An explorative investigation into the effect of frequent versus non-frequent use of social network sites on students' spelling skills and academic performance

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By

Shaun Fourie

SUPERVISOR: Prof. D. J. F. Maree

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ABSTRACT

This paper assesses the relationship between Social Networking Sites (SNS) and the effect of its excessive use on a user's spelling capabilities and academic performance by using a single-factor, multi-level between subjects design (One-way ANOVA). The One way Anova was applied to SNS use (independent variable) and spelling and academic performance (dependent variables). Furthermore, the independent variable consists of three levels, a few times a month or never, a few times a week and every day. Out of a possible 107 respondents a total of 56 respondents, distributed across the various groups, completed the test. A spelling test together with the academic records was used as an instrument to measure their spelling capabilities. The findings suggest that students that make excessive use of SNS performed worse in the spelling test than students that do not make use of SNS or make use of SNS a few times a month. In addition, it is established that the SNS use has no effect on spelling. Conclusions from this study are that social networking sites have many various impacts on the youth, some being positive and others negative. Although the end result was that SNS do not "significantly" affect your spelling capabilities it is suggested that further research be carried out on this topic on a larger and more representative sample.

KEY TERMS

Social Networking Sites (SNS); Chat lingo; Acronyms and Abbreviations; Facebook; MXit; Spelling Capability; Academic Performance.

CHAPTER 1

INTRODUCTION

1.1 Overview

Globally and nationally, it is widely acknowledged that in the past few years, the internet has experienced a remarkable growth in online social SNS; approximately 17% of all time spent on the internet is applied to SNS (Nielsen, 2009). For the purposes of this paper SNS is defined as follows, “a social networking site is an online service, platform, or site that focuses on facilitating the building of social networks or social relations among people who, for example, share interests, activities, backgrounds, or real-life connections” (Nielsen, 2009). The most popular SNS is Facebook, averaging at more than 1.2 billion active users, and more than 874 million Facebook mobile users (Facebook, 2013). Social media sites similar to Facebook, but less active, include MySpace, Bebo, Friendster, Hi5, Orkut etc. (better known by international users only). During the time that this research was undertaken popular mobile social networking sites only included MXit, Twitter, Mig33 and The Grid without the inclusion of other SNS like Twitter, ChatOn, Whatsapp etc. which is also an indicator of how the SNS landscape is continuously changing (Chapman, 2009).

Social networking sites allow users to interact with online friends at any given time at any location that offers an internet connection (Caverlee and Webb, 2008). According to Caverlee & Webb (2008) SNS has many capabilities like uploading pictures, videos, notes, play games, advertising etc. Users want to ‘share the experience’ with their peers and the ‘chat’ feature or ‘post’ (post a message on other people’s wall) feature allow users to communicate with their friends via instant messaging (Nielsen, 2011). Having to interact with friends, and at some times several friends simultaneously can become very time consuming if one has to type long texts. To prevent communication from taking too much time, users have taken innovative steps to create a type of - chat lingo consisting of

primarily acronyms and abbreviations (Eldridge & Grinter, 2003; Rafeal, 2003). This is a common phenomenon in the social networking sites domain, with most users applying this style of texting (Rafeal, 2003). The study is therefore also interested in identifying the effects of texting in acronyms and abbreviations on students spelling capabilities and general academic performance. The introduction chapter provides a comprehensive overview of the topic under investigation including a problem statement, the research aims, the research questions and a brief motivation justifying the need for such research to be completed.

1.2 Research problem

The study aimed at *establishing a difference in spelling ability and academic performance between frequent users of SNS and infrequent users of SNS*. It was also proposed that *students with poor spelling capabilities will perform academically worse than students with good spelling capabilities*. In order to establish such findings a spelling test was completed by students studying at the University of Pretoria.

1.3 Justification

In the mid 1990's the world experienced television as the leading media available at the time, whereas currently television finds itself competing with the likes of smart phones, iPods, iPads, instant messaging tools, virtual reality sites, email and several other electronic communication devices (Brooks-Gunn & Donahue, 2008). In order to keep up with the technological advances television manufacturers have introduced smart TVs that enable users to access social media on their screens (this variable was not included in the study as it is still very newtechnology)). However, technology is fast moving and rapidly

evolving making it difficult for users to stay up to date with the latest advances, uses and improvements of social media. In 2005 the world saw a burst in social media sites with the introduction of several new social platforms since like Facebook, Twitter, MXit, MySpace and many more (Chapman, 2009).

The rapid growth of social media has made it difficult for researchers to keep up with the ever evolving technology trends and the effects that they have on users (Brooks-Gunn & Donahue, 2008). Seeing as researchers know little about the effects of technology and the constant presence of social media in our daily lives it makes it essential for researchers to understand, identify and evaluate the psychological, emotional and cognitive effects that they pose.

Researchers Brooks-Gunn and Donahue (2008) pose the following questions in relation to the possible effects of technology on children:

> "One of the central concerns of today's parents and teachers are how media technology affects children's cognitive development and academic achievement. Does media technology influence learning styles? Does leisure-time media use affect cognition and if so, how? Can media technology be used effectively as a teaching tool in schools? The impact of electronic media on children depends on the age of the child and the content of the media." (Brooks-Gun & Donahue, 2008, p.5)

Other researchers also shared the topic of interest and how SNS can affect the user's behaviour (Roberts, 2000; Anderson, Huston, Schmitt, Linebarger, & Wright, 2001; Huesmann, Moise-Titus, & Podolski, 2003). Research undertaken by Moise-Titus and Podolski (2003) confirms Brooks-Gunn and Donahue's (2008) emphasis placed on

understanding the effects of media exposure and the behavioural impacts that it has on the youth.

Focussing on research particularly focussed on the effects of social media prior to the abrupt explosion of social media sites in 2005, researchers Strasburger and Wilson (2003) had several concerns regarding the presence of electronic social platforms (chat rooms etc.), instant messaging sites and email in our daily lives (i.e. identity development concerns in terms of anonymous online communications or chat room interactions). Strasburger and Wilson's (2003) research focussed on social media and the effects that it have on the youth's psychological and social health identifying an important area of research.

In order to understand the effects of social media on the linguistic, social and psychological behaviour, Hoxhaj (2012) identifies acronyms and abbreviations (i.e. "slang") that has been developed by users, particularly for communicating with one another. Oxford Dictionaries (2012, p. i) define "slang" as "very informal words and expressions that are more common in spoken language". According to Baron (2000), Thurlow (2003) and Dansieh (2011) communicating in this "chat lingo" should not be perceived as a standard language, as indicated by Oxford Dictionaries, but more like a non-standard typographic or orthographic form of communicating.

Adolescents using "chat lingo" as a way of communicating have been associated with several developmental impacts on an adolescent's linguistic repertoire and more specifically development (communication skills including spelling), emotional, social and cognitive behaviour (Strasburger & Wilson, 2003). Adolescents, and even younger, individuals are at a critical stage in their life as they are still in the development stage

(Guvi, 2007; Strasburger & Wilson, 2003). A study by HTCTU (High Tech Centre Training Unit) confirms that *spelling or reading errors can contaminate the information that filters into long term memory* (HTCTU, n.d.). These mistakes can be associated with poor communication skills, unwanted spelling errors, poor information processing speeds and poor academic performance (HTCTU, n.d.). Poor spelling can also lead to difficulty in completing assignments, information processing and timeous completion of tasks. Other problems that emulate from poor spelling are perceptions that future employers may have (i.e. low intelligence, poor writing ability and learning) and difficulty in expressing one's self. These findings should however be interpreted as a potential correlational relationship amongst poor spelling and the development of other deficiencies and not a causal relationship (Hoxhaj, 2012; Strasburger & Wilson, 2003; Baron, 2000; Thurlow, 2003; Dansieh, 2011).

Hoxhaj (2012) hypothesise that during adolescence individuals spelling – vocabulary is still developing and that the use of "chat lingo" during this phase may impact significantly on their spelling capabilities (Dansieh, 2011). An individual's academic performance (i.e. homework, studying etc.) will hence also be affected by excessive use of chatting. There are several, not mentioned, reasons that can attribute to poor spelling and academic performance, but for the purposes of this study a singular focus will be placed on SNS.

In order to confirm some of the assumptions made by these researchers, the study aimed at achieving the following research objectives.

1.4 Research questions

This paper aimed at answering the following research questions:

- Is there a ***difference in spelling ability and academic performance between frequent users of SNS and infrequent users of SNS***?
- Is there a relationship between using ***acronyms and abbreviations during the time spent on social networking sites and users spelling ability / academic performance***?

1.5 Research goals

The primary goal of this research study was establish a difference in spelling ability and academic performance between frequent users of SNS and infrequent users of SNS. The secondary goal was to examine if the effect of using acronyms and abbreviations during interactions on SNS had an effect on the spelling and academic performance of students.

1.6 Thesis structure

- The ***literature review*** provides an in depth overview of communication studies already completed, studies that relate to the topic at hand and studies that indicate a requirement for research in this field.
- The ***methodology*** section describes the research methods, data collection phase and sampling procedures and characteristics.
- The ***analysis*** section includes the research findings and the manner in which the findings was obtained.

- The paper closes with a ***discussion*** about the research implications of this study and draws on inferences tied to the theoretical underpinnings, similar research studies, research objectives and hypotheses.

1.7 Conclusion

Several research studies aim at understanding the various effects and implications of SNS. At the moment there has been little research undertaken to address this specific topic (e.g. information sources included library books, internet searches, Google scholar searches, journal searches, University of Pretoria databases etc.). Many international SNS related research studies exist with only a limited amount of local studies pursuing such research. Several studies speculate about such a relationship's existence; however the results remain inconclusive or qualitative in nature. No statistical significant relationship or correlations have been documented by any other researcher, indicating a lack of research in this area. This study is therefore aimed at becoming the first study of its type that tests whether an individual's spelling ability or academic performance are affected by their use of social networking sites.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

This chapter reviewed research from a multidisciplinary platform inclusive of work coupled in media, technology and the behavioural impacts that it has on the youth (the term “youth” refer to individuals between the ages of 18 and 21). The theoretical standpoint applied was the social learning theory, this allowed for clarification on some of the aspects related to behavioural effects obtained from social media. The review further includes an account of research studies that has been completed regarding the behavioural implications of using cell phones (mobile phones), the internet (World Wide Web), and SNS. Spelling development stages amongst youngsters were also investigated to identify some of the risk areas for linguistic repertoire altercations due to behavioural changes like using SNS. The chapter aims to provide a clear understanding of research that has already been complete, studies motivating such or similar research and some of the issues of completing research within this area. The chapter is concluded by stating the research hypotheses applicable to this study which was generated on the basis of this literature review.

2.2 Theoretical point of departure

The most suitable paradigm able to explain this type of behaviour (people using SNS) is the social-cognitive paradigm. The main theory within this approach, *social learning theory*, provides the researcher an insight into the fundamentals of how media, social media and more specifically SNS have been adopted and retained amongst the youth. The social learning theory argues that the individual continuously learn new behaviour from his or her external environment (Bandura, 1997). This can easily be applied to the manner in which people have adopted media tools like IPods, IPads, laptops, cell phones etc. over the past

few years (Pegrum, Oakley & Faulkner, 2013). People have learned to accept media tools, to adapt their behaviour to be congruent with their external environment and to continuously learn and keep up the latest technological advances.

According to the social learning theory an individual's behaviour is the result of on-going interaction between the person and their situation (i.e. environment) (Bandura, 1977), an example of this is a person that is active on SNS being exposed to different people, violence, gossip, peer pressure to fit in and amongst others 'chat lingo' (Eldridge & Grinter, 2003; Rafeal, 2003). It is suggested and supported by Bandura (1986) that such behaviour can therefore be adopted and ultimately affect or change the individual's behaviour. Bandura (1986) developed a model consisting of the person, situation and behaviour, all interacting and influencing each other in a triangular manner. This is displayed in figure 1.

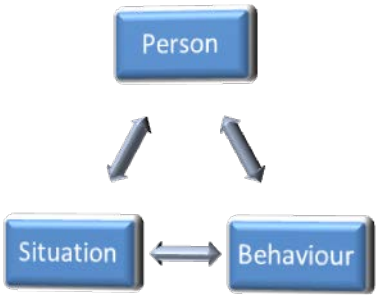


Figure 1. Model of interaction (Meyer et al., 2000, p. 343.)

According to the model, the *person* influences both the situation and behaviour, the *situation* influence the person and behaviour, and the *behaviour* influence the person and situation. An illustration of this is a person changing his or her writing style (behaviour) when text messaging (situation). Moreover, when text messaging (situation), the situation requires the person to use abbreviations/acronyms (behaviour) for fast texting. Lastly,

using abbreviations/acronyms (behaviour) are decided upon the person whether he or she is texting, or for instance, doing an assignment (situation).

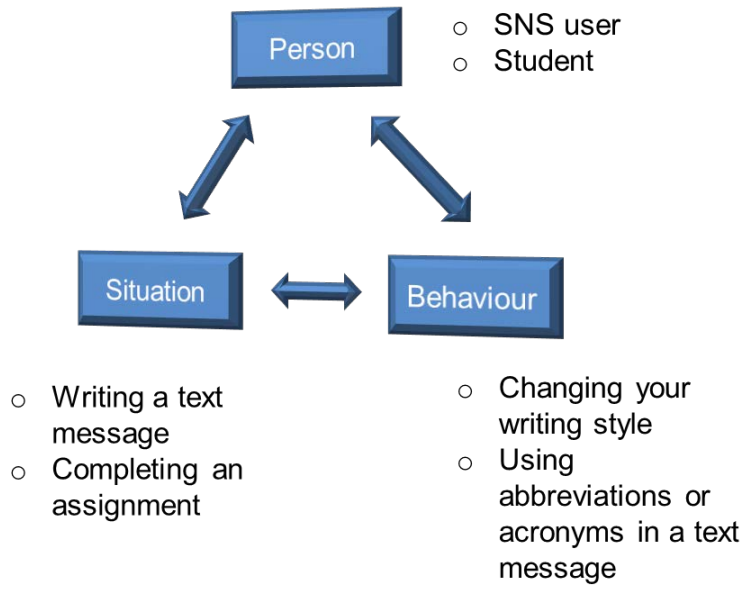


Figure 2. Conceptual adaptation of the model of interaction based on SNS

The social learning theory also suggests that an individual plays an active part in their learning process and ultimately selects which behaviour to adopt during their observation of other individuals experiences (Bandura, 1977). Rotter (1966) describes this behaviour as the *internal locus of control* during which individuals are under the impression that they are in control of their decisions and have full control of their behaviours. Behaviour is hence not affected by external factors such as peer pressure i.e.

