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Online, tuned in, turned on: multimedia approaches to fostering critical media health literacy for adolescents

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The commercial media is an influential sociocultural force and transmitter of health information especially for adolescents. Instruction in critical media health literacy, a combination of concepts from critical health literacy and critical media literacy, is a potentially effective means of raising adolescents’ awareness about commercial media and its influence on their health. We first provide background on critical media health literacy for adolescents. We then discuss the potential for involving adolescents in creating multimedia to demonstrate basic principles of critical media health literacy skills. Using excerpts from two of our research projects to illustrate our ideas, we draw conclusions and suggest future research in critical media health literacy for adolescents.

Keywords: adolescents; health education; critical media health literacy

The commercial media is an influential sociocultural force and major transmitter of health information. It has an especially large impact on the health and well-being of adolescents. While the Internet has made access to valid media-based health resources more straightforward, the commercial media’s profit motive and ubiquitous presence online make its influence on health more problematic. Critical media health literacy (CMHL) instruction is a potentially effective means of teaching adolescents how to critically evaluate the purposes and persuasive techniques of the commercial media and its influence on their health. In our research and pedagogical work we maintain that:

critical media health literacy is a right of citizenship and empowers individuals and groups in a risky consumer society to critically interpret and use media as a means to engage in decision making processes and dialogues; exert control over their health and everyday events, and make healthy changes for themselves and their communities. (Wharf Higgins & Begoray, 2012)

In this article, we discuss the potential of involving adolescents in creating multimedia to raise their awareness of basic principles of CMHL. We begin by reviewing literature on adolescent health, CMHL, and multimedia. Using excerpts from two of our research case studies (drawn from a larger mixed methods study) to illustrate
these ideas, we then draw some conclusions about the use of CMHL approaches with adolescents and suggest some future research directions. CMHL development in health education has the potential to engage adolescents in decision-making about healthy behaviours as individuals and as members of society who can more actively participate in our media saturated culture. Understanding healthy behaviours and the commercial media’s impact on them is of course different than adopting healthy behaviours; however, we maintain that questioning the media as part of health education is a necessary precursor for adolescents to improve their health.

Adolescent health as a societal priority

The health of adolescents is of increasing concern, both in Canada (Colley et al., 2011; Wilmot, Begoray, & Banister, 2013) and around the world (World Health Organization, 2008). The onset of chronic diseases, normally occurring in mid to late adulthood, is becoming more prevalent among younger ages (American Cancer Society, 2008; Van Cleave, Gortmaker, & Perrin, 2010; Zimmet, 2011), reflecting the complex relationship between lifestyle choice and obesogenic environments (Marmot, 2007). In turn, lifestyle attitudes and practices primed during adolescence carry over to and remain intractable in adulthood (Pietiläinen et al., 2008; Trudeau, Laurencelle, & Shephard, 2004). Much of the blame is thought to lie in the social context for today’s adolescents and their interaction with and dependence on various media (Bergsma & Carney, 2008; Kline, Stewart, & Murphy, 2006; Strasburger, Jordan, & Donnerstein, 2010). Indeed, the media can be impugned on two counts: facilitating the sedentary nature increasingly characterizing youths’ lives (Tremblay et al., 2010), as well as encouraging other unhealthy decisions with regard to eating, substance use, sexual practices, and bullying (Brown & Bobkowski, 2011; Levin-Zamir, Lemish, & Gofin, 2011) to name but a few. Appreciative of the social and ecological factors shaping life choices, we recognize that health education is a necessary but insufficient component for successful behaviour change (Wharf Higgins, Begoray, & MacDonald, 2009). Nonetheless, we believe that the responsibility of schools to foster healthy and productive citizens (Paakkari & Paakkari, 2012; Wharf Higgins & Begoray, 2012) includes their development of positive attitudes toward, and critical skills in, making healthy decisions for themselves and their communities (Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005; Marks & Wharf Higgins, 2012). Developing what we have termed CMHL then is based on new understandings about adolescent literacies in the twenty-first century.

