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What Next? Toddler Netizens, Playstation Thumb, Techno-literacies

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ABSTRACT This article considers how traditional mass media and new information technologies change our thinking about childhood, and the very experience of childhood. It asks questions such as: How does the merchandise of the marketplace, the media and new technologies construct and segment childhood? What should early childhood educators and parents consider in the selection of instructional or entertainment CDs or websites? Four major issues are raised in relation to the 'information revolution' and early childhood: concepts of development; media and information technology literacy; critical criteria for software selection; issues of equity and access.

Today more than ever before, concepts and experiences of childhood are in constant transition. Historically, childhood as a concept and identity marker has evolved slowly, often taking centuries to become institutionalised in systems of schooling, and to sediment in the public imaginary. For example, social historian Aries (1962) has talked about the shift from the child as 'miniature adult' prior to the sixteenth century, to a reconceptualisation in the seventeenth century marked by developmental stages in 7-year increments. By the late twentieth century, Freud gave us a more finely segmented concept of childhood within a larger psycho-sexual developmental framework. The urge to rationalise and fix development in identifiable and innate stages is best exemplified in this century by Piaget's cognitive, Kohlberg's moral, and Chomsky's language development narratives. But these, as previous development stories, were generated in particular social and cultural contexts, based on specific (European) concepts of the human subject. Yet they all derived from a shared culture of the book and print literacy (Luke, 1989).

What differentiates the last stretch of this century from previous eras, is the rapid shift in constructs of childhood that we have witnessed since the advent of communication technologies, particularly microchip technology. It seems that every time a new information technology (IT) becomes widely available on the marketplace, new ideologies and cultural practices re-construct versions of childhood, and concomitant concerns over 'effects' emerge. Plato, for instance, worried that alphabetic print would make people cognitively lazy. The advent of the book generated the same fears: reading would replace rote memorisation, atrophying the cognitive faculties of memory. Let me backtrack through this century for a moment.

At the start of this century much concern was raised by social commentators, parents, and educators over the potentially harmful effects of the 'moving pictures'. Children sitting side by side in dark theatres 'looking' at a story would mean the end of sociability, creative play and social interaction, the demise of family and community as principal sources of a society's story-telling function. By the 1920s, the first 'movie appreciation' courses appeared in schools to respond to the child as movie consumer. Some 50 years later, the advent of TV created a similar storm of protest and concern, only this time the electronic story-book had moved into people's homes. Concern was raised about the effects on children of adult programming, violent crime and 'cowboys and indians' shows, and the fact that an entire nation would see and hear the same messages but in the isolation of the family suburban bungalow. Again, TV was charged with eroding a sense of community life, inhibiting children's play and creativity, language and reading development, and 'healthy social relations'. By the early 1960s, the TV-viewing child had become an object of intense academic scrutiny, not to mention a massive marketing and advertising machinery targeted at the young, and by 1964 Sesame Street aired its first early literacy program (Luke, 1990). When the first arcade and home computer games became available in the early 1980s, parents and educators complained about kids' addiction to and the violent nature of the games arguing that machine *vs.* player relationships were eliminating more socially constructive relations among youth. 'Vid-kids' were said to be suffering symptoms ranging from joystick arthritis, to sleeplessness, enhanced aggression, and drops in academic achievement. However, the video game eventually became the conceptual platform on which subsequent educational CDs would be based. In relatively quick succession, the 1940 radio generation was replaced by the 1950s rock'n'roll and TV generation which, in turn, was replaced in the 1960s and 1970s by the first generation raised on 'Sesame Street', and by the 1980s, we saw the emergence of the MTV generation. By the end of the decade a new group had emerged: the Nintendo generation which grew up with MTV, computer games, VCRs and gameboy. By the mid-1990s we had become familiar with various Generation-X versions of youth: jaded media junkies, techno-pop groupies, and above all computer savvy cybernauts. From infancy, that generation had grown up with electronic toys and games, post-MTV media fare and VCRs,

home computers and playstations (now said to be responsible for 'playstation thumb' syndrome).

Concepts of youth and childhood no longer take 50 or a 100 years to develop and become part of the social vocabulary. Rather, they increasingly emerge in tandem with technological innovations, particularly in relation to media and communications technologies. If we look through any of the wide range of computer or Internet magazines targeted at families on news-stands today, we immediately see a new construct of family and a new construct of the child: the family as the enabling communications and entertainment hub, and the child as the techno-literate netizens of the new millennium. In countless TV and magazine advertisements, a new technology literate family and child has emerged. A massive software industry has sprung up to cater to the childhood and youth market. But the promotional machinery targets the family with exhortations that is up to parents to provide the most enabling, supportive and conducive environment for the early literacy learning needs of the young. The hidden message here is that schools cannot be relied upon to provide the computer skills and knowledge that will be requisite of all workers in the near future. In fact, a recent Australian Bureau of Statistics release on national computer use suggests that 4 out 5 jobs that children in schools today will inherit upon graduation, have not yet been created. In short: we are reminded that as parents and educators we cannot do enough to prepare the very young for an uncertain job future. What is certain is that the future will be reliant upon and embedded in as yet unheard of technologies.

Given the profound influence of the marketplace, and media and communications technologies to shape the experiences and concepts of childhood and youth (Kline, 1993) – not to mention the experiences and visions of ideal parenthood associated with managing childrearing in the context of an information and consumer society (Luke, 1994) – a number of crucial issues present themselves. I will raise four issues here.