- I choose to use chat lingo instead of correctly spelled words
- I choose to adopt violent behaviour from watching TV
- I choose to be socially connected to peers
- I choose to follow the example of my friends to be sexually promiscuous

According to this theory individuals believe that they also have full control of their behaviour's outcome (i.e. even though a person uses chat lingo they can select to either use chat lingo or not, irrespective of the environments effects). However, the social learning theory also state that an individual adapts to his or her surroundings, whether it is selected or not (Bandura, 1997). Many examples exist, but for the purpose of this study and its focus the most appropriate example would be an individual that use abbreviations and acronyms while texting or an individual that choose not to. Social learning theory involves the learning of behaviour to which one is exposed to, be that either positive (use of correctly spelled words) or negative (use of misspelled words). Peer approval (situation) is usually given as a reward to conform to the group's rules (behaviour), therefore using the same styles of communication (texting) will provide positive feedback from peers, reinforcing their methods of communicating (either positive or negative behaviour) creating a positive and rewarding feedback loop between sender and receiver.

When an individual furnishes time and attention to a situation and what it embodies, certain factors have an influence on the person's attention. Factors that influence attention is called *retention* (to what extent the person will remember the observed behaviour) (Rotter, 1966). Factors such as affordability (less expensive to write short messages), attractiveness, peer pressure (to join friends) and faster typing speed, may contribute to the retention of such behaviour. By using these theoretical point of departures and applying it to the SNS context adds value and insights into how SNS behaviour can be explained. The research included in the literature review was viewed, researched and evaluated from a social learning theory's perspective as this provided the best suitable explanation of the behavioural effects of current media on the youth of today.

2.3 Youth and media

Electronic communications platforms (i.e. Skype, Facebook, Twitter, MXit, etc.) are increasingly becoming more popular with several possible direct and indirect influences on an individual's daily life and activities, both locally and internationally (Tapscott, 1998). Today's youth have been, and still are, continuously being exposed to various communication tools likely affecting their generation's behaviour on a worldwide scale (Tapscott, 1998).

With the development of electronic communication platforms such as, email, teleconferencing, fax, cell phones, instant messaging (IM), short message services (SMS), multimedia messaging services (MMS), Skype, and most importantly social networking sites such as Facebook, MXit and Twitter, it has become increasingly difficult to assess the possible effects of such communication tools on the behaviour of our youth (popular communication tools such as Black Berry Messaging (BBM), WhatsApp, ChatOn, Google Talk etc. programs developed after the development of data collection have not been incorporated in this study as their effects were not measured) (Buckingham, 2007;Guvi, 2007). The manner in which some people interact and communicate have changed, many have shifted to more technologically advanced communication tools to assist them in interacting with one another, significantly changing the manner in which daily communications occur (Buckingham, 2007). People are able to communicate with one another via e-mail, sms, internet based instant messaging platforms (i.e. WhatsApp, MXit etc.), chat rooms and video calls (i.e. Skype, Gtalk etc.) (Rideout, 2010).

Tapscott (1998) state that, "[t]oday's youth are different from any generation before them" (p.4), and with more communication tools being available to today's youth than any other generation before them, it can be expected that with the introduction of new technology

there may also be certain unforeseen influences on our behaviour. (e.g. decline in social interactions, exercise, social gatherings etc.). Research from Worthen (2007) agrees with Tapscott's (1998) findings, though includes that the relationship between media and the youth is two-fold, similar to what is suggested by the social learning theory, just as media have a possible influence on the youth's development; so does the youth have a likely impact on electronic media. For instance, a known SNS such as instant messaging (IM) was primarily designed for sending text messages to friends or family, but probably did not anticipate that a new chatting style would surface (i.e. using chat lingo to communicate faster).

Brooks-Gunn & Donahue (2008) agrees with Tapscott (1998) in that the current generation of youth is perhaps different to previous generations but highlight that although this is due to the large leaps in technology in the past 30 years, we cannot base all of our assumptions on such general feedback. In Brooks-Gunn's and Donahue's (2008) research, specific focus is placed on the possible effects of using more than one electronic communication tool simultaneously. Hence, rather than researching the singular effect of social media on its users, the focus was placed on the combined effects of using several social media tools at the same time (i.e. use laptop, television is switched on, IM friends, listen to music on the radio etc.) (Brooks-Gunn's & Donahue's, 2008). It is therefore essential to understand the claimed effects of social media on its users and if the effects can be correlated to each social media platform or if it is a combination of social media platforms affecting their users' behaviour (Brooks-Gunn & Donahue, 2008). The social learning theory motivates such an approach by looking at the effect of multiple variables, sometimes having combined impacts, rather than looking at single variable with a singular effect (Bandura, 1997).

According to Pierce (2007) frequent exposure to mass media or several media types simultaneously, can have adverse effects on an individual's behavioural patterns, especially if it coincides with adolescence. Possible adverse effects include; a possible decline in academic performance (Pierce, 2007); familial, school, and communal spheres become less relevant (i.e. the influence of these systems in aiding the development of an individual's social skills may decline as media become more socially significant); collectivistic orientated groups, cultures and people start to adopt individualistic ideals and values, applying their focus more intensely to personal gain and achievement; a distorted view of reality (i.e. individuals become accustomed to instant gratification and success from the messages that media put out, which indicates that dreams, ideals and success can be obtained without effort, experience and hard work which develops into misrepresentations that creates a rise in expectation gaps); and attention to banal and trivial things increase as education, creativity and culture decreases; increased tendency to have aggressive and violent outbursts (Lenhart, 2010; Kowalski, 2010; Hartup, 1996; Rideout, 2010). Media, although here portrayed in a negative light, can also implement positive change in an individual. Media might broaden people's outlook of the world, enhancing their lives, enabling them to destroy stereotypes; the media, in particular SNS, increases communication possibilities among individuals creating a network of shared thought and ideas (Lenhart, 2010). Critical thinking is also encouraged with an increased exposure to social and political surroundings (Ito, 2008). Although these influences or possible effects are just a few of the possible positive and negative effects that media possess, not all of them were the focus of this research study. Specific focus was placed on social networking sites and their influence on the individuals spelling skills and academic performance.

Despite the claimed positive influences of social media / technology, a negative impact could possibly be poor spelling that relates to poor academic achievement / poor communication skills.

2.4 Internet and the youth

According to the latest Internet World Stats, last updated on June 2012 (Internet usage statistics for Africa, 2012) the current estimation of the world population is approximately 7,012,519,841 people. Africa has a population of about 1,073,380,925 people, of which approximately 167,335,676 people are internet users. This means that 15.6% of the population in Africa are internet users. African users make up approximately 7% of the world's internet users (Internet usage statistics for Africa, 2012).

Table 1: Internet world statistics

WORLD INTERNET USAGE AND POPULATION STATISTICS June 30, 2012						
World Regions	**Population (2012 Est.)**	**Internet Users Dec. 31, 2000**	**Internet Users Latest Data**	**Penetration (% Population)**	**Growth 2000-2012**	**Users % of Table**
Africa	1,073,380,925	4,514,400	**167,335,676**	15.6 %	3,606.7 %	7.0 %
Asia	3,922,066,987	114,304,000	**1,076,681,059**	27.5 %	841.9 %	44.8 %
Europe	816,372,817	105,096,093	**518,512,109**	63.5 %	393.4 %	21.5 %
Middle East	223,608,203	3,284,800	**90,000,455**	40.2 %	2,639.9 %	3.7 %
North America	348,280,154	108,096,800	**273,785,413**	78.6 %	153.3 %	11.4 %
Latin America / Caribbean	592,994,842	18,068,919	**254,915,884**	43.0 %	1,310.8 %	10.6 %
Oceania / Australia	35,815,913	7,620,480	**24,279,579**	67.8 %	218.6 %	1.0 %
WORLD TOTAL	**7,012,519,841**	**360,985,492**	**2,405,510,175**	**34.3 %**	**566.4%**	**100.0%**

Although Africa holds the smallest number of internet users, African users have grown 3,606.7% between 2000 and 2012 (the internet use growth in Africa is more than any other continent indicating a trend of internet users significantly growing from a small base). What

this means is that Africa is becoming a fast evolving continent with an increasing number of internet users every day. South Africa's internet usage from 2000 to 2012 has also increased from 2.4 million users to 6.8 million users, identifying a strong increase in exposure to the internet (Internet usage statistics for Africa, 2012).

In the past, prior to internet, the socialising landscape was very different to what we are currently experiencing, this however changed with the introduction of the internet and its capability to connect people on a global level. As stated by Richards (2006) the internet began in 1969 as a USA Department of Defence project called ARPANET, in a very short space of time it developed into the World Wide Web, used by a multitude of people on a global basis. What started out as a military communications project specifically designed for a military environment now covers the globe and represents the digital revolution that has had an still are having an impact on traditional communication methods, Generation Xers' perception of the 'self', traditional cultural values and several other social phenomena (Richards, 2006). The internet has also made it possible for the introduction of online communication tools like email, IM (instant messaging), SMS, Skype, and SNS. With the introduction of such tools, the manner in which people socialise was redefined into both physical and virtual (i.e. online) interaction and/or socialising and not just physical.

2.5 History of social networking sites

South Africans are spending more time attributed to online activities than ever before (Internet usage statistics for Africa, 2012). Nielsen online's (2008) findings found an increase in online behaviour, but reports that most South Africans spend their online time mostly engaged in employment searches (13 minutes per session); this is followed by personal and dating sites (10 minutes per session), with real estate searches coming in

third place (approximately nine minutes per session). Other online sectors receiving attention is blogging (Facebook, MySpace, Twitter etc.), the automotive industry, general classifieds, education, mobile, email, messaging, and chatting (MXit, Facebook chat, Gtalk etc.).

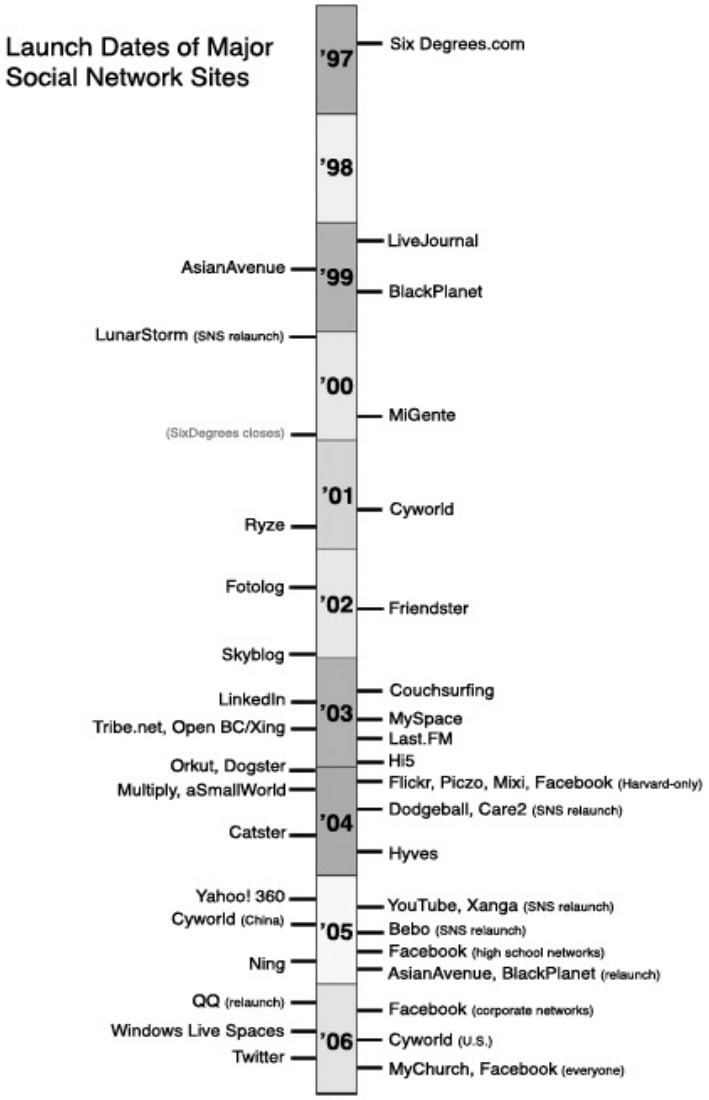


Figure 3. Launch dates of social networking sites (Boyd & Ellison, 2007, i)

Figure 3 illustrates the history of social networking sites on a 9 year time-scale starting at 1997. According to Boyd and Ellison (2007) the first recognisable social networking site was Six Degrees.com which was launched in 1997. Six Degrees, basically enabled users to create profiles portraying themselves, list friends and access friends lists (Boyd & Ellison, 2007). Six Degrees was the first SNS as it included many features from other social interaction sites (not the same as SNS) that had already existed, for instance users were already able to upload profiles onto dating sites and chat rooms etc. (Boyd & Ellison, 2007). The major difference between Six Degrees and other sites was that it consisted of features from many other social interaction sites, whereas other sites had only a few capabilities. However, although Six Degrees attracted millions of users initially, it failed to sustain the popularity and ultimately closed their doors in 2000. The creator's reasons were that Six Degrees was just too far ahead of its time, too little people had access to the internet and many of the internet users did not visit the site regularly (Boyd & Ellison, 2007). In 1999 various other sites like LiveJournal, AsianAvenue, and BlackPlanet launched their companies (Boyd & Ellison, 2007). It was however not until the year 2000 that SNS experienced a re-launch. It was not until the launch of LunarStorm that really marked the comeback of SNS in 2000 ultimately paving the way for the creation of new SNS to be introduced