CMHL for twenty-first-century adolescents

Our concept of CMHL is based on conceptions of critical health literacy and on critical media literacy (for a detailed explanation of concept development see Wharf Higgins & Begoray, 2012). Critical health literacy has been variously defined and the idea of media literacy has become a feature of critical health literacy more recently. Nutbeam’s (2000) three levels of health literacy include first, functional skills in reading and writing; second, interactive social skills and finally skills in critical analysis so that those who are critically health literate might ‘exert greater control over life events and situations’ (p. 264). This highest level is based on having skills from the first two levels. In his later work, Nutbeam (2009) discusses the idea of an
expanded view of literacy. He recalls his earlier conception of literacy as reading and writing but adds the newly important ‘literacies emerging in response to information technologies and context specific literacies such as media literacy’ (p. 303).

Although adolescents are surrounded by images vying for their attention, and are active media users, they are not necessarily media literate; that is able to understand and evaluate media messages. In their lives outside school, adolescents are involved in a variety of media literacy practices. They play video games, write blogs, design websites, participate in Facebook and Twitter, Skype with friends overseas, create online photo collections and digital magazines/comics and make YouTube videos (Gee, 2003). In school however their activities are often quite different.

As in other subject areas, adolescent health education classes are still dominated by pen and paper reading and writing. Writing opinion essays on drinking and driving or reading information brochures on STDs still holds a valid place in the classroom; however, modern literacy scholars (e.g., Alvermann, 2006; Gee, 2003; Lankshear & Knobel, 2006) recommend that media literacy approaches be used in the classroom to motivate students, expand the range of learning skills used by adolescents, involve students in social activism and improve learning. Indeed, creating multimedia of various types helps adolescents to become more flexible in adapting and transforming textual conventions (Pelletier, Burn, & Buckingham, 2010). Essays might become blogs with embedded photos; websites might be created with health information gleaned from understanding and evaluating other online material. A wealth of other media literacy activities are possible (as seen in our studies described below). The out-of-school literacies of adolescents need to be used more frequently in school.

Major literacy organizations such as National Council of Teachers of English (ncte.org) and International Reading Association (reading.org), and Ministries of Education in Canada acknowledge the importance of skills in a range of literacies (e.g., British Columbia Ministry of Education, 2013); however, they have been slow to address how to help adolescents understand and evaluate the impact of media in a digital age. The commercial media discovered long ago how to surround adolescents with their messages using for example billboards at bus stops, logos on clothing and on coffee cups, and signage on school vending machines. They have now extended their reach through powerful multimedia creations encountered frequently by adolescents online: advertising embedded into games, music videos, blogs, and even television programs (Levin-Zamir, Lemish, & Gofin, 2011). Therefore, not only do students need to be more engaged in school with multimedia, ‘a focus on … critical digital literacies is sorely needed … if we wish to develop critical thinkers who will be engaged participants in our democracy’ (Gainer, 2010, p. 15) and who will be able to control their own health behaviours and attitudes.

MediaSmarts (2014) has found that 99% of Canadian students grades 4–11 have access to Internet outside of school and many have mobile devices that allow Internet access anywhere. They are looking for news, sports and entertainment information, but also for information on ‘physical and mental health issues, relationship advice and sexuality’ (n.p.) through websites with print text but also through multimedia such as videos. Yet, most young adolescents in grades 4–6 have had no education even on basic online safety, much less on issues such as media targeting. And online habits are changing rapidly. Mobile devices are now common, as is social networking and access to videos on YouTube and online television.
Canadian parents are particularly concerned about lack of critical media literacy education. They believe that:

schools [are] often requiring their children to use the Internet for assignments and homework but [are] not necessarily doing enough to prepare them to deal with the pitfalls. The corporations that own the sites their children visit [are] also seen as untrustworthy because they [are] encouraging kids to disclose ‘everything’ in order to make a profit. (MediaSmarts, 2014, p. 3)

In general, children and adolescents need to become more critically media health literate. In other words, they need to have the capacity to recognize whether a source is credible, understand the purpose of the message and determine whether the source is true (Center for Media Literacy, n.d.). Hobbs (2011) reminds us that teaching digital and media literacy effectively involves maximizing positive features and minimizing the negative features. With students now online for eight hours a day (Kaiser Family Foundation, 2010), often participating in ‘media multitasking’; that is, involved in more than one media platform at the same time, the need for critical media literacy education seems more important than ever.

