

The Changing Life World of the Adolescent: A Focus on Technological Advances

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ABSTRACT The society in which adolescents live is constantly changing, demanding that adolescents cope not only with their own developmental changes but also with the challenges of technological advances. Limited research has been carried out on the changing life world of the adolescent in South Africa. In the research on which this paper is based, particular emphasis was on the current adolescents, who are also known as the Millennial Generation or Generation Y. Most of today's learners and students are from this generation. The general aim of the research was to investigate the changing life world of the adolescent, focussing on technological advances. By way of a literature study this paper describes how technological advances change and influence the life world of the adolescent. The research highlighted the role of parents and teachers in their attempts to support adolescents in coping with the demands and challenges presented by technological advances. The recommendations arising from the research suggest how parents and teachers can support adolescents in coping with educational advances. Recommendations are also made for future research.

INTRODUCTION

If we teach today's students as we taught yesterday's, we rob them of tomorrow – John Dewey (1859-1952).

The 21st century has brought with it a different revolution: the adolescents of today are on the cutting edge of technological proficiency. Scientific knowledge, technological developments and the electronic and data-driven world are expanding at a mind-boggling rate. For example, search engines such as Google, can search 3.5 billion searches per day (Google 2014). The social landscape of the adolescent has changed completely; adolescents of today constitute a generation of people who know more about technology than their parents, grandparents and, in most cases, their teachers and lecturers. Computers, internet and mobile phones are an integral part of their lives.

The famous words of John Dewey (1859-1952) in the introductory quote are still true in the 21st century. However, many teachers continue to prepare adolescents for a world which has long since disappeared. Teaching methods are still employed that are irrelevant to the knowledge and skills needed by adolescents to cope in this changing world (Dryden and Vos 2010; Gouws 2015). Such teachers have failed to move with the times and tend to ignore factors such as technological advances and the role thereof in people's lives. Most parents are not half as conversant with electronic media as their ado-

lescent children are (Roberts 2011), and research points out that 40% of parents learn how to use technology from their children (Correa 2013).

The influence of technological advances in the lives of adolescents cannot be underestimated or ignored, and parents and teachers need to know the social landscape in which their children are moving. In other words, they need to know about technology and how to teach adolescents to use technology responsibly and safely and how to express themselves appropriately.

As pointed out in the previous paragraph, it has become increasingly important in the South African context to research the changing life world of the adolescent, focussing on the influence of technological advances on their life world. A literature review was therefore undertaken to explore the changing life world of the adolescent. The questions underlying this review are: how do technological advances contribute to the changing life world of the adolescent and how can parents and teachers support adolescents in coping with the demands and challenges posed by technological advances?

The paper ends with the most significant conclusions and recommendations stemming from the literature review.

Conceptualisation

To establish common ground for the rest of the paper the concepts 'adolescent' and 'educational advances' are clarified.

Adolescent

The term 'adolescence' is derived from the Latin verb *adolescere*, meaning 'to grow up' or 'to grow to adulthood', thus referring to a development phase in the human life cycle that is situated between childhood and adulthood. Although it is difficult to define the adolescent phase in terms of chronological age, the United Nations (WHO 2014) regards adolescents as young people between 10 and 19 years of age. In South African terms, this phase would include learners from approximately Grade 4 to more or less second year university level. For the purpose of this paper the term 'adolescent' refers to those learners who are involved with technology.

The society in which adolescents live are constantly changing, demanding that adolescents cope not only with their own development but also with the challenges of technological advances.

The society in which adolescents grow up also has an important influence on their development, relationships, adjustments and problems (Rice and Dolgin 2008:4). The expectations of their society mould adolescents' personalities influence their roles and guide their futures. Bronfenbrenner's Ecological Systems Theory (1979) explains how the family is the first system, to which a child belongs, and thereafter the school and the community. The role of technological advances is influenced by the quality of the environment at each of the multiple levels, namely the microsystem (social networks of family, friends, teachers and peers) mesosystem (school management and teaching processes that determine the school culture), exosystem (broader community) and macrosystem (policies and laws).

Technological Advances

For the purpose of this paper the term 'technological advances' is used to refer to digital technology, including the internet, mobile phones, iPads, iPods and gaming devices.