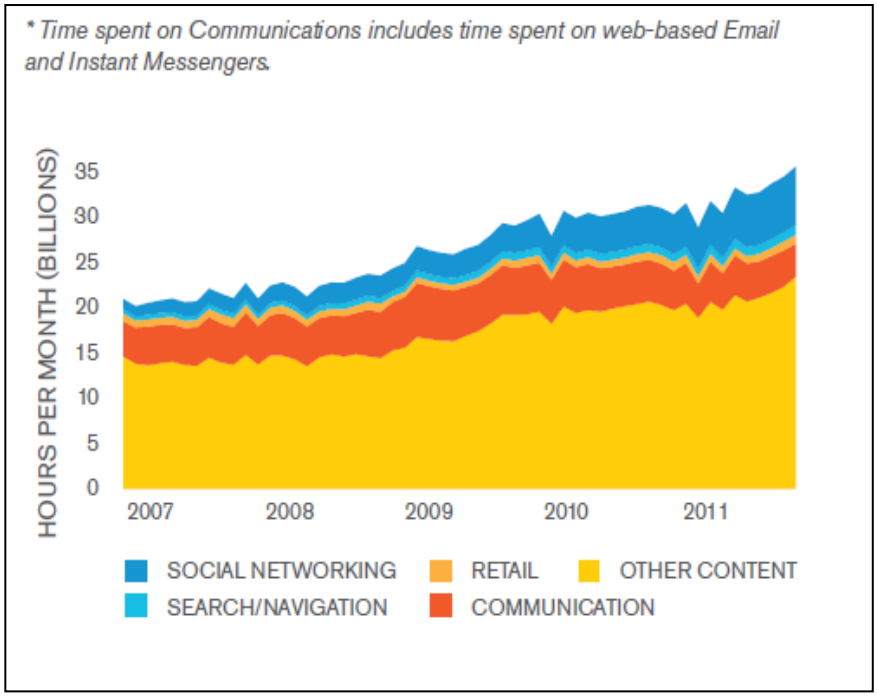


Figure 4. Time spent on the internet (Friedman, 2012, p. 21).

Between 2007 and 2011 SNS reached a total of 1.2 billion users worldwide (82% of the online population) with Facebook holding the upper hand (Friedman, 2012). Since 2006 social networking sites have also become the most popular content category of online surfing (Friedman, 2012; Caverlee & Webb, 2008). People spend more time using SNS compared to internet searches, communication, retail or any other type of internet activity.

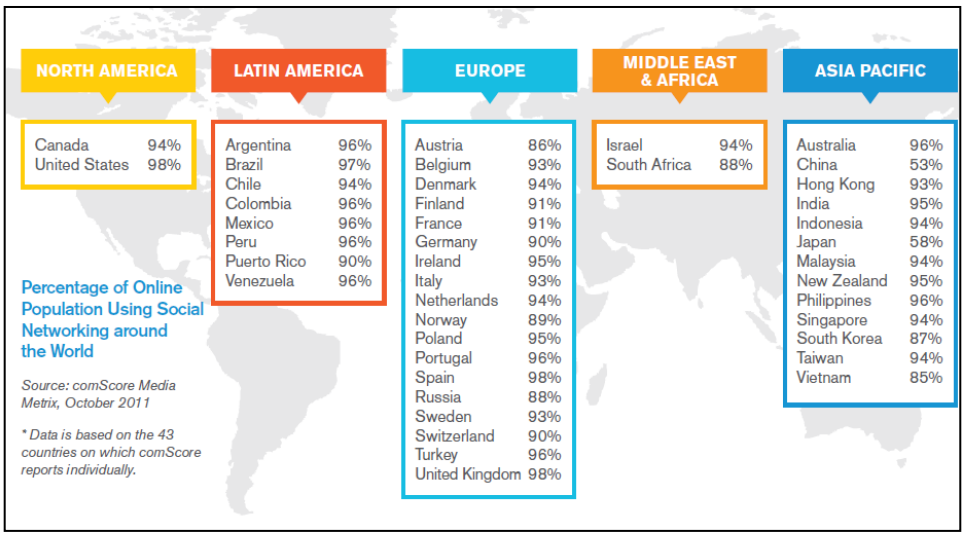


Figure 5. View at SNS penetration globally (Friedman, 2012, p. 22).

The growth of SNS users is a global cultural phenomenon that is vastly popular in every country that it is available in. Looking at the global penetration of SNS amongst internet users approximately 98% of internet users from the United States of America, United Kingdom and Spain are users of SNS (Friedman, 2012). These high number of SNS users were reported for several other countries as indicated in Figure 5. The only 2 countries (out of 43) that did not indicate an SNS penetration above 85% were China (53%) and Japan (58%). South Africa reported a penetration rate of 88%, which is indicative of a high internet and SNS user rate.

Facebook and MySpace are described as SNS through which friends communicate with each other by means of instant messaging and posting comments on friend's "walls" (Langwell, Tom Tong, Van Der Heide, & Walther, 2008). Twitter is similar to Facebook, with the function allowing one to follow a friend's post and friends following your posts (Blain, 2010). Facebook and MySpace also allow friends to send messages; instant messages or messages similar to email. Currently Facebook, MySpace, Twitter etc. have moved to mobile phones as either a webpage that can be browsed using the internet browser or a downloadable mobile application.

2.6 Mobile phones and the youth

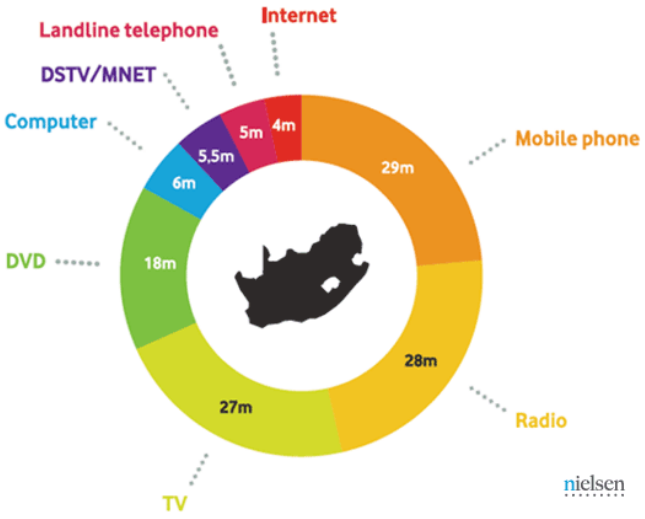


Figure 6. Usage of technology mediums (Hutton, 2011).

In 2002, mobile phones (cellular phones) surpassed the amount of landlines worldwide (Donner, 2008). According to Nielsen (2011) the total percentage of South Africans in possession of a cell phone are about 57% of the entire population, with the youth making up a considerable proportion of that (Gilham & Van Belle, 2004). The South African youth mobile phone users are increasing at a rate faster than any other country worldwide (Mattheus, 2004). According to Gilham and Van Belle (2004), the "cell phone embodies much of what young people demand, namely mobility, affordability and constantly staying in touch with friends" (p. 479). It is these reasons that mobile phones have attracted so many users. A mobile phone can send text messages (similar to a short e-mail sent via the phone) that cost less than a voice call, making it popular amongst the youth due to its affordability (Rafeal, 2003).

On a mobile phone the alphabet's 26 letters, numbers as well as punctuation are subjected to a keypad consisting of only 10 digits, for example, to write a letter 'Y' the user has to press the 9 digit three times, and depending on your mobile's model to acquire a '?' the user must press the '1' digit four times (Rafeal, 2003). Due to the limited writing space and billing per text message, the people have taken it upon them to transcribe text messages into shortened abbreviated versions (Eldridge & Grinter, 2003; Rafeal, 2003). These abbreviated versions allow individuals to send more messages for the same amount of money. Although this type of 'chat lingo' surfaced predominantly on mobile phones (Guvi, 2007), its appeal has influenced numerous amounts of SNS users to adopt this texting language, even though they frequently chat on a desktop computer. Current mobile / smart phones allow users to use a keyboard enabling them to type faster (keyboard similar to that of a PC) and although many users have this tool (keyboard) and a spell checker at their disposal some still wish to use chat lingo to communicate. An in-depth view at social networking sites and their use on mobile phones will be discussed next.

2.7 Social networking sites, mobile phones and the youth

Table 2.2: South African view at SNS usage (Friedman, 2012, p. 59)

South Africa

		Index to Worldwide	*Index to Region*
Total Audience (Age 15+)	6.7 Million		
Total Social Networking Audience	5.9 Million		
Online Population Visiting Social Networks	87.6%	106	100
Share of Time Spent on Social Networking	19.1%	100	71
Average Time Spent on Social Networks	2.0 Hours	36	32

As illustrated in Table 2.2 Friedman (2012) reports that of the 6.7 million internet users above the age of 15 a total of 5.9 million internet users visit social networking sites (87.6% of the online population visiting SNS). Currently the average time spent on SNS across all ages is at an average of 2 hours per day. The increase in time spent online visiting SNS over the past few years indicate a strong increase in SNS popularity since its introduction several years ago.

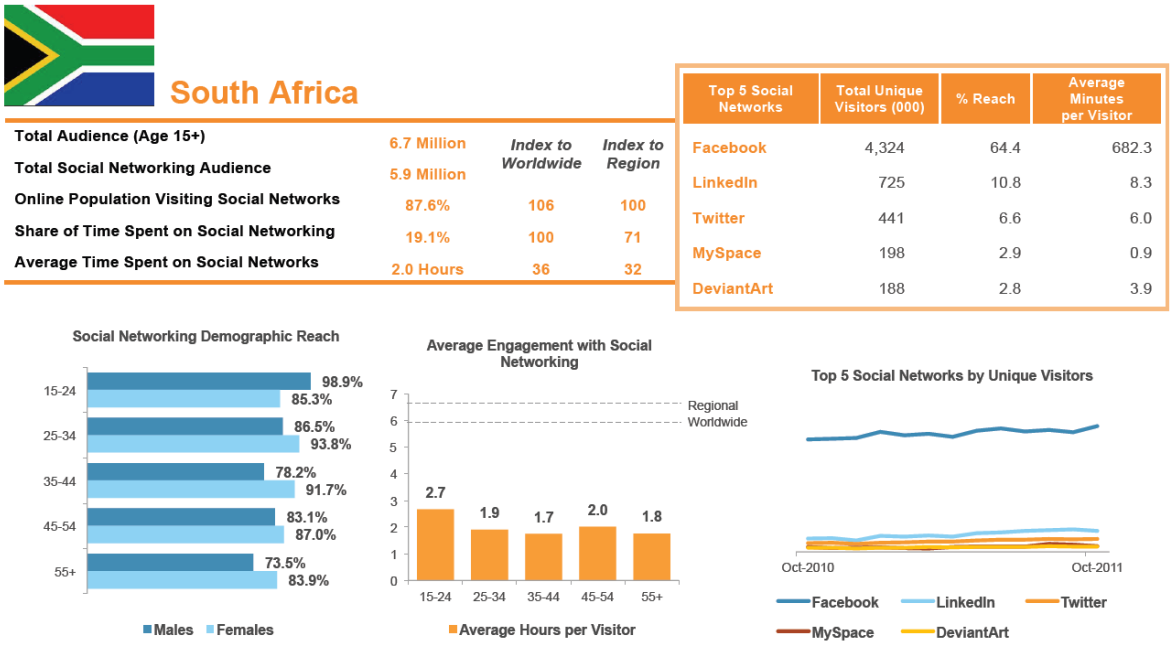


Figure 7. In-depth view at South African SNS users (Friedman, 2012, p. 59).

Friedman (2012) reports, as indicated in Figure 7, that internet users between the ages of 15 - 24 spend the most time visiting SNS (approximately 2.7 hours per day for youth and young adults). The most visited SNS is Facebook at a staggering average of 682.3 minutes spent per visitor; other SNS include LinkedIn (8.3 minutes) and Twitter (6 minutes). Research within this area not only indicates a major increase in SNS, but highlight specifically Facebook as being the most popular SNS at the moment (Friedman, 2012).

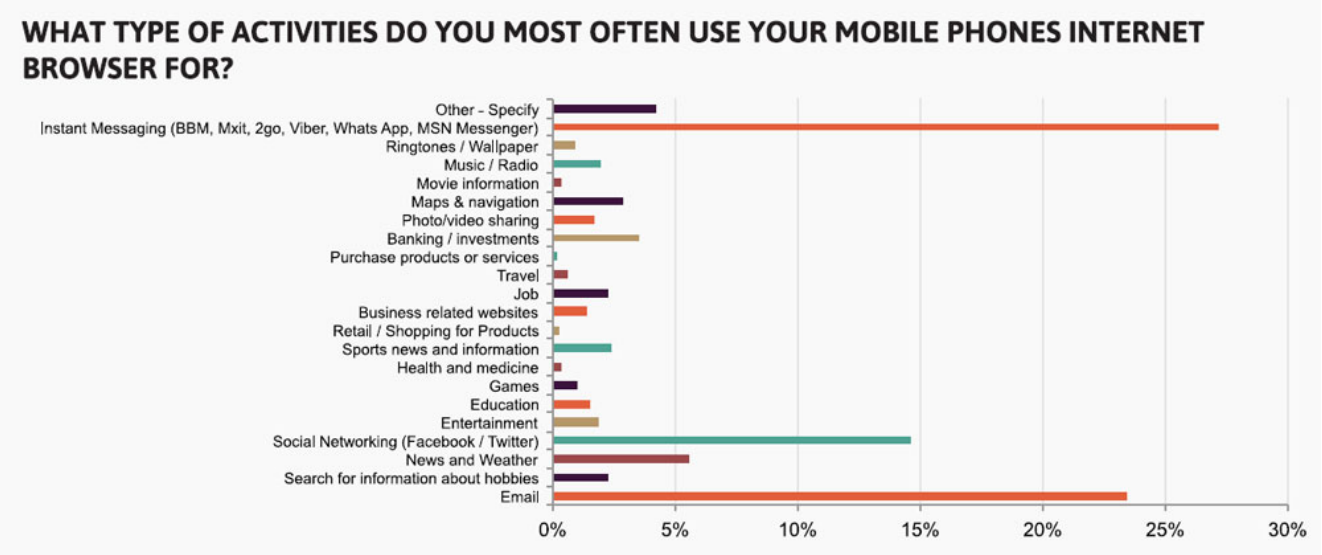


Figure 8. Activities used on the internet – Mobile phone (MyBroadband, 2014).