Much like Nutbeam before her, Chinn (2011) identifies three domains of critical health literacy that include critical appraisal of information, understanding social determinants of health and collective action. Chinn notes further that studies of health literacy have relied primarily on quantitative measures using standardized tools and that such measures need to go further to capture all the components of the critical health literacy concept. She maintains that qualitative research approaches are needed to address the meaning of critical health literacy and the construction of meaning through interviews or observations. In addition, Chinn maintains that ‘research looking at the impact of critical media literacy education on health, where critical media literacy skills are defined as similar to what we might understand as critical health literacy skills’ (p. 62). It is this call that we are striving to address in our own work.

The use of critical media literacy in the health education curriculum is still rare. For example, in our own province of British Columbia, Canada, the Health and Career Education curriculum for grade 8 (in middle school) notes as a major outcome that students be able to ‘analyse influences on [health], including family, peers, and media’ (British Columbia Ministry of Education, 2005, p. 20) there are no suggestions for the implementation of this outcome in the classroom. Similarly, the health component of BC’s high school curriculum purports to ‘provide opportunities for students to think critically about health issues and decisions’ (British Columbia Ministry of Education, 2004, p. 3). Our experiences evaluating the curriculum found such opportunities were more about teaching students’ detailed reading to understand information, undoubtedly an important skill, rather than engaging them in critical considerations of power (Wharf Higgins & Begoray, 2012).

How can school programs be structured to allow students the opportunity to externalize their own tacit and explicitly held understanding of commercial media messages, to learn to deconstruct the semiotic systems used by media creators and then in turn examine the effects these have on their own health? Educational scholars assert that critical media literacy is more than critiquing media messages, and must shift to ‘a focus on production’ (Luke, 2000, p. 425 emphasis added), through
participatory and collective learning (Gainer, 2010), in order to empower students to disentangle often manipulative messages by creating their own representations (Kellner & Share, 2007). In this regard, Janks (2002) observes that advertisement deconstruction; that is, discussions about an advertisement’s features, a common classroom media literacy activity, often does not add to critical literacy development, but, ironically, simply reinforces the status quo. Students become more familiar with advertising messages rather than learning to become decision-makers and designers. Janks, like Kellner and Share, maintains that actual creation of visual representations by students is vital. Buckingham (2003) points out that:

the participatory potential of new technologies – and particularly of the internet – has made it much more possible for young people to undertake creative media production, and for teachers to do so with their students … enabling their voices to be heard. (p. 14)

Enhancing students’ CMHL as part of a health education curriculum has great potential for improving students’ access to, and analysis and interpretation of health information, maximizing the potential to foster healthy behaviours (Ashcraft, 2009, 2012; Gray et al., 2005; Wharf Higgins & Begoray, 2012). Because the premise of our work has been to influence students’ health literacy and health behaviours, and since marketers associated with commercial interests have increasingly targeted children and youth (Hoffman-Goetz, Donelle, & Ahmed, 2014), we have consciously emphasized the role of media advertising and promotion of unhealthy or risky behaviours and products in our research.

**Examples of our CMHL research**

While there is a good deal of theoretical content around CMHL including our own work (Begoray, Wharf Higgins, & MacDonald, 2009; Wharf Higgins & Begoray, 2012; Wharf Higgins, Begoray, & MacDonald, 2009; Wilmot et al., 2013), we wanted to see how these theories might be implemented as classroom activities with middle years’ students (ages 11–15). Our research team has been examining the impact of the media on adolescent health literacy since 2009, when the results of a previous school survey study (Begoray et al., 2009) revealed that the media was reported by adolescents as having a major impact on their health decisions. Our team has members from literacy education, health education and nursing, and we approach research questions on health literacy from an interdisciplinary stance. All our work is conducted in school classrooms. We are currently involved in qualitative phases of a mixed method study. Each of these phases actively involves classroom teachers in developing and delivering lessons, and takes several weeks.

