005). That being said, the underrepresentation of women in these subjects is still

significant. To attract more women, there may be a need to broaden the usual ICT linkage with

exact sciences by incorporating media arts components in ICT courses.

According to Little and Hoyles (cited in Sanders, 2005, p. 4), after considering the

aforementioned technological and societal developments affecting women's participation in ICT,

many researchers have refocused their studies on: (a) attitudinal imbalances favoring males as the main users of computers at home and in school, (b) the negative consequences of conventional ICT activities on female participation, and (c) the need for a shift in ICT's academic associations in order to appeal to a feminine clientele.

Inspired by this current trend of investigation on the subject, this essay will explore: (a) media literacy and the grammar of film making as meaningful avenues to transform young women's attitudes toward ICT, (b) the active processes and necessary technical skills used in digital film production as channels to reroute the programming focus established by masculine perspectives, and (c) the communication and artistic aspects of audio-visual storytelling as valid and empowering for female students, thus endeavouring to restore the "C" in "ICT".

<div align="center">Digital Film Communication and changes in Attitudes</div>

A vast body of literature has already identified that in the male IT culture anonymity, isolation, and competition prevail (Sanders, 2005). As the feminine presence on the Internet demonstrates, with women's dominance on social networks and blogs, females prefer to communicate and cooperate. It has been clearly verified that when asked to choose, female students favor using the computer for sharing and collaborating (Sanders, 2005).

The Validity of Digital Film Communication Literacy

Digital film making is an alternative form of media literacy well suited to support female youth's interests in communication and socialization. For instance, one of the important aspects of film making is selecting a theme, researching it and devising an original angle to promote the chosen concept. In order to create a public service announcement on, say, anorexia, students must spend a great deal of time finding data and statistics about this issue. Once a clear mental picture is created around this topic, young cinematographers must use the grammar of film making to

invent an innovative and enticing way of communicating their message. Like any professional advertisement campaign, the endeavor is to hook the members of the audience; or in other words, to convey a powerful message and influence the public's behavior.

The distinctions between educational and mainstream media. A major difference between digital film communication and commercial media, however, is that the educational aspect of film making centers its attention on social contribution, rather than consumption. Furthermore, the intent behind the creation of media shared among adolescents is to promote citizenship and awareness (Greenhow, 2008), not to concoct artificial needs in order to increase financial gains.

Key factors: the manufacturing of information and critical thinking. This is not to say that mainstream media only produce rubbish messages, detrimental to the public. On the contrary, if chosen with discernment, valuable information can be disseminated among citizens by a number of legitimate agents such as journalists, editors, documentary makers and bloggers. The key issues reside in a clear understanding of the iteration involved in the process of media production (Stables, 1997) as well as the critical assessment needed to decide which documents to access or avoid; believe or distrust. These are the intellectual outcomes of a digital film communication program.

A number of ethnographic studies have recognized that female youth is often represented with a negative bias in conventional media: "girls as fashion obsessed and impressionable" and "teen mothers as […] welfare bums", to give only a few examples (Kelly, 2006). Moreover, no one will refute the fact that women's bodies, young and old, are ruthlessly exploited by advertising firms to sell innumerable products; from cars to cigarettes. Magazines, television commercials, and even newspapers disseminate these kinds of images and contribute to the distortion of young females' self-identity, while also cultivating a submissive attitude.

Young females involved in digital film communication become more aware of the stratagems that promotional media utilize to influence their self-image, their choices, and by extension, their lives. Equipped with such powerful incentives to act, young women easily become enthralled with technological tools enabling them to take action. The creative and critical processes involved when using communication technology can be highly motivating for female youth. Analyzing the media and creating their own scripts and stories also provides them with effective strategies to respond to gender bias and commoditization of youth image in commercial broadcasting (T. Riecken, Conibear, Michel, Lyall, Scott, Tanaka, Stewart, J. Riecken, & Strong-Wilson, 2006).

Film making using digital technologies generates a language of transcendence, which facilitates the articulation of a discourse surpassing the limits set by the mass media's ordinary hubbub. Digital film communication allows female students to develop healthy self-representations, responsible voices (Riecken et al., 2006) and to promote active social contributions among their peers. From this point of view, media literacy and the grammar of film making offer powerful means of combating young women's apathy (Bell, 2005) toward some of the manipulative effects of mainstream communication channels. In fact, focusing on content relevant to women can also give female students an excellent reason to learn the technological processes characteristic of ICT and multimedia tools.