Research by Mybroadband (2014) focussed specifically on internet usage on mobile phones and yielded some interesting results. Findings represented in Figure 8 indicate that mobile internet users use the internet most frequently for accessing instant messaging applications like WhatsApp. This is followed by email and social networking sites (MyBroadband, 2014). MyBroadband (2014) research compliments Friedman's (2012) research as it was not only focussed on the use of SNS but how much time do users spend on SNS in comparison with other online activities. The findings obtained accentuate the importance of SNS and general media in the South African youth.

Taking into account that the youth are the most active SNS users and the originators of "chat lingo" (using acronyms and abbreviations as text messages) this paper's focus was narrowed to focus on mobile phones and its role in the development of "chat lingo".

Mobile phone technology is continuously improving and surpassing expectations. A mobile phone that includes the basic features of dialling, texting and basic internet browsing is a

thing of the past; currently mobile phone developers have created new and improved mobile phones called “smart phones”. According to the Britannica Encyclopaedia (2012) a smart phone is defined as follows:

> “Smartphone, also spelled smart phone, mobile telephone with a display screen (typically a liquid crystal display, or LCD), built-in personal information management programs (such as an electronic calendar and address book) typically found in a personal digital assistant (PDA), and an operating system (OS) that allows other computer software to be installed for Web browsing, e-mail, music, video, and other applications. A smart phone may be thought of as a handheld computer integrated within a mobile telephone” (p. i).

According to Friedman (2012) smart phones enable SNS users to connect to SNS on-the-go facilitating real time interaction. Countries such as the United Kingdom and the United States of America report an incidence rate of 35% (percentage of SNS users in that country) of users that use their mobile phones to access SNS (Friedman, 2012).

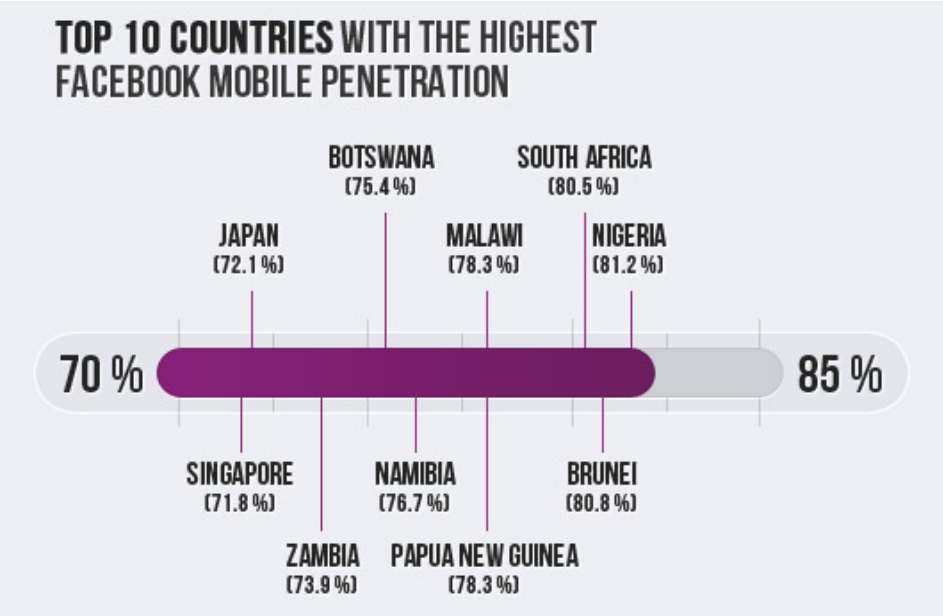


Figure 9. Facebook mobile penetration (Socialbakers, 2012, p. i).

The incidence rate of South Africans using their phone to access Facebook is approximately 80.5% (Socialbakers, 2012). This places South Africa as the country with the third highest Facebook mobile penetration. Social networking sites other than those that are both desktop and mobile friendly are SNS that are primarily based as a mobile application that serves mainly as a communication tool. These SNS include SNS like MXit, Mig33, the Grid, etc. (during the time of the experiment (spelling test) applications like BBM and WhatsApp did not exist and was therefore not included in this paper as possible platforms for communication). At the time this study was completed MXit was called the most popular communication application. MXit which is a South African SNS reached their 1.8 million members milestone in October 2006 shortly after its development. In April 2007 MXit's members had tripled in total members to roughly 5.4 million with the majority of its members being under the age of 25 years old (Guvi, 2007). Currently MXit has nearly 50 million users (MXit, 2012) making it one of the most used mobile SNS in South Africa.

Guvi (2007) describes MXit as an instant messaging mobile application that is freely available to download via GPRS or 3G. An emphasis is placed on certain fears concerning SNS addictiveness, the exchanging of explicit information and the usage during school hours (Guvi, 2007). Although there are several possible behavioural impacts of using MXit or similar SNS is not the focus of this study and is hence not explored further. According to Guvi (2007) the youth requires products that offer affordability; and according to teenagers MXit offers exactly that. In Guvi (2007), a user nicknamed 'Elektra' exclaims that she is overjoyed thanks to the low costs involved in sending messages, MXit allows her to spend several hours chatting and still paying less than one rand. In a survey 'Elektra' and 'Rishka' admits to the addictive nature of MXit, but explain their addiction to MXit as a solution to boredom and a noisy class (Guvi, 2007). Due to the lack in character space of only 160 characters per text message (sms and some SNS platforms) and the time it takes

to write a text message, the youth have created a style of texting that involves abbreviations and acronyms and implements it across all of their communication platforms. Rafeal (2003) refers to this style as a 'developed shorthand'.

Table 2.3: General acronyms / abbreviations used

Acronym	**Correct wording**
WRU	Where are you
CU 2NYT	See you tonight
LOL	Laugh out loud
Lil	Little
GR8	Great
Evry1	Everyone
KWL	Cool
B4	Before
L8r	Later
Hols	Holiday
Nxt	Next

These are just a few of the abbreviations and acronyms used (Guvi, 2007). Other conversations between MXit users include messages such as "KWL GR8 Stuff I am glad 4 you" (Cool, great stuff, I am glad for you) "Yea 2 of my x bfs are from ballito" (Yes, two of my ex-boyfriends are from Ballito) "So wot u in the mood for steers, spur, mcdee's? it up to u" (So what are you in the mood for, Steers, Spur or McDonalds? It is up to you) "M doing fyn. Datwld b gr8 if u passed by. Was actlythnkinabttextin u nw" (I am doing fine, That would be great if you passed by. I was actually thinking about texting you now)" (p. 15). These are just a few examples of the messages that the youth use to communicate.

Taking into account that people using texting styles that they create themselves and the inability of many SNS (such as Facebook, MySpace, Twitter and MXit) to indicate incorrect spelling and grammar mistakes offers an opportunity for research to be undertaken in this area (Rafeal, 2003). Cook (2004) responds to this by posing several questions like can the present or future technology alter the way we write or speak? And if that is the case, are SNS users that are constantly online chatting or texting at greater risk of making spelling

and grammar errors in assignments or any event that requires writing? According to Cook (2004) using incorrectly spelled words (chat lingo) is concerning as youth members that want to communicate in a business setting later in life may find it difficult to implement correct spelling and grammar. Unable to communicate in an accurate and professional manner may influence the youth's work performance and ultimately filter through to their social, emotional, and socio-economic wellbeing. Schoolteachers and lecturers often complain of bad grammar and spelling errors in assignments of students (Guvi, 2007). A noticeable effect of using chat lingo has appeared as students are currently finding it difficult to clearly express themselves through written messages (Guvi, 2007). It is proposed that the student have become so accustomed to using chat lingo to communicate that it has become difficult for them to write in the correct spelling during assignments and test (Guvi, 2007).

Current research studies have not yet identified the full range of impacts from using chat lingo as discussed above, and with acronyms and abbreviation's popularity in the youth, it is imperative to complete such research. It was therefore the aim of this paper to narrow the gap in SNS research and the available literature on this topic. However, in order to understand the full effect of chat lingo on the spelling of users, it is necessary to document the stages of spelling development.

2.8 Development of spelling skills

According to Manzo and Manzo (1995); Bean and Bouffler (1997); and Browne (1999) various developmental stages of spelling exist. The stages of spelling development are *scribbling*, *drawing*, *non-phonetic lettering, phonetic spelling,* and *conventional spelling*. Below is an in depth view at each phase.

2.8.1 Scribbling

The first stage of development is “scribbling” which involves a child scribbling unrecognizable pictures of their thoughts and feelings (Eloff & Ebersohn, 2004). This includes drawings by toddlers like a picture of a family with the dad being absent etc.

2.8.2 Drawing

The second stage of development is the expression of thoughts and feelings by children through recognizable drawings, pictures of people and things near to them (Eloff & Ebersohn, 2004).

2.8.3 Non-phonetic lettering

This stage mostly involves children trying to write their own names or known words next to a picture or drawing. The drawings, although more recognizable, are in general is still unrecognizable (Eloff & Ebersohn, 2004).

2.8.4 Phonetic spelling

The penultimate stage of phonetic spelling consists of a phonologically-based process, in which individuals base spelled words on the sequence of sounds. This stage involves the individual trying to formulate a word represented in a sequence of sounds (Eloff & Ebersohn, 2004). It is argued that SNS alter the *phonetic lettering* stage. It is also during this stage that shortened words with similar phonetic properties start to deceive individuals. An example of spelling with such phonetic properties is *begin*. The phonetic properties of this word allow the word to be perceived as *bgin*, allowing the individual to formulate an incorrectly spelled word. The phonetic spelling stage is the fourth and second last stage, prior to conventional spelling (i.e. correctly spelled words). Thus if the phonetic stage of processing is distorted (i.e. from excessive use of SNS) the final stage of conventional spelling will be altered as well (Eloff & Ebersohn, 2004).

2.8.5 Conventional spelling

The final stage of conventional spelling refers to the spelling of words in the correct manner in which it was supposed to be spelled (Eloff & Ebersohn, 2004).

As already established, chat lingo is most likely to fit in the *phonetic spelling stage.* Building on this presupposition it is anticipated that the continuous usage of such texting styles will alter the lexicons of SNS users, and ultimately create a difficulty for the users to distinguish correct spelling from incorrect spelling (Guvi, 2003). It is suspected that using chat lingo with friends will influence their spelling in school; hence in order to test these suspicions the following hypotheses were delivered.

2.9 Hypotheses and research questions

Following the literature review's insight into social media and the usage of chat lingo, the author raises this question, does a persons' frequency of SNS usage bear a significant effect on the amount of spelling errors of students at the University of Pretoria? The independent variable for this study is *SNS frequency*. SNS frequency consists of three conditions, namely students that have never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day. The dependent variables are the respondent's test score obtained from their spelling test and their academic performance calculated by averaging all of their subjects / modules into one score.

The hypotheses are as follows:

H_0:$\mu_1 = \mu_2 = \mu_3$: The null hypothesis states that no significant difference exists between the individual's spelling test score and individuals that has; never used SNS or use SNS a few

times a month; students that use SNS a few times a week; and students that use SNS every day.

H_0:$\mu_1 = \mu_2 = \mu_3$: The second null hypothesis state that no significant difference exists between the individual's academic performance and individuals that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

H_1: $\mu_1 \neq \mu_2 \neq \mu_3$: The alternative hypothesis states that a significant relationship exist between the individual's spelling test scores and individuals that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

H_1: $\mu_1 \neq \mu_2 \neq \mu_3$: The second alternative hypothesis states that a significant relationship exist between the individual's academic performance and individuals that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

CHAPTER 3

METHODOLOGY

3.1 Overview

This chapter outlines the methodology of undertaking the primary research to address the issues highlighted in Chapter 2. The purpose of the methodology chapter is to describe and explain the various processes and procedures that were utilised during the successful completion of the experiment. The procedures and processes used to complete this research are therefore written in a way that the experiment's procedures can be easily replicated for future research purposes.

The sampling methods, sampling criteria and the sample characteristic are discussed first, followed by a look at the measuring instruments used to complete this study. The research design includes a discussion of the idea generating phase, problem definition phase, procedures design phase, observation phase, data capturing phase and interpretation phase. These phases were documents in details to ensure that a comprehensive understanding of the research design is obtained.