A world without computers, the internet, mobile phones and smartphones is unthinkable in the life of an adolescent. Growing up in the age of technology has put a computer or mobile phone in the hands of almost every adolescent. Armed with BlackBerrys, iPads, iPods, laptops, mobile phones and other gadgets, adolescents

are 'plugged in' 24 hours a day, 7 days a week. Words like Wikis, blogs, YouTube, Facebook and Twitter now form part of the adolescent's local vocabulary. Adolescents are almost exclusively socialising and communicating through mobile phones and the internet. The impact of Blackberry's 'Instant messaging' and Android Market's 'WhatsApp' can be seen on school grounds where adolescents are constantly typing on their mobile phones. The image of adolescents with their mobile phones glued to their fingertips, texting, listening to music, playing games or watching a video has become almost iconic (Rideout et al. 2010; Bergin and Bergin 2014). According to the UNICEF Annual Report (2013), South Africa has the highest mobile penetration on the continent, with over 93% of the population owning or using a mobile phone and WhatsApp and Mixit is currently the fastest growing instant messaging service among South Africans, with a user base of 4.6 million users (World Wide Worx 2012; UNICEF 2013). The mobile phone has moved from being a mere 'technological object' to a key 'social object' (Srivastava 2005; UNICEF 2013; Gouws 2015).

Adolescents are almost exclusively socialising and communicating through mobile phones and the internet. At least six million South Africans are mobile internet users while 39% of urban and 27% of rural phone users aged 16 and older are accessing the internet from their mobile phones (UNICEF 2011). The use of particularly social networking sites, have provided adolescents with alternative ways of establishing relationships (UNICEF 2013; Van Wyk 2014; Bergin and Bergin 2014).

Any website that allows social interaction is considered to be a social media site. This includes social networking sites such as Facebook, Myspace, and Twitter; gaming sites and virtual worlds such as the Sims; video sites such as YouTube; and blogs. Facebook, Myspace and video sites such as YouTube are some of the internet sites that adolescents in South Africa frequently use (Mathews 2012). As a social networking utility, Facebook is the most popular way in which adolescents communicate and it allows interaction to take place on a virtual platform. An increasing number of adolescents are thus able to network and share ideas, thoughts and opportunities; they are able to meet friends, and hold lengthy discussions with them. One of the major advances of technology for adoles-

cents is that it allows them to accomplish online many of the tasks that are important to them offline, such as staying connected with friends and family, making new friends, sharing pictures and exchanging ideas. However, research has found that face-to-face communication remains an important mode of communication for adolescents (Palfrey et al. 2010; Gouws 2015).

The challenge for young people is to use Facebook in a way that benefits them rather than allowing it to consume precious time (Randeree 2008; Papalia and Feldman 2012). The most common reason why adolescents use the Web is to communicate with others (via text messages, e-mails, and chat rooms), to visit entertainment sites and to play video games and retrieve information. Search engines such as Google, Aardvark or Yahoo are popular for retrieving information. For example, adolescents access online information about their health concerns, such as sexually transmitted infections, stress and contraceptive use in their own time and space. The internet also gives adolescents the opportunity to put their identity to the test by presenting themselves in any way they wish. Research has shown that adolescent girls spend more time on social networking sites, listening to music and searching the Web while adolescent boys spend more time on playing video games, computer games and video websites such as YouTube (Papalia and Feldman 2012; Rideout et al. 2010). Technological advances have also changed the characteristics of the 21st century adolescent.

OBSERVATIONS AND DISCUSSION

The Characteristics of the 21st Century Adolescent

The 21st century adolescent is also referred to as belonging to the Millennial Generation or Generation Y. In their seminal book, *Millennials Rising 2000*, Strauss and Howe (2000) refer to members of Generation Y as those born between 1980 and 2000. In the South African context, Codrington and Grant-Marshall (2004) suggest that this generation was born after 1990. If one defines adolescence in terms of chronological age, as was pointed out earlier, one can refer to the current South African adolescent as belonging to Generation Y.

There are two major characteristics of the millennial group: they are extremely independent

because of their experiences of divorce, day care, being raised by single parents, and the technological revolution in which they are growing up; and they feel empowered (Roberts 2011; IEAB 2010).

The literature (Roberts 2011; IEAB 2010; Strauss and Howe 2000; Burger 2014) points out that the millennial group are one of the most educated generations and they generally share the following characteristics: This is the first generation where children know more about technology than their parents and teachers, and where children teach their parents how to use the different devices. This generation is being raised in the age of the 'active parent' and especially fathers are more involved. These involved parents view the child as the centre of the family. Unlike Generation X that came before them, these children are not left to make key decisions on their own. Parents are involved in the daily lives and decisions of Generation Y; these parents have been referred to as 'helicopter parents'. The secure feeling attained as a result of strong parental involvement makes the members of Generation Y believe they can accomplish almost anything, and if they do not, they can always go back home and get help and support. Because members of Generation Y have generally participated in team sports, play groups and other group activities (for example group work in the outcomes-based classroom), they value teamwork and seek the input and affirmation of others. Being part of a 'no-person-left-behind' generation in South Africa, Generation Y is commonly loyal, committed and wants to be included and involved in all activities. By sharing what they learn with others actually helps them create their own personal identities.