Furthermore, the ability to share their authentic views with peers and parents through digital film technology also instigates a mind-set transformation both at school and at home vis-à-vis the role of women in technology. DVD's are easily copied and can be shown to family members. Screenings at school make it possible for young women filmmakers to present their

work to other students and by the same token, demonstrate their technological aptitudes to other female youth; thus advancing the case for female participation in ICT.

Finally, the hands-on experience of movie making brings about an appreciation for the spin involved when publishing media content. It also cultivates a point of reference from which to analyze the validity of information distributed by conventional communication agencies.

Digital Film Production: ICT Activities Suited to Female Youth

In Canada, as well as in other countries where technological advancement has been possible, much of the focus has been on programming and students interested in technology are often seen as geeks, nerds or antisocial (Sanders, 2005). These kinds of stereotypes do not appeal to female youth who, as mentioned previously, greatly value social interaction.

In contrast to the mathematical emphasis of computer programming, the educational process of digital film making centers its activities on the production of a message. Rather than learning the operations of a computer for the sake of understanding the machine and its intricacies, film making presents the use of technology as a vehicle necessary to create an experience. While the traditional pedagogy applied in computer science tends to encourage individual work, film production requires the formation of crews and underscores the need for collaboration. All the above mentioned digital film production specificities are much more inviting for young female high school students than the male oriented training promoted by conventional IT courses.

Tools to deconstruct and reconstruct.

The basic devices and operations needed for the creation of a digital film are as follows:

1. Research: Learning to use the Internet as well as other sources in a safe and
   perceptive manner.

2. Script and story boards: Learning how to tell a story visually, keeping the target audience in mind.

3. Cameras, lighting and tripods: Learning the meaning of angles and the principles of artistic design.

4. Microphones and digital musical instruments: Learning about the link between sound and emotional responses.

5. Editing software: Learning about sequencing events, layering meanings as well as manipulating video and audio to achieve desired effects.

6. Screening & distribution (DVD or the web): Learning to transfer the final product on digital formats as well as to pitch and present it to an audience.

The advantage of such instruments, methods and processes are inherent in the fact that they enable female students to deconstruct and reconstruct media representations of young women as well as to develop their voices while exploring any selected topic. Other positive characteristics of digital video lie in its uncomplicated reproduction and transmission operations as well as its social authority and attractiveness (Collins, Neville & Bielaczyc, 2000).

Some restrictions created by this medium consist in the lack of interactivity of the completed product; the expensive nature of some of the equipment; and the dexterity needed to produce a coherent and engaging movie (Collin et al., 2000). Recent developments have however decreased the cost of computers, digital cameras and DVD's. What's more, the latest editing software is easier than ever to manage.

Activities designed to protect (deconstruct) and prepare (reconstruct).

From the initial research step to the final screening phase, the tasks included in the production of a message using digital film in the classroom have two major functions: to protect and to prepare.

Protection. In a world inundated by audio visual information, students benefit from performing activities that will augment their critical thinking abilities in order to circumvent the risks inherent to a media culture (Poyntz, 2006). Girls, in particular, gain from a lucid perception of the role they are made to play in the male fantasy saturated media environment to which they are regularly exposed.

Deconstruction. In addition to the protection it can provide at the individual level, educational technology can also play a valuable role in the nurturing of global awareness and engaged citizenry. The deconstruction, or analysis, necessary to produce student-made public service announcements and documentaries on racism, environmental issues or religious diversity can have a strong influence on young people's values and conduct (Kline, Steward, Murphy, 2006).

Preparation. The goal of educational technology's preparation aspect is to counter the possible dangers comprised in young females' overexposure to commercialized representations of womanhood. To prevent or minimize potential harm (from submissive obedience to eating disorders), one of the most powerful methods is developing girls' competencies in the operation of the same tools with which they are being influenced.

Reconstruction. Learning the techniques employed to create meaning in moviemaking empowers female students with the capabilities of reconstructing similar products. The difference is that this time, they control the content and the depiction of the characters.