3.2 Sampling

Due to limited resources the sample consisted of first year psychology students enrolled at the University of Pretoria during 2010. Students that formed part of the sample were specifically selected to participate in the study due to their level of academic education and similar academic prerequisites needed for successful acceptance into the academic programme. The similarity in academic prerequisites and performance of respondents instils a certain level of confidence in the sample's competency to differentiate between correct and incorrect spelling. The University of Pretoria offers 1800 academic courses, of

which most are presented in English and some in Afrikaans (University of Pretoria, 2010). According to de Wet (2002) the majority of South Africans prefer English as their language of learning and teaching after the first four years of schooling and not their home language. English is seen by many IAL speakers as the dominant language of trade and industry. Knowledge of English is therefore perceived to be essential for economic empowerment (de Wet, 2002). The purpose of studying at a University is to become a citizen skilled in various trades and industries. Taking into account that the majority of South Africans that are literate understand English, most students select academic courses presented in English and that English is the professional language of trade it was determined that the questionnaire should be in English. The decision to select English were also determined based on the fact that most of the SNS and chat rooms operate in English only, with appearances of acronyms and abbreviations occurring more frequently in English (Guvi, 2007).

Other sources suggest that learning in English may not necessarily be the preferred option, and it is the only suitable language study option that some students have (Mitchell, Myles and Marsden, 2013). South African universities also choose offer mostly English and Afrikaans courses to their students making it even more difficult for students that have an African first language to study (University of Pretoria, 2013). Given the limited access to students and resources it was decided to approach all first year Psychology classes, irrespective of language. The risks of using spelling lists in various languages that are not equally difficult outweighed the risks of having respondents that are answering a test in a language that is not their first language.

In order to ensure parent consent were not required students under the age of 18 were excluded from the study. This was also done so that the process of completing the spelling

test was not delayed due to students not receiving parental consent to complete the test. It was established that a total of 90 respondents would suffice reliability and validity requirement. According to Sekaran and Bougie (2010) the sample size required in order for a sample to deliver valid results should be more than 30 respondents, therefore a sample of 90 respondents would yield statistically valid results. Identifying significant differences between groups that are smaller than 30 respondents per group greatly increase the risk of reporting statistically incorrect findings (Sekaran and Bougie, 2010). Taking this into account, a minimum sample of 90 respondents, of which, each group containing 30 respondents (group one: respondents that have never used a SNS or use SNS a few times a month; group two: students that use SNS a few times a week; group three: students that use SNS every day) were required

3.3 Measuring instruments

The study consisted of two measuring instruments, namely the recruitment questionnaire (Appendix B) and the computerised spelling test. The recruitment questionnaire obtained demographical data and SNS related responses. The computerised spelling test was used to obtain a spelling score for each participant which was calculated by counting the total correct responses. The instruments, discussed in detail next, were used to obtain data necessary for analysis.

3.3.1 Recruitment questionnaire

The recruitment questionnaire's (Appendix B) purpose was to gather demographical data from respondents, such as their; name, student number, telephone number, email address, gender, age, academically enrolled degree, race, home language and most

importantly their SNS behaviour. Questions regarding SNS patterns and behaviours included questions like:

- Do you use acronyms or abbreviations whilst texting?
- Are you aware of any SNS?
- Are you a current subscriber of a SNS?
- Which SNS do you belong to?
- From what platform do you access a SNS the most?
- When last have you used a SNS?

The final question requested the student's SNS usage patterns. The question had three viable responses: every day, few times a week, and few times a month. The responses to this question were used to select respondents for each group (i.e. one group consisted of students that has never used a SNS or used SNS a few times a month; students that used SNS a few times a week; and students that used SNS every day).

3.3.2 Aqua spelling computerised spelling test

The second measuring instrument was a computerised spelling test. As previously determined the respondents were divided into three groups according to their SNS usage. The students that were selected were requested to complete the spelling test at the CBT labs in the Informatorium at the University of Pretoria. The name of the spelling test that was used was Aqua Spelling and it is freely available on the World Wide Web at http://www.soletesoftware.com/aquaspelling.

Before the test could be administered, assessing the respondents' level of spelling competency, a list of 50 commonly misspelled words were imported into the spelling test programme (Appendix C) by recording the words (sounds) via a microphone, which was then saved and used as the spelling test's lexicon. Aqua spelling was used to test the

respondent's spelling capability. The test required respondents to enter their name and surname to start, and once that was entered into the program, the test started. The test would start by playing a recording of one of the words imported (the program was set to randomize the words) and compared the spelling of the word entered against the correct spelling for that word. After the test had been completed it confirmed the number of correct and incorrect spelled words. The amount of correctly spelled words was later used as the respondent's test score.

3.4 Research design and process

A quantitative research approach was employed to test the hypotheses as set out in Chapter 2. The research design, as illustrated in Figure 10, consisted out of one independent variable and two dependent variables, with the independent variable consisting of three levels. The design used was a *single-factor, multi-level between subjects design,* otherwise known as a *one-way ANOVA*. A one-way ANOVA design requires one independent variable, one dependent variable, and a sample of three or more groups (Aitken & Cardinal, 2006). The independent variable was the respondent's SNS usage and the dependent variables academic performance (year to date averages of the respondent's academic scores) and the respondent's spelling test scores (obtained from the spelling test).

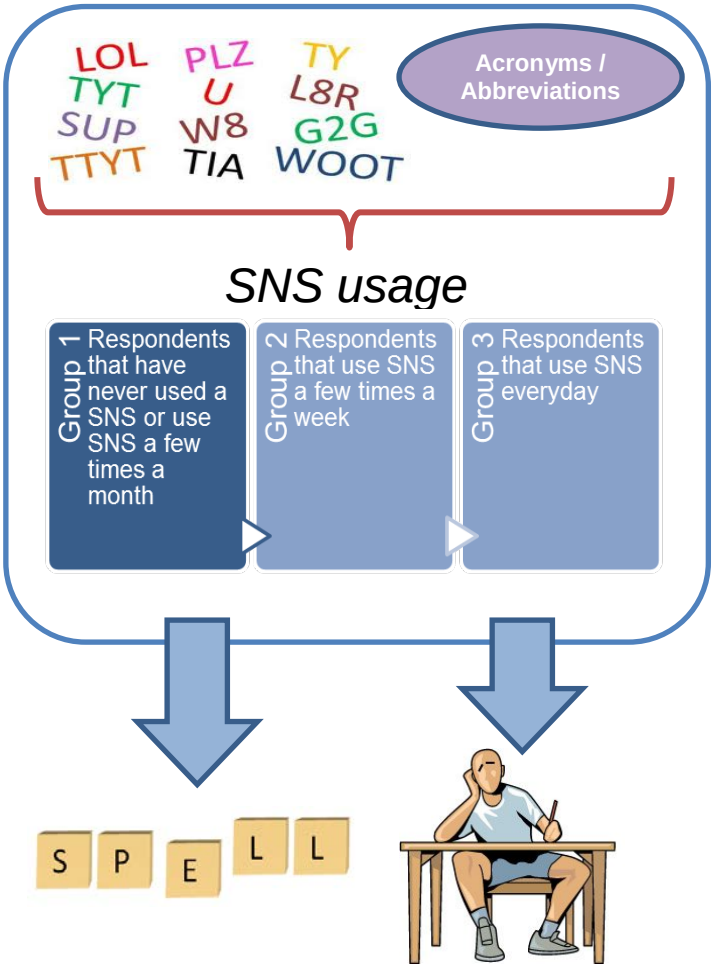


Figure 10. Research design conceptualization

The three group's spelling test mean scores (number of correct responses out of 50 words) were compared to each other and investigated for significant relationships. The researcher used 100 commonly misspelled words as the data set, and randomly selected 50 words for each participant to be tested on. The words have been identified by http://www.yourdictionairy.com as commonly misspelled words. The list of commonly misspelled words was obtained by completing a spelling test amongst elementary schools (elementary school most commonly misspelled words, n.d.)

3.4.1 Idea generating phase

The idea was generated from the researcher's personal curiosity into the various behavioural effects of social networking sites. A phenomenon that occurred was the frequent use of incorrectly spelled words (chat lingo) in SNS as well as the cross platform use of chat lingo in school assignments, homework, tests etc. The observation of this behaviour across friends and family along with the available literature regarding chat lingo sparked the interest for this research.

3.4.2 Problem definition phase

The research question, which was derived from the problem statement, was carefully formulated following the literature review. The literature review focussed on the following aspects:

- Various media types and its use by the youth;
- The internet's effect on behavioural patterns of the youth;
- A history of social networking sites and its behavioural effects;
- Social networking sites platforms used on mobile phones and the development of chat lingo; and
- The development stages of learning to spell words correctly.

3.4.3 Procedures design phase

- The main objective of the recruitment questionnaire was to identify the group that each participant qualified for. The other advantage of using the recruitment questionnaire was that all of the demographical data and SNS associated behaviours could be gathered before the actual spelling test.

- The Aqua spelling which was used to complete the interviews did not require any altercations and could be used as is.

- The procedures used to complete this study successfully were based on the criteria as set out by Sekaran and Bougie (2010):

    - The interviewer greeted the respondents and ensured that the stationery was sufficient; the room was well lit and air-conditioned.

3.4.4 Data collection phase

3.4.4.1 Administering the questionnaire

Students were approached during a scheduled psychology class lecture and kindly requested to complete the questionnaires handed to them. The appropriate stationery was provided to respondents prior to handing out the consent forms (Appendix A) and questionnaires. Students were instructed to complete the informed consent form prior to completing the questionnaire. After the questionnaires were successfully completed the informed consent forms and questionnaires were collected from the respondents.

3.4.4.2 Conducting the experiment

Once the recruitment questionnaires were captured and the groups identified, the respondents were telephonically contacted and requested to complete the test at the Informatorium. The test took place during the day, thus not interfering with any scheduled classes or tests. The spelling program was preinstalled on 16 computers in the CBT labs of the University of Pretoria prior to the test. The test locale was open from 8h00 – 17h00 allowing respondents to complete the test at a time convenient to them. Respondents came to the Informatorium throughout the day to complete the test. As soon as a participant arrived, he/she was briefed, asked to complete the attendance register and

allocated to a PC. The researcher monitored the respondents and tended to all questions and requests. Respondents were instructed not to ask the test taker sitting next to them for assistance (the spelling test generated the words at random for every participant). After each test the respondents were allowed to ask questions or raise concerns. Once the test was finished the data was extracted from the spelling test programme and imported into a database. The data were matched with the recruitment questionnaire responses and entered into SPSS.

3.4.4.3 Ethical considerations

The respondents were informed of their rights and responsibilities as test-takers ahead of the experiment. No participant was forced to complete the experiment against their will and was free to leave the locale at any time they felt necessary. Written consent was obtained through a consent form as mentioned earlier. The researcher was not biased to any language, gender, sex or cultural group. Confidentiality was upheld throughout the study. The respondents were able to request their spelling test results at any time, but were not allowed receive a second opportunity to complete the test. The only manner in which the test could have been re-taken was if due to unforeseen circumstances the test was interrupted or something prevented the respondents from completing the test the first time.

The above mentioned ethics were maintained at all-time throughout the study to ensure that no harm has been done. Official consent was acquired from the dean of students, Prof. M. T. Speckman; the head of the department of psychology, Prof. M. C. Marchetti-Mercer; and head of research psychology, Prof. D. J. F. Maree.

3.4.5 Data capturing phase

The data obtained from the spelling test was saved in Excel. The data in excel was then imported into SPSS 17 (Statistical Package for Social Science). Academic performance data obtained from the University of Pretoria were also entered into SPSS.

3.4.6 Data cleaning phase

SPSS was used to identify missing values, remove outlier scores and exclude incomplete tests. The cleaned data received from the spelling test, recruitment questionnaire and academic records were encoded and prepared for descriptive and inferential statistics (Trochim, 2001).

3.4.7 Analysis phase

Analysis of SNS usage (independent variable) and its effect on the respondent's academic performance (dependent variable) and spelling ability (dependent variable) was tested by means of One-way ANOVA's and Factorial ANOVA's. The data was analysed for internal validity and reliability to show the quality of findings.

3.5 Conclusion

The aim of this chapter was to introduce the various methodologies that were used to successfully complete the current study. The chapter outlined the sampling method, the measuring instruments, the test administration processes and test completion procedures that were followed and the ethical requirements that were applied.

The research design's structure delivered in this chapter was adopted by Sekaran and Bougie (2010) and applied to meet the objectives of this study. The next chapter analyses the data and presents the findings that were obtained.

CHAPTER 4

RESULTS

4.1 Overview

This chapter takes an in depth view at the sample, the statistical analysis completed based on the data obtained and the findings generated from these analyses. A recruitment questionnaire, specifically created for this study, was used to identify and select the appropriate respondents. Students that fulfilled the screening criteria, obtained in the questionnaire, were selected and requested to complete a spelling test, which tested the respondents spelling skills.

Each variable's analysis section contain a descriptive statistics table, other appropriate analysis performed and a discussion of the findings. The variables that indicated significant relationships/correlations with other variables are also discussed more extensively, defining the various statistical processes used and the results delivered from them.

4.2 Sample description

Students that were enrolled in their 1st year of studying Psychology (2010) at the University of Pretoria were asked to complete the recruitment questionnaire during a psychology class; a total of four classes were approached of which two classes were English and the other two Afrikaans, students were given the opportunity to complete the questionnaire during the class after the researcher explained the focus and aim of this study and handed out the questionnaires. As stated in the methodology chapter, the questionnaire's main purpose was to recruit a total of 90 respondents. After collecting the recruitment scripts, a

total of 107 respondents passed the screening process, of which 6 cases were disqualified afterwards due to a lack of information provided. This equated to 101 students eligible for completion of the spelling test.

The 101 students that completed the recruitment questionnaire comprised of 60 students that were eligible for group three, 23 students for group two and 18 students for group one. Only 71 students were asked to complete the test, many respondents did not pitch and the study ended up with 18 respondents belonging to *group 3*, 18 respondents belonging to *group 2* and 20 respondents belonging to *group 1*, this equated to a total of 56 respondents that completed the spelling test. In order to understand the data better, the sample's descriptive statistics and demographics are discussed below.

4.2.1 Demographic distribution

The majority of respondents were 19 years old (48.2%), female students (77%), Black (62.5%) and speaking an African language (48.2%). Overall, respondents were between the ages of 18 and 23 ($\bar{x}$=19.59), 77% female and 23% male, 37.5% Caucasian and 62.5% Black, 48.2% speaking African languages, 44.6% speaking English and only 5.4% speaking Afrikaans.