First, children's cognitive, behavioural, and emotional development can no longer be assumed to fit unproblematically into traditional lock-step developmental stages. Today, children's early literacy and play experiences are shaped increasingly by electronic media. Educational or entertainment software requires youngsters to make complex information choices and decisions. Hypertext environments create experiences where they have to think before they act, learn to take risks by clicking on a button, or backtrack to a previous choice and so forth. CD-ROM and website environments confront kids with a range of interconnected information modalities: print, animated and photographic pictures, symbols, sound, numbers and letters, movable graphics, or movie and video clips. Children process these multi-modal information sources simultaneously in the process of moving through multimedia text. What this suggests is many more parallel cognitive demands rather than the serial linear processing required of print (Grabe & Grabe, 1998). Some of the more sophisticated software available for young children today is highly interactive and challenges users to problem-solve and construct solutions, decisions, or choices based on multi-levelled

information. Navigating the web-like structures of multi-embedded and laterally connected information of hypertext requires a much more constructivist information processing mode. It requires abilities to abstract, to evaluate and hold in memory a range of information choices before one clicks on a course of action. Hypertext environments demand 'reading' skills in diverse and laterally connected symbol systems which encourage the very critical and lateral thinking skills many educators have been promoting for the past decade. Youngsters raised on the current crop of educational and/or arcade type of games, many of which are marketed to the preschool crowd beginning at age 2 or 3, come to school well versed with a very different set of 'literacy' skills from even a decade ago. In that regard, it behoves early childhood educators to reevaluate their own developmental and literacy expectations of children. Importantly, it requires a change in attitude: new electronically mediated 'reading' and 'writing' skills are different in kind – not qualitatively inferior or 'less' than traditional print literacy skills (Luke, 1997).

Second, the tremendous choice, the glitzy packaging and advertising of educational and entertainment software available for the under-6 crowd, can obscure some fundamental 'quality' issues for parents and early childhood educators. What kinds of criteria should be in place to inform software purchase decisions? A close look at the most popular software (e.g. *Sammy's Science House*, *PB Bear's Birthday Party*) quickly reveals that gender stereotypes are back in business. For instance, The Learning Company's blockbuster CD, *Interactive Reading Journey*, reproduces the same old tired narratives of 1970s phonics instruction couched in predictable gender typecasting. Further, few games are culturally inclusive and recreate a virtual world that is inhabited by white Anglo-Celtic characters, be they people or animals. Finally, we need to ask to what extent these games are interactive and intellectually challenging, or merely stimulus/response clicks to repetitive yes/no options? We teach primary and secondary teachers critical software evauation skills, but are we paying enough attention to what may appear as less disciplinary knowledge content in the preschool and early childhood software? Are we teaching preschool and early childhood teachers those skills? Are we passing that knowledge on to parents? Critical IT skills are as important as the more fundamental 'how-to' skills of software navigation or net surfing.

Third, as traditional entertainment media (e.g. TV, movies) begin to converge with CD-ROM and Internet technologies (e.g. net TV; 'Wiggles', 'Bananas in Pyjamas', or 'Sesame Street' websites), we might need to reconsider how traditional critical media studies might be expanded to incorporate the new technologies. Media literacy has made significant strides into the primary and preschool classroom in the last decade, and yet as media change, so must our approach to teaching the 'basics' of critical media analysis. As more children each year access the latest Disney versions of children's classic narratives on the web or on CDs, the importance of applying critical media analytic skills to issues of representation should not be underestimated. Whether applied to *The Lion King*, *The Three Bears*, or

Sleeping Beauty, basic preschool and primary 'analysis' of language, visual representation, plot, setting or character features remain important aspects of a critical literacy program. In short, preschool and primary media must now be expanded to investigations of how the mythical worlds of fairy and folktales are constructed in other media forms.

Fourth, the issue of access remains crucial for all levels of schooling. As with any new technological innovation, children from affluent socio-economic backgrounds usually have greater access to the best of the new technologies. While working class parents might struggle financially to purchase an entry level computer, more privileged families can afford higher-end technologies and monthly Internet access fees. One child has a scanner and digital camera at home, the other child has neither nor computer. These are common stories across Australian classrooms. Education Departments and IT experts tell us that the internet will democratise information, that anyone anywhere can access any information any time. However, what most ignore is that not all families are equally situated to have equal access to the information superhighway. Some clearly have a significant headstart. In that regard, it becomes all the more important that all levels of schooling provide all children with access, appropriate resources and skills that will be absolutely crucial for meaningful workplace participation in the decades ahead. Learning both the operational, 'how-to' IT skills as well as the more analytic skills of understanding the role of IT in society, in social relations, and in cultural change, cannot be left to one-off computer education courses in high school. A critical IT education has to begin at the very beginning so to speak. Indeed, electronic culture is already an integral part of early childhood experience for most youngsters.

As we are all being pushed onto the on-ramps of the information superhighway, I think it is crucial for educators at all levels of schooling to take charge of reshaping curriculum and pedagogy in relation to IT. If we don't, corporate software developers will maintain their control over content design that invariably shapes how and what we teach. We cannot deny the tremendous potential of IT, nor can we ignore the politics of unequal access, issues of violence, cultural or gender stereotyping. We cannot afford stubborn resistance or gleeful 'ghee-whiz' acceptance. The electronic present and future requires critical and informed debate and implementation. We ought to be able to rely on educators – themselves information specialists – to lead the way in providing balanced perspectives on a range of IT mediated learning and socialisation issues that, in fact, begin in infancy.

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