Innovative recommendations. In her article about participatory media Greenhow (2008) mentions a movement towards innovative norms in the field of technology. In 2007, the International Society for Technology in Education (cited in Greenhow, 2008, p. 190) recommended, among other suggestions, the use of educational technology to: (a) invent unique products, (b) socialize with fellow students, (c) express concepts, (d) exhibit responsible use of information, and (e) advocate citizenship.

It goes without saying that all these prescribed approaches are in line with the digital film production's protection and preparation philosophy. The focal point of each recommendation targets the outcomes achieved with technology rather than the technological tools themselves. Additionally, every suggestion directly or indirectly addresses the subject of communicating.

<div align="center">The Power of Communication</div>

When endeavouring to restore the "C" in "ICT", two layers of meaning must be considered:

1. Communication between students and teachers during the creation steps

2. Communication between students during the dissemination phase

The feminization of pedagogy

On the one hand, the traditional top down interaction between instructors and learners is challenged by the innovative characteristics of communication technologies. Teachers as well as students continually adapt to ongoing software improvements and digital format trends, just to name a few of the innumerable technological upgrading experienced on a regular basis in the ICT classroom.

This state of affairs makes it literally impossible for teachers to be the sole providers of knowledge. Indeed, the recent saying portraying educators as the "guide on the side" rather than

the "sage on the stage" is justifiable within these continuous adjustments' parameters. In other words, communication technologies alter hierarchical ranking by positioning youth as co-investigators and as knowledgeable (Kelly, 2006). Women, who tend to work more effectively in collaborative settings, particularly benefit from these modern pedagogical paradigms.

The demystification of women's ICT potential

On the other hand, educational technologies such as digital film production grant authority to youth as rightful transmitter of knowledge through their films and the messages they choose to convey to their peers. Any experienced teacher will agree with the adage that nothing is more powerful that students teaching students (Welsch, 2008). In fact, the nature of digital film communication facilitates the screening of movies in front of large adolescent audiences. The powerful broadcasting quality of this medium is apparent on virtual platforms like YouTube, where millions of young people view independent films every day.

With this distribution power, young women's perspectives are transmitted to fellow students and family members. Moreover, the technical dexterity required to express these viewpoints in an entertaining and educational manner is competently demonstrated through their final products. This technological adroitness attests young women's potential in ICT, hence demystifying females' lack of aptitude in technology.

In conclusion, Sanders (2005) noted that female students were often disheartened by the masculine focus on competition in IT, and that a lack of confidence in their computer abilities often elicited less interest in professions connected with informational technology.

Digital film communication offers female students an environment conducive to self-esteem. The focus on cooperation, creativity and communication presents young girls with opportunities to demonstrate their technological application know-how. Considering the

increasing power of technology in all areas of life during this new millennium, women's

representation in the field is crucial. Therefore, the way IT is taught should be re-invented to

foster media literacy and value females' communication interests (Sanders, 2005). The masculine

traits of IT instruction must be challenged by redefining educational technology and by

reinstating and emphasizing the "C" in ICT.

References

Bell, B. L. (2005). Children, youth, and civic (dis)engagement: Digital technology and

citizenship. *Canadian Research Alliance for Community Innovation and Networking,*

(CRACIN, paper No. 5). Retrieved October 9, 2008 from:

http://www3.fis.utoronto.ca/research/iprp/cracin/publications/pdfs/WorkingPapers/CRACIN

%20Working%20Paper%20No%205.pdf

Charles, M., & Bradley, K. (2005). A Matter of degrees: Female underrepresentation in computer

science programs cross-nationally, ENWISE, 2004. In J. McGrath Cohoon & William C.

Aspray (Eds). *Women and Information Technology research on the Reasons for*

Underrepresentation. MIT Press, 2006.

Collins, A., Neville, P., & Bielaczyc, K. (2000). The role of different media in designing learning

environments. *International Journal of Artificial Intelligence in Education, 11*, 144-162.

Christensen, C. M. (2008). *Disrupting class: How disruptive innovation will change the way the*

world learns. New York: McGraw-Hill.