Below are the demographical data obtained from the analyses.

Table 4.1: Demographics: Age

N	Valid	56
	Missing	0
Mean		19.59
Std. Error of Mean		.155
Median		19.00
Mode		19
Minimum		18
Maximum		23

Age		**Frequency**	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	18	6	10.7	10.7	10.7
	19	27	48.2	48.2	58.9
	20	14	25.0	25.0	83.9
	21	3	5.4	5.4	89.3
	22	5	8.9	8.9	98.2
	23	1	1.8	1.8	100.0
	Total	56	100.0	100.0	

Table 4.2: Demographics: Gender

Gender		**Frequency**	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Male	13	23.2	23.2	23.2
	Female	43	76.8	76.8	100.0
	Total	56	100.0	100.0	

Table 4.3: Demographics: Degree studying

Degree studying		**Frequency**	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	B ed	2	3.6	3.6	3.6
	B Social work	7	12.5	12.5	16.1
	B.Sw	2	3.6	3.6	19.6
	BA	31	55.4	55.4	75.0
	BA_Occ_Therapy	2	3.6	3.6	78.6
	BAdmin	1	1.8	1.8	80.4
	BCur	2	3.6	3.6	83.9
	BIS	1	1.8	1.8	85.7
	Bsc	6	10.7	10.7	96.4
	BTM	1	1.8	1.8	98.2
	LLB	1	1.8	1.8	100.0
	Total	56	100.0	100.0	

Almost half of the respondents study a BA degree (55.4%); other main study areas included B Social Work (12.5%) and BSc (10.7%).

Table 4.4: Demographics: Race

Race		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	35	62.5	62.5	62.5
	White	21	37.5	37.5	100.0
	Total	56	100.0	100.0	

Table 4.5: Demographics: Home language

Home language		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	25	44.6	44.6	44.6
	Afrikaans	3	5.4	5.4	50.0
	African Languages	27	48.2	48.2	98.2
	Other	1	1.8	1.8	100.0
	Total	56	100.0	100.0	

4.2.2 Online behaviour

A total of 92.9% of respondents are current users of social networking sites. The majority of respondents (78.6%) use acronyms and abbreviations whilst communicating online with friends or family. Respondents mostly use their mobile phone (80.4%) to access their SNS. Respondents generally use two or more social networking sites (46.4%) of which Facebook (50%) and MXit (39.3%) are most popular.

Table 4.6: Current vs. non-current users of SNS

Current user of SNS		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	52	92.9	92.9	92.9
	No	4	7.1	7.1	100.0
	Total	56	100.0	100.0	

Table 4.7: SNS Access

SNS Accessed through		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Computer	10	17.9	19.6	19.6
	Mobile Phone	41	73.2	80.4	100.0
	Total	51	91.1	100.0	
Missing		5	8.9		
Total		56	100.0		

Table 4.8: Use acronyms and abbreviations

Use of acronyms and abbreviations		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	44	78.6	78.6	78.6
	No	12	21.4	21.4	100.0
	Total	56	100.0	100.0	

The mean number of SNS used is 2.61 with a standard deviation of 0.2. The number of SNS used ranges from 1 to 7 of which the mode is 2 (Table 4.9)

Table 4.9: Number of SNS used

N		
	Valid	51
	Missing	5
Mean		2.61
Std. Error of Mean		.200
Median		2.00
Mode		2
Minimum		1
Maximum		7

Number of SNS used		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	14.3	15.7	15.7
	2	26	46.4	51.0	66.7
	3	5	8.9	9.8	76.5
	4	6	10.7	11.8	88.2
	5	3	5.4	5.9	94.1
	6	2	3.6	3.9	98.0
	7	1	1.8	2.0	100.0
	Total	51	91.1	100.0	
Missing		5	8.9		
Total		56	100.0		

Table 4.10: SNS used

SNS used		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Facebook	28	50.0	54.9	54.9
	Twitter	1	1.8	2.0	56.9
	Mxit	22	39.3	43.1	100.0
	Total	51	91.1	100.0	
Missing		5	8.9		
Total		56	100.0		

4.2.3 Respondent's SNS usage across demographics and their online behaviour

Looking at the demographical data and online behaviours across the three groups, some differences were identified.

Table 4.11: Descriptive statistics: SNS Usage split by gender

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Gender	Male	4	20.0%	4	22.2%	5	27.8%	13	23.2%
	Female	16	80.0%	14	77.8%	13	72.2%	43	76.8%
	Total	20	100.0%	18	100.0%	18	100.0%	56	100.0%

*No difference in gender were found across the SNS usage groups

Table 4.12: Descriptive statistics: SNS Usage split by respondents having / not having EOT as a subject

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
EOT	Yes	14	70.0%	13	72.2%	5	29.4%	32	58.2%
	No	6	30.0%	5	27.8%	12	70.6%	23	41.8%
	Total	20	100.0%	18	100.0%	17	100.0%	55	100.0%

If a respondent had EOT as a subject it meant that he/she failed their academic literacy test at the start of their studies, i.e. if a respondent did not have EOT it meant that they were academically more literate than those that had EOT. The results indicate that a large proportion of respondents that use SNS a few times a month did not have EOT as a subject (79.6%).

Table 4.13: Descriptive statistics: SNS Usage split by home language

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Home language	English	8	40.0%	3	16.7%	14	77.8%	25	44.6%
	Afrikaans	2	10.0%	1	5.6%	0	0.0%	3	5.4%
	African Languages	10	50.0%	14	77.8%	3	16.7%	27	48.2%
	Other	0	0.0%	0	0.0%	1	5.6%	1	1.8%
	Total	20	100.0%	18	100.0%	18	100.0%	56	100.0%

Respondents that speak an African language at home (50%) were proportionally more every day users of SNS whereas English respondents were less frequent users of SNS (77.8%).

Table 4.14: Descriptive statistics: SNS Usage across race

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Race	Black	13	65.0%	15	83.3%	7	38.9%	35	62.5%
	White	7	35.0%	3	16.7%	11	61.1%	21	37.5%
	Coloured	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Asian	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Total	20	100.0%	18	100.0%	18	100.0%	56	100.0%

Majority of white respondents (61.1%) use SNS a few times a month whereas the majority of Black respondents use SNS every day (65%).

Table 4.15: Descriptive statistics: SNS Usage across age

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Age	18	1	5.0%	2	11.1%	3	16.7%	6	10.7%
	19	11	55.0%	8	44.4%	8	44.4%	27	48.2%
	20	6	30.0%	3	16.7%	5	27.8%	14	25.0%
	21	1	5.0%	2	11.1%	0	0.0%	3	5.4%
	22	1	5.0%	3	16.7%	1	5.6%	5	8.9%
	23	0	0.0%	0	0.0%	1	5.6%	1	1.8%
	Total	20	100.0%	18	100.0%	18	100.0%	56	100.0%

*No difference in age was found across the SNS usage groups.

Table 4.16: Descriptive statistics: SNS Usage and number of SNS sites used

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Number of SNS used	1	2	10.0%	4	25.0%	2	13.3%	8	15.7%
	2	9	45.0%	9	56.3%	8	53.3%	26	51.0%
	3	1	5.0%	2	12.5%	2	13.3%	5	9.8%
	4	4	20.0%	1	6.3%	1	6.7%	6	11.8%
	5	2	10.0%	0	0.0%	1	6.7%	3	5.9%
	6	1	5.0%	0	0.0%	1	6.7%	2	3.9%
	7	1	5.0%	0	0.0%	0	0.0%	1	2.0%
	Total	20	100.0%	16	100.0%	15	100.0%	51	100.0%

Respondents that use SNS every day were spread more in terms of the number of SNS that they use, whereas the other groups did not.

Table 4.17: Descriptive statistics: SNS Usage and SNS platforms

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
SNS Used most often	Facebook	11	55.0%	6	37.5%	11	73.3%	28	54.9%
	Twitter	1	5.0%	0	0.0%	0	0.0%	1	2.0%
	Mxit	8	40.0%	10	62.5%	4	26.7%	22	43.1%
	MySpace	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Bebo	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Friendster	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Mig33	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	The Grid	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Orkut	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Hi 5	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%

MXit users (62.5%) were mostly used by respondents that use SNS a few times a week. Respondents that use SNS a few times a month reported Facebook (73.3%) as the SNS that they use most.

Table 4.18: Descriptive statistics: SNS Usage and SNS access channels

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
How do you access SNS?	Computer	3	15.0%	2	12.5%	5	33.3%	10	19.6%
	Mobile Phone	17	85.0%	14	87.5%	10	66.7%	41	80.4%
	Xbox	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Total	20	100.0%	16	100.0%	15	100.0%	51	100.0%

Computers (PCs) are the least preferred SNS access channel (19.6%), whereas mobile phones are the preferred channel (80.4%).

Table 4.19: Descriptive statistics: SNS Usage and use of acronyms and / or abbreviations

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Do you use acronyms / abbreviations?	Yes	20	100.0%	18	100.0%	6	33.3%	44	78.6%
	No	0	0.0%	0	0.0%	12	66.7%	12	21.4%
	Total	20	100.0%	18	100.0%	18	100.0%	56	100.0%

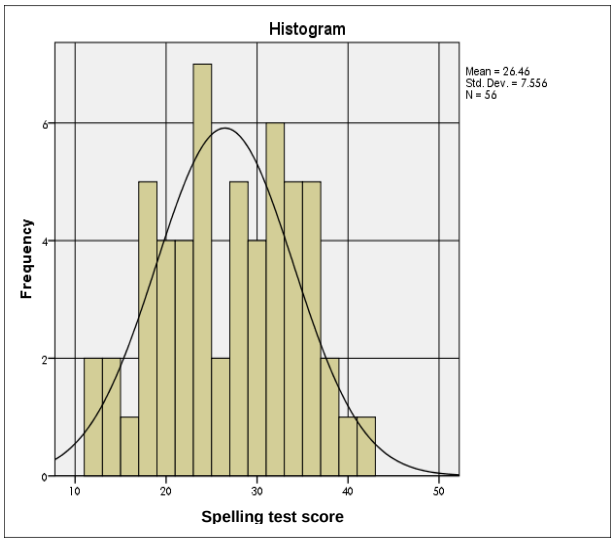
Interestingly, the only respondents that do not use acronyms and abbreviations were respondents that use SNS a few times month.

4.2.4 Spelling test and academic scores (DVs)

Table 4.20: Descriptive statistics: Spelling test and academic achievement scores

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Spelling Test Score	56	12	41	26.46	7.556	57.090
Academic Performance	55	32%	77%	57.46	10.118	102.378
Valid N (list wise)	55					

The lowest reported *spelling test score* was 12 and the highest 41 out of 50. The sample had a mean score of 26.4, a standard deviation of 7.55 and a variance of 57.09. The respondents' *academic performances* i.e. year marks across all of their subjects indicate a year mark as low as 32% whereas the best year mark is 77%. The mean score for the respondent's year mark was 57.4 (57.4%), the standard deviation 10.11 and a variance of 102.37. Below are the distribution graphs of each dependent variable as well as the tests for skewness and kurtosis.



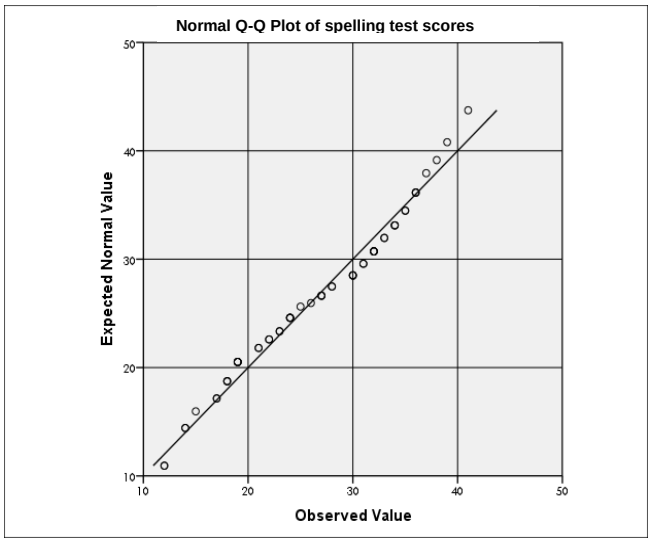


Figure 11. Distribution of spelling test scores and Q-Q plot

The above graphs show the distribution of scores with a skewness of -.122 and a flat Kurtosis of -.972. The results indicate a distribution that is close to being a symmetrical distribution. It is expected that a larger sample would have yielded better skewness and kurtosis scores.

Table 4.21: Test for skewness and kurtosis of spelling test scores

N	Valid	56
	Missing	0
Mean		26.46
Median		27.00
Mode		24
Skewness		-.122
Std. Error of Skewness		.319
Kurtosis		-.972
Std. Error of Kurtosis		.628

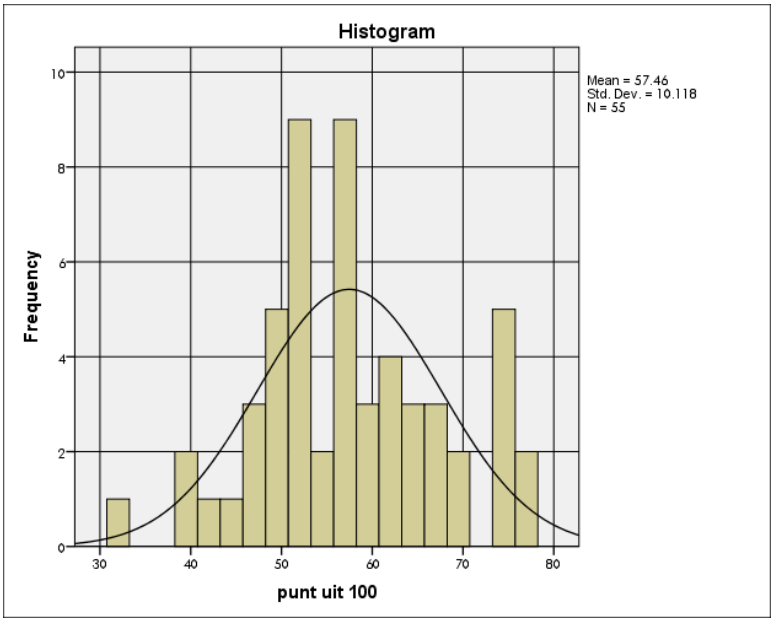


Figure 12. Distribution of academic achievement scores

Distribution, skewness and kurtosis tests on academic achievement scores, although similar to spelling test scores are slightly better distributed. A skewness of .078 and a kurtosis of -.158 show findings very close to symmetrical results indicating positive results in terms of academic achievement distribution scores.