Generation Y have high expectations of their teachers, lecturers and employers. They often seek out new challenges and are not afraid to question authority. They also want to complete meaningful work and experience a solid learning curve. They therefore prefer online technology to traditional lecture-based presentations, they want to be in control and use technology to study any time they like. They are practised users of digital technology and prefer to use computers and the internet to complete tasks. They use social media to connect with one another on homework and group projects. For example, Facebook and similar social media programs allow students to collaborate and exchange ideas

about assignments, in other words peer-based learning increase. Memorising facts is not the way the Millennials learn. The application of theory is the cornerstone of the success of Generation Y. The way they learn is therefore different from the way their parents did, and teachers need new, fresh approaches to make learning both real and relevant. Teachers also need to integrate digital tools, but what teachers need more is pedagogical content knowledge (Van Wyk 2014). Generation Y crave attention in the form of feedback, encouragement and guidance, and they may benefit greatly from mentors (parents and teachers) who can guide them and help develop their knowledge and skills to cope with the increasing pressures and escalating competitiveness of a global economy.

The life world of the South African adolescent also reflects the characteristics of the Millennial group because the digital era is the only one that members of this generation have ever known.

The Influence of Technological Advances on the Life World of the Adolescent

The influence of technological advances in the lives of adolescents cannot be underestimated or ignored. Some common problems associated with the use of technology are sexting, or the sending, receiving, or forwarding of sexually explicit information and pictures via e-mail on mobile phones. Most adolescents are unaware that their actions may be considered to be a form of child pornography, which is part of a larger trend known as self-exploitation (Walker and Moak 2010). Another problem arising from the use of social media is cutting, which is an addictive form of self-mutilation that is most prevalent amongst adolescent girls (Berger 2011). The use of technology is not the reason for the addiction but to pursue this secret action (self-mutilation) some adolescents use the internet to find information. There are more than 400 websites dedicated to cutting. Cutting correlates with depression and drug abuse (Berger 2011). Computers and the internet have also introduced a new form of harassment, namely cyber-bullying (Brown and Bobkowski 2011; Papalia and Feldman 2012). By using the internet or other digital communication devices, harmful or cruel text images are being sent or posted, for example sending embarrassing or pornographic material to the one you

wish to harass (Rice and Dolgin 2008; Papalia and Feldman 2012). Therefore, there is a real demand for various forms of support services to victims of cyberbullying (UNICEF 2013). Another problem that has been indicated is technological addiction. Technological addiction occurs where the specific activity becomes the most important thing in a person's life, dominating a person's thoughts, feelings and behaviour (Widyanto and Griffiths (2010). *Nomophobia* or no-mobile-phone-phobia has also been highlighted. This term was created by British researchers in 2009 (Lerner 2012) and it refers to the fear of losing mobile contact (especially for the adolescent), which has become common in the 21st century. The thought of not having contact (for reasons such as low reception, empty battery, and forgetting one's mobile phone at home) can cause feelings that are normally associated with anxiety, fear and panic (Ledbetter 2008). No research could be found on nomophobia in the South African context.

A major trend in the adolescent's use of technology is the dramatic increase in media multitasking, such as instant messaging to three or more people, listening to music on an iPod and updating Facebook (Brown and Bobkowski 2011; Levine and Munch 2011; Van Wyk 2014). Sometimes this multitasking takes place while the adolescent is doing homework (Papalia and Feldman 2012).

The social environment of adolescents has without doubt become increasingly digitally mediated and the time spent on media use as well as the content of the media do have an influence (positive/negative) on all the developmental domains of the adolescent (Bergin and Bergin 2014; Papalia and Feldman 2012). A summary of some influences of media use on the different developmental domains of the adolescent is provided in Table 1 (Levine and Munch 2011; Papalia and Feldman 2012; Bergin and Bergin 2014; Newman and Newman 2012; Berger 2011; Santrock 2013; UNICEF 2013; UNESCO 2013; Gouws 2015; Burger 2014).

It can be deduced from Table 1 that time spent on technology use by adolescents as well as the content of the media can have positive or negative outcomes. Technology therefore, must be used with care. The outcome of technology use does not lie with the electronic device but with the person using the device.