Freire, P. (1970). *Pedagogy of the oppressed.* (D. Tweedie, transcription). Continuum Publishing

Company. (Original work published 1968). Retrieved November 10, 2008 from:

http://marxists.anu.edu.au/subject/education/freire/pedagogy/index.htm

Gunn, C. (2003). Dominant or different? Gender issues in computer supported learning. *Journal*

*of Asynchronous Learning Networks, 7(*1), 14-30. Retrieved October 8, 2008 from:

http://www.sloan-c.org/publications/jaln/v7n1/pdf/v7n1_gunn.pdf

Greenhow, C. (2008). Connecting informal and formal learning experiences in the age of

participatory media: Commentary on Bull et al. (2008). *Contemporary Issues in Technology*

and Teacher Education, 8(3), 187-194. Retrieved November 8, 2008 from:

http://www.citejournal.org/articles/v8i3editorial1.pdf

Kelly, D. M. (2006). Frame work: helping youth counter their misrepresentations in media.

Canadian Journal of Education, 29(1): 27-48. Retrieved October 8, 2008 from:

http://www.csse.ca/CJE/Articles/FullText/CJE29-1/CJE29-1.pdf#page=11

Kline, S., Stewart, K., & Murphy, D. (2006). Media literacy in the risk society: toward a risk

reduction strategy. *Canadian Journal of Education, 29*(1): 131-153. Retrieved October 8,

2008 from: http://www.csse.ca/CJE/Articles/FullText/CJE29-1/CJE29-1.pdf#page=11

International Society for Technology in Education. (2007). *National educational technology*

standards for student: the next generation. USA.

Littleton, K., & Hoyles, C. (2002). The gendering of information technology. In Nicola Yelland

& Andee Rubin (Eds.), *Ghosts in the Machine: women's voices in research with technology*

(pp. 3-32). New York: Peter Lang Publishing, Inc.

McCarthy, R., & Berger, J. (2008). Moving beyond cultural barriers: successful strategies of

female technology education teachers. *Journal of Technological Education, vol. 19*, No. 2,

Spring 2008. Retrieved October 8, 2008 from:

http://scholar.lib.vt.edu/ejournals/JTE/v19n2/pdf/mccarthy.pdf

Poyntz, S. R. (2006). Independent media, youth agency and the promise of media education.

Canadian Journal of Education, 29(1): 154-175. Retrieved October 8, 2008 from:

http://www.csse.ca/CJE/Articles/FullText/CJE29-1/CJE29-1.pdf#page=11

Riecken, T., Conibear, F., Michel, C., Lyall, J., Scott, T., Tanaka, M., Stewart, S., Riecken, J., &

Strong-Wilson, T. (2006). Resistance through re-presenting culture: aboriginal students

filmmakers and participatory action research project on health and wellness. *Canadian*

Journal of Education, 29(1): 265-286. Retrieved October 8, 2008 from:

http://www.csse.ca/CJE/Articles/FullText/CJE29-1/CJE29-1.pdf#page=11

Sanders, J. (2005). *Gender and technology in education: a research Review*. Retrieved October

8, 2008 from: http://www.josanders.com/pdf/gendertech0705.pdf

Snyder, T.D., Tan, A. G., & Hoffman, C. M. (2004). *Digest of Education Statistics 2003.*

Washington DC: U.S. Department of Education, Institute of Education and Sciences.

Stables, K. (1997). Critical issues to consider when introducing technology education in the

curriculum of young learners. *Journal of Technology Education, vol. 8,* No. 2. Retrieved

October 8, 2008, from: http://scholar.lib.vt.edu/ejournals/JTE/v8n2/pdf/stables.pdf

Welsch, M., personal blog, *A vision of students today (& what teachers must do - brave new*

classroom 2.0), October 21, 2008. Retrieved from:

http://www.britannica.com/blogs/2008/10/a-vision-of-students-today-what-teachers-must-

do/

Wicklein, R.C. (1997). Curriculum focus for technology education. *Journal of Technology*

Education, vol. 8, No. 2. Presented at the 1996: *Technology Education Issues Symposium*,

Hawaii.

Wikipedia: definitions of IT & ICT. Retrieved November 11, 2008, from:

http://en.wikipedia.org/wiki/Information_technology and

http://en.wikipedia.org/wiki/Communication_technology