Table 4.22: Test for skewness and kurtosis of academic achievement scores

N	Valid	55
	Missing	1
Mean		57.46
Median		57.00
Mode		50a
Skewness		.078
Std. Error of Skewness		.322
Kurtosis		-.158
Std. Error of Kurtosis		.634

4.3 Statistical analyses

The statistical analyses aimed to establish a statistical significant relationship between variables “time students spend social networking online – SNS usage (IV)” and “spelling

capabilities – Spelling test scores (DV)" and "academic achievement – year marks (DV)". The statistical analyses was carried out to test the alternative hypothesis which claim that frequent SNS users will perform worse in their spelling test compared to non-frequents SNS users.

An analysis of variance (ANOVA), Pearson's correlation and cross tabulations were conducted to test the hypotheses and whether the respondent's demographics, gender and age distributions and social networking sites behaviour had a significant influence on their test scores or academic achievement.

4.4 Results

Test scores obtained from the spelling test, recruitment questionnaire and academic records were used to test for significant differences and correlations amongst variables.

4.4.1 Social networking site usage (IV) and spelling test scores (DV)

4.4.1.1 Summary of findings

Table 4.23: One-way ANOVA: SNS usage and spelling test scores

One-way ANOVA: SNS usage and spelling test scores

SNS Usage	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	244.484	2	122.242	2.238	.117
Within Groups	2895.444	53	54.631		
Total	3139.929	55			

The results from Table 4.23 indicate that there is no significant difference between social networking site usage and spelling scores (p=.05 >.117) also evident in Table 4.24. The null hypothesis is therefore accepted and the alternative hypothesis rejected. Due to the

small sample sizes used it is possible that the findings may have been limited, by using larger sample sizes the margin of error would possibly decrease allowing results to be more accurate.

Table 4.24: Cross tabulation: SNS usage and spelling test scores

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Spelling test scores	12	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	14	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	15	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	17	2	10.0%	0	0.0%	0	0.0%	2	3.6%
	18	0	0.0%	2	11.1%	1	5.6%	3	5.4%
	19	1	5.0%	2	11.1%	1	5.6%	4	7.1%
	21	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	22	0	0.0%	1	5.6%	1	5.6%	2	3.6%
	23	0	0.0%	1	5.6%	1	5.6%	2	3.6%
	24	3	15.0%	2	11.1%	0	0.0%	5	8.9%
	25	0	0.0%	0	0.0%	1	5.6%	1	1.8%
	26	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	27	1	5.0%	0	0.0%	2	11.1%	3	5.4%
	28	0	0.0%	1	5.6%	1	5.6%	2	3.6%
	30	3	15.0%	0	0.0%	1	5.6%	4	7.1%
	31	0	0.0%	1	5.6%	1	5.6%	2	3.6%
	32	1	5.0%	1	5.6%	2	11.1%	4	7.1%
	33	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	34	1	5.0%	0	0.0%	2	11.1%	3	5.4%
	35	1	5.0%	0	0.0%	1	5.6%	2	3.6%
	36	1	5.0%	1	5.6%	1	5.6%	3	5.4%
	37	0	0.0%	0	0.0%	1	5.6%	1	1.8%
	38	0	0.0%	1	5.6%	0	0.0%	1	1.8%
	39	0	0.0%	1	5.6%	0	0.0%	1	1.8%
	41	0	0.0%	0	0.0%	1	5.6%	1	1.8%
	Total	20	100.0%	18	100.0%	18	100.0%	56	100.0%

4.4.2 Social networking site usage (IV) and student's year mark (DV)

4.4.2.1 Summary of findings

The alternative hypothesis states that student's that use SNS more often will have lower test scores than students that use SNS less often. Prior to discussing this further, it is essential to first understand what a relationship like this would mean. If the research findings support such a relationship between student's SNS usage and their year marks it would mean that SNS such as Facebook, Twitter, and MXit etc. have some sort of impact on a student's academic performance. Several confounding variables exist such as an active social life, low class attendance; lack of studying etc. was not measured and controlled. Due to these limitations it is not possible to identify a causal relationship between SNS usage and academic performance. Only correlational analysis will yield any usable findings. Variables may be associated without having a causal relationship. However, just because a correlation has limited value as a causative inference doesn't mean that correlation studies are less important (Sekaran and Bougie, 2010). The proceeding analysis will hence be interpreted on this basis.

An analysis of variance (One-way ANOVA) was again carried out to establish whether the frequency of a student's online social networking behaviour affects their academic achievement (average score for all subjects). The analysis delivered the following results.

Table 4.25: One-way ANOVA: SNS usage and academic achievement scores

One-way ANOVA: SNS usage and academic achievement scores

Academic achievement	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	775.018	2	387.509	4.239	.020
Within Groups	4753.409	52	91.412		
Total	5528.427	54			

Descriptive Statistics: SNS usage and academic results

Academic performance	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Every day	20	53.20	8.520	1.905	49.21	57.19	32	69
Few times a week	18	57.56	9.262	2.183	52.95	62.16	40	75
Few times a month	17	62.38	10.942	2.654	56.76	68.01	40	77
Total	55	57.46	10.118	1.364	54.73	60.20	32	77

Multiple Comparisons

Dependent Variable: Academic achievement

	(I) SNS usage	(J) SNS usage	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Scheffe	Every day	Few times a week	-4.356	3.106	.381	-12.18	3.47
		Few times a month	-9.182*	3.154	.020	-17.13	-1.23
	Few times a week	Every day	4.356	3.106	.381	-3.47	12.18
		Few times a month	-4.827	3.234	.336	-12.98	3.32
	Few times a month	Every day	9.182*	3.154	.020	1.23	17.13
		Few times a week	4.827	3.234	.336	-3.32	12.98
Games-Howell	Every day	Few times a week	-4.356	2.898	.302	-11.45	2.74
		Few times a month	-9.182*	3.267	.023	-17.24	-1.13
	Few times a week	Every day	4.356	2.898	.302	-2.74	11.45
		Few times a month	-4.827	3.436	.351	-13.28	3.63
	Few times a month	Every day	9.182*	3.267	.023	1.13	17.24
		Few times a week	4.827	3.436	.351	-3.63	13.28

*. The mean difference is significant at the 0.05 level.

The ANOVA (Table 4.25) indicate that there is a significant difference between a student's academic achievement and their social networking site usage (.020 ($F(2,52)=4.239$, $p<.05$)). Students that use SNS every day and students that use SNS a few times a month performed significantly different in terms of academic achievement. Post hoc tests reveal a significant difference between frequent SNS users (uses SNS every day) and infrequent users of SNS (use SNS a few times a month) and their academic performance (p=.05

>.020). It is therefore just to state that student's that use SNS more often are more likely to have a poor year mark and student's that use SNS less often which will be more likely to have a good year mark (Table 4.26).

Table 4.26: Cross tabulation: SNS usage and academic achievement scores

		SNS Usage							
		Every day		Few times a week		Few times a month		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Academic achievement i.e. year marks	32	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	40	0	0.0%	1	5.6%	1	5.9%	2	3.6%
	41	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	45	0	0.0%	1	5.6%	0	0.0%	1	1.8%
	46	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	47	2	10.0%	0	0.0%	0	0.0%	2	3.6%
	49	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	50	0	0.0%	2	11.1%	2	11.8%	4	7.3%
	51	1	5.0%	1	5.6%	1	5.9%	3	5.5%
	52	2	10.0%	0	0.0%	0	0.0%	2	3.6%
	53	2	10.0%	1	5.6%	1	5.9%	4	7.3%
	55	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	56	0	0.0%	2	11.1%	0	0.0%	2	3.6%
	57	2	10.0%	2	11.1%	0	0.0%	4	7.3%
	58	2	10.0%	0	0.0%	1	5.9%	3	5.5%
	59	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	60	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	61	0	0.0%	1	5.6%	0	0.0%	1	1.8%
	62	0	0.0%	0	0.0%	3	17.6%	3	5.5%
	64	0	0.0%	2	11.1%	1	5.9%	3	5.5%
	66	0	0.0%	0	0.0%	2	11.8%	2	3.6%
	68	1	5.0%	0	0.0%	0	0.0%	1	1.8%
	69	1	5.0%	1	5.6%	0	0.0%	2	3.6%
	74	0	0.0%	1	5.6%	2	11.8%	3	5.5%
	75	0	0.0%	1	5.6%	1	5.9%	2	3.6%
	77	0	0.0%	0	0.0%	1	5.9%	1	1.8%
	77	0	0.0%	0	0.0%	1	5.9%	1	1.8%
	Total	20	100.0%	18	100.0%	17	100.0%	55	100.0%

4.4.2.2 Demographic differences

This section aims to identify significant relationships between variables that might affect a student's academic performance. This will provide a better understanding of the results.

Table 4.27: Descriptive statistics: Academic achievement split by gender, race and home language

Descriptive Statistics

Dependent Variable: Academic achievement

Gender	Race	Home Language	Mean	Std. Deviation	N
Male	Black	English	57.00	1.414	2
		African Languages	55.00	10.178	6
		Total	55.50	8.668	8
	White	English	60.67	2.309	3
		Afrikaans	32.00	.	1
		Total	53.50	14.457	4
	Total	English	59.20	2.683	5
		Afrikaans	32.00	.	1
		African Languages	55.00	10.178	6
		Total	54.83	10.285	12
Female	Black	English	66.40	8.081	5
		African Languages	53.76	6.625	21
		Asian	74.00	.	1
		Total	56.85	8.964	27
	White	English	58.89	11.553	14
		Afrikaans	71.50	4.950	2
		Total	60.47	11.655	16
	Total	English	60.87	11.065	19
		Afrikaans	71.50	4.950	2
		African Languages	53.76	6.625	21
		Asian	74.00	.	1
		Total	58.20	10.069	43
Total	Black	English	63.71	8.056	7
		African Languages	54.04	7.346	27
		Asian	74.00	.	1
		Total	56.54	8.790	35
	White	English	59.21	10.469	17
		Afrikaans	58.33	23.072	3
		Total	59.08	12.183	20
	Total	English	60.52	9.877	24
		Afrikaans	58.33	23.072	3
		African Languages	54.04	7.346	27
		Asian	74.00	.	1
		Total	57.46	10.118	55

Descriptive statistical analysis in Table 4.27 shows a difference in terms of respondent's year marks, home language and race. Respondents with English as their home language

had a high mean score (n=60.52; *SD*=9.877) and respondents with Afrikaans as their home language reported a lower mean score (n=58.33; *SD*=23.072). Black respondents had a mean score of 56.54 (*SD*=8.790) and white respondents a mean score of 59.08 (*SD*=12.183). Female respondents had a mean score of 58.20 (*SD*=10.069) and male respondents a mean score of 54.83 (*SD*=10.285). *White* female respondents with Afrikaans as their home language had the best year marks with a mean score of 71.50 (*SD*=4.950). Different to female respondents, *white* male respondents with English as their home language performed academically superior with a mean score of 60.67 (*SD*=2.309). A factorial ANOVA of respondent's year marks across race, gender and home language groups indicate the following.

Table 4.28: Factorial ANOVA: Academic achievement across gender and home language

Tests of Between-Subjects Effects

Dependent Variable: Year mark

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1596.881[a]	5	319.376	4.197	.003
Intercept	56150.528	1	56150.528	737.805	.000
Gender	810.624	1	810.624	10.651	.002
Home Language	341.380	2	170.690	2.243	.117
Gender * Home Language	978.950	2	489.475	6.432	.003
Error	3653.031	48	76.105		
Total	181666.250	54			
Corrected Total	5249.912	53			

a. R Squared = .304 (Adjusted R Squared = .232)

It is indicated in Table 4.28 that there are two significant interactions amongst variables. Significant differences were found between student's gender and their academic achievement scores (.001 ($F(1,55)=11.429$, $p<.05$)) as well as a combination of student's gender and home language on their academic achievement (.003 ($F(2,55)=6.829$, $p<.05$)). Female respondents (n=58.20; *SD*=10.069) are therefore inclined to perform academically better than male respondents (n=54.83; *SD*=10.285). In order to clarify the effect of the interaction between gender and home language on a student's academic performance the sample was split into two groups (i.e. male and female). A one - way ANOVA of respondent's academic performance split by gender reported the following output.

Table 4.29: One - way ANOVA: Effect of home language on males

Descriptives[a]

Academic performances of male respondents

Gender		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Male	English	5	59.20	2.683	1.200	55.87	62.53	56	62
	African Languages	6	55.00	10.178	4.155	44.32	65.68	47	74
	Total	11	56.91	7.713	2.326	51.73	62.09	47	74

a. Gender = Male

ANOVA[a]

Academic achievement

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	616.867	2	308.433	5.077	.033
Within Groups	546.800	9	60.756		
Total	1163.667	11			

a. Gender = Male

It is indicated in Table 4.29 that the respondent's home language had a significant effect on male respondent's academic achievement (.033 ($F(2,11)=5.077$, $p<.05$). Male students that are English (n=59.20; *SD*=2.683) will therefore be inclined to perform academically better than African language speaking (n=55.00; *SD*=10.178) students.

