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Tweens' characterization of digital technologies

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ABSTRACT

The tweens are a transitional age group undergoing deep physical and psychological transformations. Based on a thirteen-focus group research design involving 103 students, and applying a tweens-centered approach, the characteristics of SMS, IM, Internet, digital photos, electronic games, and email were analyzed. Categories such as moral issues, psychological and social consequences, problems/drawbacks, general benefits, and technical attributes synthesized the main characteristics attached to each form of digital technology. Their relative relevance was not gender dependent. Furthermore, tweens exhibited both metacognitive knowledge and personal epistemological observations associated with most of the digital technologies.

1. Introduction

How do tweens characterize the different digital technologies? Instead of imposing a pre-defined list of activities and attributes from which they could select by using a binary option (Andersen, Tufte, Rasmussen, & Chan, 2007), we proposed and encouraged them to openly express anything relevant associated with several digital technologies.

Our research goal was to capture their knowledge, the meanings that tweens associate with short message service (SMS), Internet Messaging (IM), emails, digital photos, electronic games, and Internet. Parents and educators have been expressing either their concerns or their optimism over how children use the Internet and the risks they run to themselves (e.g. McPherson, 2008; Willard, 2007). We aimed to assess the extent to which children are aware of those potential drawbacks as well as what kind of information and beliefs they hold concerning all those digital technologies. There is evidence about children's familiarity with the Internet (e.g. EU Kids Online, 2007; Livingstone & Bovill, 2001; Pew reports in USA). Therefore, before making any effort to assist and educate children we should understand what they think, feel and expect about 'new' media.

Knowledge plays an instrumental role: it helps to solve problems and to guide decisions. Knowledge representation and organization precedes knowledge use (e.g. Eysenck & Keane, 2005). The former format includes the propositional representation which allows for the internal mapping and storage of the meaning of the ideational and symbolic content of each specific entity comprising attributes, actions class membership, spatial positions, and concepts (Pylyshyn, 1984). Knowledge organization conveys cognitive economy, informative richness, and logical coherence of the stored knowledge acquired through experience (Collins & Quillian, 1969). Such a process requires a hierarchical judgment and classification of whether a concept or object is a member of a specific category or not (e.g. Braisby, 2005; Ross & Murphy, 1999). In this research we focus on the nature and content of knowledge rather than on the categorization process leading to semantic classification and mental lexicon building.

In the following sections of this paper we look firstly at the cognitive and social development abilities of children, especially the role of digital technologies on their socialization and identity formation. The fears and optimism deployed by media and captured by researchers are also discussed. The specificity of researching with children as well as the research design and data collection techniques will be described before the presentation of results.

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2. Theoretical background

2.1. Children's/teens' cognitive development and digital technology use

'Tween' is more a social and cultural categorization than simply a chronological stage. The latter evidence places that age cohort "in-between" childhood and teen-hood. It is an age characterized by socio-psychological ambiguities, especially among girls, regarding maturity, both mental and physical (Cook & Kaiser, 2004; Walkerdine, 2007). Operationally, tweens can be defined as an eleven/twelve year old group, which is a transitional age. While they still display some children's characteristics (parental emotional dependence and early puberty psycho-physiological development), at the same time their social and cognitive evolution overlaps that of their older teenage friends (Berger, 2011). No longer is the individual a child but s/he is not yet an adolescent either. A child's body begins to undergo important physiological transformations. Neurological maturation, involving myelination of neural axons, dendrite and pre-frontal cortex development (Benes, 2001), is translated into significant improvements in working and long-term memory both qualitatively and quantitatively (Gathercole, Pickering, Ambridge, & Wearing, 2004; Kagan & Herschkowitz, 2005). Parallel to such capacity enhancement, the cognitive efficiency expressed in terms of processing speed and more complex linguistic skills becomes gradually more evident (Demetriou, Christou, Spanoudis, & Platsidou, 2002). In addition to improvements in memory, selective attention and information processing, tweens engage in a higher form of thinking called metacognition (Ferrari & Sternberg, 1998). Such a process addresses both their capacity and accuracy (Dunlosky, Serra, & Baker, 2007). Although at this stage their range of vocabulary becomes more extensive and its use more articulated, several individual factors affect calibration of the metacognition process (Berger, 2011; Pintrich & Zusho, 2002). Tweens' knowledge base builds up a specific culture. That culture is set apart from adult culture and encompasses rules, rituals, language, and codes of behavior (Stewart & Bond, 2002). It is expressed by their clothes, music, and games preferences. Nevertheless, tweens' knowledge is updated, deepened and challenged within a peer-to-peer relationship. Children's social awareness and cognition evolves along with their social experience. Their partners teach, influence, negotiate, and share with each other. Moreover, they learn to cope with such rules not only because of the need to be accepted, but because they can also enforce them. In that socialization process, friends are particularly helpful in enhancing social skills and improving emotional regulation (Haselager, Cillessen, Van Lieshout, Riksen-Walraven, & Willard, 2002).