Table 1: Influence of media use on the different developmental domains of the adolescent

<i>Physical development</i>	<i>Cognitive development</i>	<i>Emotional development</i>	<i>Social development</i>
• Media use replaces physical activity. • It promotes bad eating habits. • It contributes to obesity in children. • Contribute to sleep deprivation and interrupt sleep cycle. • It glamorises drug use, portraying smoking and alcohol use as normal and risk free. • Video game players tend to develop good hand-eye coordination, better visual processing and enhanced mental rotation skills • Most adolescents sleep with their cell phone near to them; quite a number sleep with their cell phone under their pillow. This might result in insomnia and short nocturnal sleep. • Media can have a positive or negative effect on the physical self-concept of the adolescent.	• Media use may undermine cognitive ability; however, using social media moderately is not a risk factor. • It encourages rapid shifts of attention, multitasking without reflection, visual learning instead of invisible analysis. • Adolescents who use media excessively have lowered verbal and reading abilities, lower grades and spend less time studying. • Adolescents who use educational media have better reading, mathematical and vocabulary test scores than those who use only entertainment media. • Computers, like television, have the potential to influence adolescents' learning and lifestyles and foster positive communication between people. • Peer-based learning increase • Contribute to critical thinking and innovation.	• Media violence desensitises children so that they respond less to other people who are in distress. • Violence portrayed in the media increases aggressive tendencies. • Minority children may be hurt by stereotypes shown in media. • Media violence is linked to fear and anxiety. (Media violence activates areas in the brain that is linked to emotions.) • Pro-social media might instil feelings of well-being. • A positive association was found between problematic mobile phone use and a series of risky behaviours like aggression and smoking, as well as suicidal tendencies and low self-esteem. • Some adolescents use mobile phones as an escape tool that facilitates their being alone.	• Much of adolescents' online time is used to connect with friends they see during the day, making friendships closer. • It is an important form of communication. • Improves communication between peers and teachers. • Online connections reduce social isolation – it may be a lifeline for adolescents who are isolated because of their sexual orientation, culture or religion. • Groups of people with common interests may support each other through a social network site, for example in the case of adolescents with cancer or anorexia • Online interaction offers some adolescents vital social and emotional support. • The use of media encourages collaboration and teamwork

The Role of Teachers and Parents in Supporting Adolescents in a Technological Environment

It is clear that technological advances play a vital role in the lives of adolescents; therefore parents and teachers should know the social landscape in which their children are moving. In other words, parents need to know about technology and how to teach adolescents to use technology responsibly and safely and how to express themselves appropriately.

However, some parents and teachers are not as conversant with electronic media (technology) as adolescents. Parents frequently do not have the technical abilities or time needed to

keep abreast with their children in the ever-changing technological landscape. In addition, these parents often lack a basic understanding that adolescents' online lives are an extension of their offline lives (Palfrey et al. 2010).

It is important for parents to become aware of the nature and role of technology in the lives of their children and to know that not all social media sites are healthy environments for adolescents. The literature (Harris 2011; Berger 2011; Levine and Munch 2011; Papalia and Feldman 2012; Santrock 2013; Gouws 2015) suggests that parents should:

- ♦ limit daily media and technology use;
- ♦ discuss concerns and potential risks of technology with the adolescent;

- ♦ consider internet filters for sexual content;
- ♦ monitor cellular minutes and the amount of texting;
- ♦ monitor internet postings on social networking sites;
- ♦ build trust so that adolescents discuss their activities on the net. In an attempt to manage their children's media and technology use, some parents befriend their children on Facebook or Twitter and are aware of popular television/music content;
- ♦ make suggestions for developmentally appropriate alternatives;
- ♦ provide adolescents with the necessary skills to understand the underlying messages and purpose of media;
- ♦ teach them media literacy (how to keep themselves safe online); and
- ♦ encourage them to use technology in an appropriate way because technology does have advantages for the adolescent, as was pointed out earlier.

The literature (Berger 2011; Harris 2011; Roberts 2011; Levine and Munch 2011; Papalia and Feldman, 2012; Santrock 2013; Gouws 2015) suggests, for example, that teachers should inform and educate parents and adolescents on the use of media. Teachers should use varied methodologies for teaching and provide plenty of visual stimulation. Teachers need to teach in such a way that adolescents understand the application of theory (the skills of helping learners to see how theoretical information can be applied practically are the cornerstone to their success). Teachers need to provide feedback to learners on tasks and encourage learners to use the internet to do research. It is recommended that teachers use computers and mobile phones as tools for teaching, learning and assessment. Adolescents expect teachers to extend their knowledge beyond the basic facts which they can pick up off the internet.