To demonstrate our approach we provide below an overview of two recent investigations on how creating multimedia may influence students’ CMHL. It is beyond the scope of this article to discuss the methodology and findings in detail; rather, we include excerpts and highlights to illustrate how researchers and teachers can address CMHL in a collaborative partnership. Both research studies reported below used a case study approach (Yin, 2009), using observations and interviews; we worked closely with teachers in the classroom setting to strengthen the ecological (Green, 2008) and impact (Massey & Barreras, 2013) validity of our findings.
Both studies were reviewed and approved by our university’s Human Research Ethics Board. Each study incorporated CMHL concepts which arose from previous research:

1. The commercial media are intent on controlling the purchasing habits of adolescent consumers;
2. Advertisements often create false reflections of reality;
3. Advertisements attract adolescents using ‘hooks’ such as the use of celebrity endorsements;
4. The commercial media aggressively target adolescents; and
5. Advertisements project identities and values on adolescents.

In addition, we encouraged students to engage in critical questioning related to each concept such as: How is this message trying to get my attention? to enhance their critical analysis of the power of the commercial media.

Both studies had several approaches in common. They each included:

1. Modeled instruction of skills (e.g., about how to create a storyboard, how to use iMovie);
2. Mini lessons to gain background knowledge (e.g., on media literacy concepts using advertisements);
3. Guided group work (e.g., students co-create advertisements together);
4. Multimedia representations (e.g., the creation of paper puppets and posters);
5. Sharing of products with others (e.g., presentations, bulletin boards); and
6. Opportunities to critically discuss their work with researchers (e.g., interviews).

We provide below a brief specific description of each case study.

**Case Study I: using iMovies/puppets: creating visual images to facilitate CMHL**

This study was conducted in 2012 in a mid-sized city on the west coast of Canada. The study took place in a middle school where the research team had previously established a research relationship conducting two earlier projects on CMHL. The school served students in grades 6–8. The research activities occurred for eight consecutive weeks in a classroom used for the school’s Friday afternoon 2 hours of ‘exploratory’ time which was devoted to a variety of extra-curricular activities. With the assistance of the teacher, twenty-seven students, aged 12–14 ($M = 18; F = 9$), were chosen as a convenience sample. Twenty five were Caucasian and two were Aboriginal.

The study featured the creation of a two-minute multimedia public service announcement that also served to help participants critically evaluate gendered health messages. We asked ‘What gender stereotypes and inequities do young adolescents comprehend in the media; how do they depict this understanding visually in a representation (using puppets in an iMovie)?’ Participants created the advertisements in one of eight gender specific groups including five groups of boys and three groups of girls; each group had either three or four members and
represented a cross section of participants by grade. Participants were invited to choose one of three topics designated by the school administration: leadership, team sports, or nutrition. As part of their advertisements, participants also created stick puppets to represent themselves (see Figure 1). Activities were observed. Puppets and the completed advertisements were also collected as data.

After creating their advertisements, students participated in a 20-minute individual interview and 20-minute focus group interview. Ten girls and 12 boys participated in individual interviews. These focused on participants’ perceptions of how the media and gender informed the puppets’ characters (in dress and behaviour, for example) and their advertisement storyline. We were interested in participants’ perceptions of differences among the puppets and how gender and the media may have informed these differences.

Following completion of the individual interviews, we conducted seven focus group interviews with participants. Three groups of girls (n = 5, 3, and 2) and four groups of boys (n = 4, 3, 3, and 2) participated. In keeping with Rogow’s (2011) assertion that media literacy education involves ‘teaching students to ask – and find answers to important questions’ (p. 17), focus group participants were asked to consider questions introduced above such as how advertiser marketing strategies shape gender stereotypes. One exchange demonstrates their thinking:

Interviewer: How are you seeing the way advertisers are presenting men and women, girls and boys, teens?

Figure 1. Boy’s stick puppet.
Female Participant # 5: It’s not mentally healthy at all.

Female Participant # 4: It really gets your mind focused on really the stereotypes again, because like boys can do this, but girls can’t. It’s the stereotypes again and again, and you see it so much that it’s imprinted in your head.