Conceptually, tweens' age span is narrow, encompassing 11–12 year olds, this age group being defined as a group undergoing meaningful behavioral and psychological transformations belonging to neither children, nor teens (Siegel, Yancey, Aneshensel, & Sculer, 1999). Since the sixties, the tweens specificity has been taken seriously by clothing retailers wishing to target a segment, not yet autonomous but willing to affirm their uniqueness (Cook & Kaiser, 2004; Martens, Southerton, & Scott, 2004). Lindstrom (2004), Lindstrom and Seybold (2004), and Siegel et al. (1999) sustain tweens as a global and quite homogeneous segment. Although relevant to this market segment, there are very few intercultural studies of tweens, and at least two of those that have been undertaken contradict the existence of such worldwide unity among tweens' behavior (Andersen et al., 2007; Dibley & Baker, 2001). With regard to the new media consumption, Andersen et al. (2007) found a similar household ownership profile of new media devices among Danish and Hong Kong tweens, but with a principal difference in the intensity and purposes of Internet and mobile phone use. Whereas Asians place a greater emphasis on academic activities, Europeans focus on entertainment and social networking. However, regardless of cultural specificity, the economic development status of those countries places a high proportion of children and teenagers in the position where they can regularly use several digital technologies (e.g.: EU Kids Online, 2007; Pew Internet American Life Project).

2.2. Social and media discourses on children-digital technologies interaction

Fears, anxieties and moral panics involving the dangers and risks of Internet use by children have been nourishing popular literature, whose concerns are subsequently multiplied and voiced by the media. To illustrate, Willard (2007) detailed most of those concerns: pornography and sexual predators, self-produced sexually-explicit child and teen material, hook-ups, sexual harassment, cyberdating, cyber bullying, unsafe online communities, hate groups and gangs, gaming, sexting, gambling, hacking tribes, plagiarism, copyright infringement, spam, scams, privacy, e-commerce abuses, and advertising directed at children. The emergence of a new technology always occasions such panic. A similar phenomenon occurred with telegraph and telephone in connection with their alleged danger to innocent or careless users. Most vulnerable targets have been girls, who are more likely to fall victim to several unfortunate threats (Cassel & Cramer, 2008).

Such pessimist outlooks on the digital media phenomenon tend to appear more often than optimistic perspectives. On the plus side, however, it can be observed that the incremental development of digital media represents an innate and natural process, and that the current net generation is participative in using and shaping that new media rather than simply being exposed to it and subsequently falling under its negative influence. And as noted by several researchers (e.g. Prensky, 2004; Rosen, 2007; Tapscott, 1998), it brings user advantages of autonomy, creativity, innovation, the power and freedom to interact globally, to develop their skills, an awareness of the risks and benefits of the medium, and the ability to engage in permanent multi-tasking involving several digital tools. Those features characterize a unique generation who share the evidence of growing up under the overwhelming influence of digital technology. Buckingham (2008, p.14) criticized such an attempt to romanticize young people as overstating their "critical intelligence and social responsibility" and ignoring digital inequalities.

Whether positive or negative, the views mentioned above reflect the adult construction of the digital youth concept. Therefore, we may assume a "discrepancy between adult perspectives on new media and youth experiences" (Herring, 2008:72). The focus of our research goes beyond adults' evaluations and prescriptions constrained by their own logic as educators, and considers tweens' own assessment of the digital media tools, thereby producing an unfiltered, and hence genuine, perspective.

In order to review some of the scientific contributions to the discussions on children/tweens and digital technology interaction, the following schema depicts some of the inter-relations among the actors and the factors involving digital technology influence (Fig. 1).

(1–2) Digital technologies comprise several digital tools, most of a communicational nature. Face-to-face is just one alternative along with mobile or landline phone and online communication. The contextual framework behind the communication process guides the choice of channel (Mesch, 2009). The characteristics of the medium or channel do not provide the complete explanation for users' choices. Specifically, the relationship duration, origin and distance as well as the communication content form the contextual framework. Similarly,