Parents and teachers need to teach adolescents cyber-citizenship, in other words how to behave and how to survive in the technological world. Technological advances also offer adolescents deeper benefits that extend into their view of self, community and the world

Although the Millennials are perceived to be street-smart, arrogant 'know-it-alls' and technological experts, they are also young, lonely, insecure and find themselves in a life period of major developmental challenges and tasks. They

therefore need much support and encouragement from teachers and parents. Parents and teachers need to talk to the adolescents and find out from the 'technological experts' (the children) what is going on in the technological world. Parents and teachers also need to foster an environment where adolescents can build resilience. This environment according to UNICEF (2013:54) should focus on enhancing adolescent's self-efficacy and control, and their ability to make informed decisions. This should in turn, result in responsible online behaviour.

Technology is currently playing a key role in education, regardless of whether teachers and learners love or hate technology (Mathews 2012). Technology is causing teachers to re-think their approach towards the teaching-learning process. For example, if teachers design their lessons in such a way that the lessons reflect the attributes of well-designed video games, (for example, allow them to be in control, make their own choices, interact in groups and take risks) they will reach their students more effectively. By doing this, teachers will provide the analytical-thinking, team-building, multitasking and problem-solving skills needed in the 21st century (IEAB 2010; Van Wyk 2014).

However, the nature of the population in South African schools has changed drastically over the past few years. In the same school, one now finds learners from different races and ethnic groups, children with different abilities and disabilities, and children from different socio-economic backgrounds. The teacher must therefore be prepared beforehand to handle such diversity – also technological diversity – in the classroom. Almost every classroom in the USA is equipped with a computer, and almost all adolescents use social media (Berger 2011). However, in South Africa the majority of schools do not have computers in every classroom and teachers also need to take into account that many learners do not have access to computers or any technological devices at home to develop 21st century skills (Mathews 2012). This view is supported by Shaffer and Kipp (2010) and Van Wyk (2014) who state that only a small percentage of the world's population use computers, implying that there are still many people who are being left behind in the technological era. However, UNICEF (2013) points out that the 'digital divide' may be more dependent on the type of technology than on a simpler 'access or no access' scenario.

CONCLUSION

This research was successful in answering the research questions: how do technological advances contribute to the changing life world of the adolescent and how can parents and teachers support adolescents in coping with the demands and challenges posed by technological advances?

The information generated from the literature review indicates that the influence of technological advances in the lives of adolescents should indeed not be underestimated or ignored and parents and teachers need to be aware of the complexities and challenges of the digital world. Furthermore, this research confirmed that a world without computers, the internet, mobile phones and smartphones is unthinkable in the life of adolescents. The research showed that the life world of the South African adolescent also reflects the characteristics of the Millennial Generation because the digital era is the only one that members of this generation have ever known.

Some common problems associated with the use of technology, namely sexting, cyberbullying, technological addiction and nomophobia, were indicated in the literature review. Another important factor that emerged from literature review was that all the developmental domains of the adolescent are both positively and negatively influenced by the time spent on media use and the content of the media.

The research established that parents and teachers need to support adolescents in coping with the demands and challenges posed by technological advances. Some guidelines for parents and teachers were suggested and the role of technology in teaching was emphasised.

It can be deduced from the above discussion that technological advances force the 21st century adolescents into a faster pace of life. Either knowingly or unintentionally parents and teachers fail to provide adolescents with what they need to function in the ever-changing technologically driven landscape.

Although this paper is in essence only a literature review, it has proved that John Dewey is correct in saying that we cannot teach today's students as we taught yesterday's. However, the researcher would like to add: "and parents cannot raise 21st century adolescents as they did a century ago".

RECOMMENDATIONS

Based on the research reported in the literature that was reviewed for this paper, various recommendations are made.

- ♦ It is suggested that parents and teachers should take cognisance of all technological aids available to 21st century adolescents.
- ♦ Parents and teachers should teach adolescents cyber-citizenship.
- ♦ A gap exists in the provision of services and support to adolescents, relating to their media use, this aspect should be explored by policy makers.
- ♦ Teaching, learning and assessment methods ought to take into account the changing life world (technological advances) of the adolescent.
- ♦ It is recommended that follow-up research be conducted to investigate how teachers can address the teaching, learning and assessment of the new generation of learners.
- ♦ The validity of technological advances across urban and rural divides also needs to be explored.
- ♦ Since South Africa should be proactive in developing an infrastructure of treatment protocols designed specifically for nomophobic individuals, further research on this phobia is also recommended.

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