Verbal debriefing took place during students’ production processes and during interviews. Adolescents were able to share insights about the influence of advertisements on gender stereotypes and young peoples’ health. For example, during an individual interview, a male participant said:

I guess some people could take GI Joes the wrong way or Barbies the wrong way … they sort of make girls go like (high pitched voice), ‘I want to be like Barbie when I grow up.’ And then not feeling good about their body. ‘I’m going to go get implants.’ That’s, I guess, that’s how the implant companies make money.

Discussion by researchers with students provided a powerful part of the learning process. As they talked, students begin to contextualize the marketing and create a greater probability that the students would recognize the relevance of the issues to their own lives (Lee & Kotler, 2011), and began empowering students to become aware of marketers’ ulterior motivations. In keeping with tenets of both media and critical health literacy, situating students not only as consumers, but as knowledge producers. They might shed the passive, bystander role instead adopting a more active stance and learning to ‘belong to a community from which meaning is generated’ (Lacasa, García-Pernía, & Núñez, 2014, p. 105). These exploratory classes offered exactly the right venue within which to conduct this research and foster this learning.

Case Study II: creating graphic novels to enhance CMHL

We next decided to extend our CMHL research to focus on Aboriginal adolescents (Wilmot et al., 2013). This study was conducted in 2013 in a small city located in the interior of British Columbia in a school district where one member of our team had extensive teaching experience. The school district had an infrastructure that supported Aboriginal students throughout the K-12 system. Six Aboriginal adolescents (N = 2 M; N = 4 F) aged 13–15 were chosen as a convenience sample by the school district Aboriginal principal as participants. The research activities took place in a school district activity center during school hours, three hours a day for five consecutive mornings.

This study featured participants’ creation of a story and storyboards (that is, planning sketches for each panel) for a graphic novel to help them examine the effects that popular media can have on adolescents’ health. A graphic novel is a book-length, fiction or nonfiction story produced in the style of a comic book (Danzak, 2011). The goal of participants’ graphic novel (provided by researchers) was to provide a culturally sensitive tool to be used with students younger than themselves, aged 11 and 12, both Aboriginal and non-Aboriginal, attending school in the same school district. We asked: How does writing and planning a graphic novel reveal Aboriginal adolescents’ depiction of CMHL concepts?

The research team first introduced CMHL key concepts to participants in a one-hour interactive lesson. In addition to introducing the CMHL concepts, an Aboriginal
teacher and an Aboriginal support worker provided a cultural context for students’ graphic novel through retellings of local traditional stories and names. Their daily presence also helped ensure that cultural markers important in their community were represented in the visuals and storyline, allowing the potential Aboriginal readers to encounter CMHL concepts in culturally familiar settings and non-Aboriginal readers to learn about this culture. For example, one session resulted in use of character names in the novel; Skèlèp is the Shuswap (local First Nation band) word for Coyote (the manipulative ad executive and villain of the story) and Skeki (the male character’s name) means spider. This information helped participants contextualize the issues they identified for their novel within local Aboriginal values, beliefs and practices.

After creating their graphic novel (see Figure 2), all six students participated in a 20-minute individual interview. We were interested in participants’ perceptions of how the media influences their health choices. This idea of contrasting values is illustrated from an individual interview with a female participant about the group’s graphic novel:

Well with the ad values and our values they’re completely different because our values focus on um like family and stuff and what we want to do and the ad, the ad values just stuff to make money and how they can just get people to buy their stuff cause all they want is money and what we want is like freedom.

We found that Aboriginal students’ ability to learn was tied to how harmoniously their cultural identities aligned with the pedagogical practices used in our learning environment (Pirbhai-Illich, 2010). The presence of adults from their Aboriginal community and use of a collaborative environment helped students create a novel that had personal and collective meaning.

**Conclusions**

In keeping with the participatory and empowering ideals of CMHL, Manganello (2008) comments in her call for more research into adolescent health literacy that ‘health literacy skills (which include media literacy and critical thinking) are necessary for adolescents to be able to access health information from mass media, understand the content and evaluate the credibility of the information they obtain’ (p. 847). There were similar findings in these two case studies, which help to answer Manganello’s call. Both engaged students in participatory learning and empowered students through their construction of personal and collective meaning in the production of their creations. Also, both invited participants to think about issues from multiple perspectives to encourage a questioning habit of mind.

In her work on critical sex education, Ashcraft (2012) maintains that ‘[c]onversations about media messages and how they are produced and reproduced can be a powerful resource for developing young adolescents’ critical analysis about a variety of content’ (p. 601). Encouraging critical thinking is, however, challenging. In a study with grade-6 students by Scharrer and Raring (2012) which asked young adolescent participants for written responses, many students showed no sign of any ability to critique media. We found that even in oral interviews where researchers could probe for responses, some students were not able to demonstrate critical thinking:
Interviewer: When you watch commercials what do you do? How are you affected by the way they present them?

Participant: Well, if it makes it look like a really good thing or a really cool thing … then it makes me want it. Of course, but um, and if it’s useful.
Interviewer: Ok. How would you weigh whether or not you actually wanted to go out and buy it or not?

Participant: Well again if it’s something related to what I’m interested in, or if it’s something that really looks pretty cool then I will want to go out and buy it.

As Pirbhai-Illich (2010) comments on working with Aboriginal and non-Aboriginal students, ‘critical consciousness-raising and identity work with students take time, and critical literacy projects may require several repetitions before they become meaningful for students’ (p. 262).

Limitations

As with every research project, there were limitations in our studies. First is the social desirability effect; that students may have said in the interviews what they thought researchers wanted to hear. Informed by our earlier work (Begoray et al., 2009), we purposely chose not to measure student CMHL quantitatively: there is no standardized instrument in the literature, and we found students’ learnings were not well captured through the use of the pre- and post-test relative to the other assessment tools. It may be that the format of these tests does not reflect typical test formats for school health education for middle years’ students (e.g., teachers told us they typically use more multiple choice questions and set aside time to purposefully study for a test). We found qualitative assessments helped to capture more in-depth and impactful data with this age group, and thus refrained from using quantitative measures. Notwithstanding this decision, we acknowledge that our findings are limited by the qualitative nature of data collection and interpretation.

Final words

Our concept of CMHL as implemented in the studies described above helps to show how students are able to understand and evaluate commercial media messages. We have taken our work one step further by adding approaches that call for students to also become creators of multimodal texts.

CMHL cannot be relegated to one subject or grade level; rather it is fostered throughout the cognitive developmental span and as health and media contexts and circumstances change, must continue to evolve throughout life. Indeed, the impact of media literacy interventions is strengthened when reinforced over time during multiple sessions (Jeong, Cho, & Hwang, 2012), scaffolding concepts and strategies into ongoing curricula (Diamond, Saintonge, August, & Azrack, 2011). Further, learning opportunities beyond the classroom, involving families and the broader community, can address the multiple factors at the intrapersonal, interpersonal, and community levels influencing CMHL (Wharf Higgins, Begoray, & MacDonald, 2009). The professional literature indicates that when students are given opportunities to create multimedia texts, they are likely to make gains in self-confidence, self-esteem, and a sense of community belonging through positive feedback (Cummins, Brown, & Sayers, 2007 as cited in Hughes, King, Perkins, & Fuke, 2011, p. 602). In our future work, we want to delve further into these possible gains as methods of resilience for adolescents.
Finally, while teachers need to have the skills to embrace their students’ multimedia lives in the health education classroom, these skills need to grow as the commercial media continues to seek new ways to influence adolescents. For instance, navigating transmedia (i.e. telling a narrative across several media platforms) is an important addition to the curricula (Siegel, 2012). As students are swarmed with this approach from marketers, including the ‘gameification’ of entertainment experiences and information sources alike (Teske & Horstman, 2012), teachers too need to become fluent in following storylines embedded across diverse media modes in order that they grasp their ‘relationship to knowledge, information, and society’ (Jacobs, 2012, p. 100).

We look forward to continuing research on the ever changing landscape of CMHL education for adolescents.

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