Table 4.30: One - way ANOVA: Effect of home language on female responses

Descriptives[a]

Academic performances of female respondents

Gender		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Female	English	19	60.87	11.065	2.539	55.54	66.20	40	77
	Afrikaans	2	71.50	4.950	3.500	27.03	115.97	68	75
	African Languages	21	53.76	6.625	1.446	50.75	56.78	40	69
	Total	42	57.82	9.881	1.525	54.74	60.90	40	77

a. Gender = Female

ANOVA[a]

Academic achievement

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1152.339	3	384.113	4.823	.006
Within Groups	3106.231	39	79.647		
Total	4258.570	42			

a. Gender = Female

It is indicated in Table 4.30 that the effect of respondents home language also had a significant effect on female respondent's year marks (.006 ($F(3,42)=4.823$, $p<.05$).

Female students that are Afrikaans (n=71.50; *SD*=4.950) will therefore be expected to perform academically better than English (n=60.87; *SD*=11.065) or African language speaking (n=53.76; *SD*=6.625) students.

4.4.3 The relationship between variables

It is important to understand the relationships among variables in order to identify effects that they have on other variables. Cross tabulations and Chi-Square tests were carried out to identify such relationships. The results from these analyses are delineated in this section.

a) Home language and EOT

Table 4.31: Cross tabulations: Home language and EOT

			EOT		Total
			Yes (have EOT)	No (do not have EOT)	
Home Language	English	Count	10	14	24
		% within EOT	31.2%	60.9%	43.6%
		% of Total	18.2%	25.5%	43.6%
	Afrikaans	Count	3	0	3
		% within EOT	9.4%	0.0%	5.5%
		% of Total	5.5%	0.0%	5.5%
	African Languages	Count	19	8	27
		% within EOT	59.4%	34.8%	49.1%
		% of Total	34.5%	14.5%	49.1%
	Asian	Count	0	1	1
		% within EOT	0.0%	4.3%	1.8%
		% of Total	0.0%	1.8%	1.8%
Total		Count	32	23	55
		% within EOT	100.0%	100.0%	100.0%
		% of Total	58.2%	41.8%	100.0%

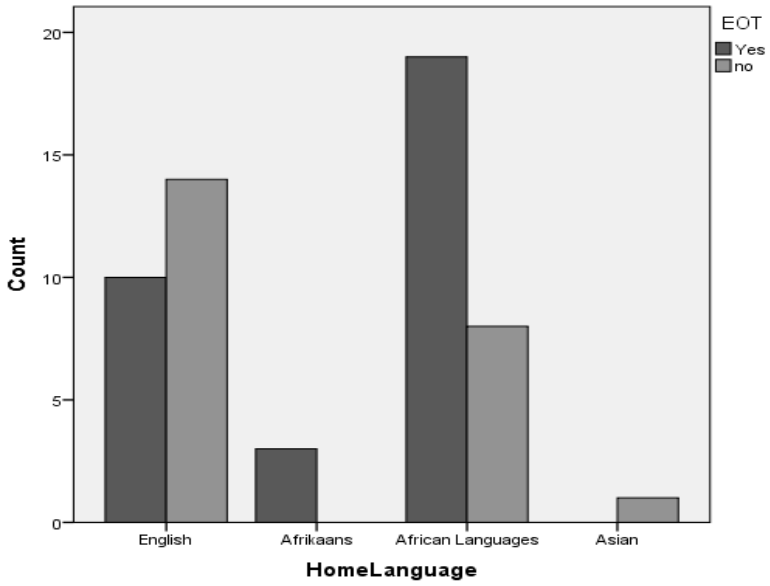


Figure 13. Cross tabulation of home language and EOT

It is reported in Table 4.31 that the 59.4% of respondents that have EOT as a subject speak an African language at home with only 31.2% of the respondents that have EOT as a subject speaking English at home. 60.9% of respondents that do not have EOT as a subject speak English at home with only 34.8% of respondents that no not have EOT as a subject speaking an African language at home. In order to identify if these variables had a significant interaction with one another Chi-Square tests were performed.

Table 4.32: Chi-Square tests: Home language and EOT

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.773[a]	1	.029		
Continuity Correction[b]	3.645	1	.056		
Likelihood Ratio	4.814	1	.028		
Fisher's Exact Test				.053	.028
Linear-by-Linear Association	4.687	1	.030		
N of Valid Cases	55				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.04.
b. Computed only for a 2x2 table

Results obtained from the Chi-Square (Table 4.32) test indicate a significant correlation amongst home language and EOT (r = 4.773, p = .029, *two tailed*). The Pearson Chi-Square test hence confirms that it is expected that the majority of English speaking students will not have EOT as a subject (i.e. passed the academic literacy test at the start of their studies) whereas the majority of African language speaking students will have EOT as a subject (i.e. failed the academic literacy test at the start of their studies).

b) SNS Usage and EOT

Cross tabulations were also performed for student's usage of SNS and whether they have EOT. The analysis findings are displayed in Table 4.33 below.

Table 4.33: Cross tabulations: SNS Usage and EOT

			EOT		Total
			Yes	No	
SNS usage	Every day	Count	14	6	20
		% within EOT	43.8%	26.1%	36.4%
		% of Total	25.5%	10.9%	36.4%
	Few times a week	Count	13	5	18
		% within EOT	40.6%	21.7%	32.7%
		% of Total	23.6%	9.1%	32.7%
	Few times a month	Count	5	12	17
		% within EOT	15.6%	52.2%	30.9%
		% of Total	9.1%	21.8%	30.9%
Total		Count	32	23	55
		% within EOT	100.0%	100.0%	100.0%
		% of Total	58.2%	41.8%	100.0%

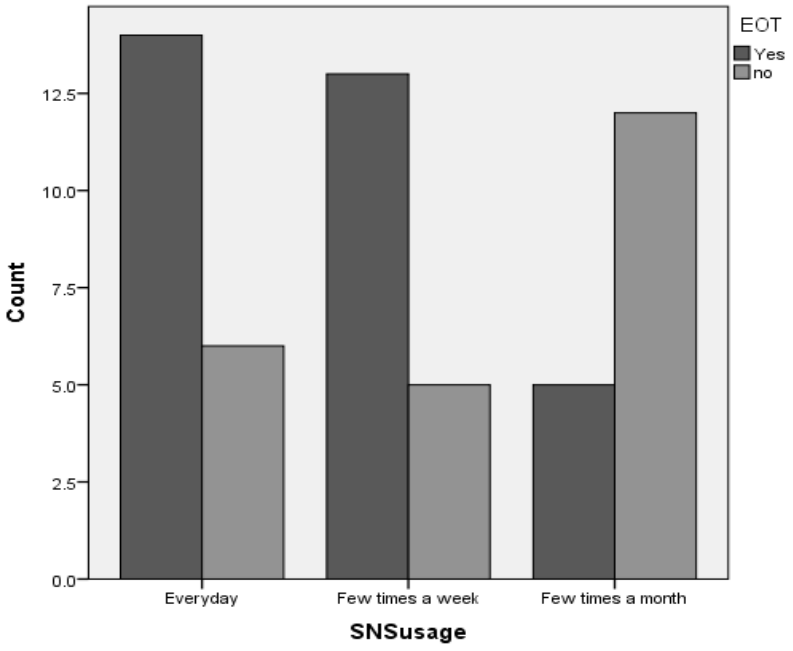


Figure 14. Cross tabulation of SNS usage and EOT

Cross tabulations (Figure 14) indicate respondents that have EOT as a subject mostly uses SNS every day (43.8%) or at least a few times a week (40.6%). Respondents that do not have EOT mostly use SNS a few times a month (52.2%). Chi-Square tests were performed to assess whether a correlation exist amongst these variables.

Table 4.34: Chi-Square tests: SNS Usage and EOT

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.804[a]	1	.179		
Continuity Correction[b]	1.122	1	.290		
Likelihood Ratio	1.841	1	.175		
Fisher's Exact Test				.257	.145
Linear-by-Linear Association	1.771	1	.183		
N of Valid Cases	55				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.36.
b. Computed only for a 2x2 table

The Pearson Chi-Square test (Table 4.34) do not prove a significant correlation amongst variables; SNS usage and EOT (r = 1.804, p = .179, *two tailed*). There is therefore no significant correlation between students that use SNS every day or a few times a week and students that have EOT as a subject or not.

c) SNS access and SNS use most

Table 4.35: Cross tabulations: SNS access and SNS use most

Crosstab

			SNS use Most			Total
			Facebook	Twitter	MXit	
SNS Access	Computer	Count	10	0	0	10
		% within SNS use Most	35.7%	0.0%	0.0%	19.6%
		% of Total	19.6%	0.0%	0.0%	19.6%
	Mobile Phone	Count	18	1	22	41
		% within SNS use Most	64.3%	100.0%	100.0%	80.4%
		% of Total	35.3%	2.0%	43.1%	80.4%
Total		Count	28	1	22	51
		% within SNS use Most	100.0%	100.0%	100.0%	100.0%
		% of Total	54.9%	2.0%	43.1%	100.0%

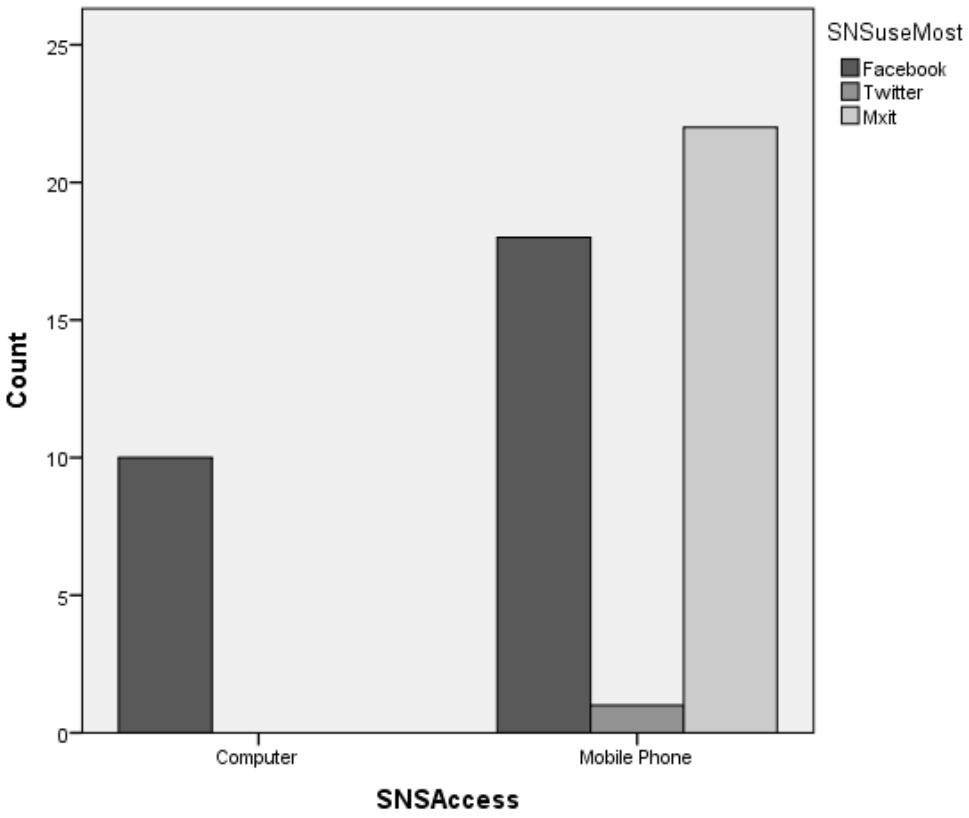


Figure 15. Cross tabulation of SNS access and EOT

Respondents were asked to select the platforms they use to connect to their favourite social networking sites (i.e. Facebook, MXit, Twitter etc.). The results obtained (Table 4.35) indicate that 80.4% of respondents use their mobile phones as the primary device to interact on SNS. Social networking sites such as Twitter and MXit are accessed exclusively from respondent's mobile phones with Facebook being accessed from mobile phones 64.3% of the time. In order to identify whether a correlation exist between respondents that use Facebook from their PC's or mobile phones Chi-Squares tests were performed, however due to small base and sample size per group the results were invalid.

d) Spelling test scores and year marks

In an effort to identify a possible relationship between respondent's spelling test scores and their academic records obtained from the University of Pretoria a Pearson's correlation test were performed.

Table 4.36: Pearson correlation test: respondent's academic performance and spelling test scores

Correlations

		Test Score	Year mark
Spelling test score	Pearson Correlation	1	.415**
	Sig. (2-tailed)		.002
	N	56	55
Academic achievement	Pearson Correlation	.415**	1
	Sig. (2-tailed)	.002	
	N	55	55

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation test (Table 4.36) indicated that a significant correlation exist between the student's spelling test scores and their year mark (r = .42, p = .002, *two tailed*). These findings indicate that there is a relationship between a respondent's spelling ability and their academic performance. Seeing as the correlation is significant at a 2-tailed level it means that student's that have poor spelling capabilities are also likely to perform academically poor, whereas student's that have good spelling capabilities will perform academically better. A student's academic performance at the University of Pretoria is therefore a good indication of the student's spelling capabilities and vice versa.

4.5 Conclusion

Although student's social networking site usage or behaviour do not significantly affect their spelling capabilities there was a significant relationship established between student's social networking site usage and their academic performance at the University of Pretoria. Several other variables were also found to be good indicators of spelling capabilities and academic performance but that will be discussed in more detail in the next chapter along with any other significant relationships that were established.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Overview

The final chapter discusses the impeding role of social networking sites and their various effects on the behaviour of our youth. Specific inferences were made between the research findings obtained, the theoretical framework and current literature. Limitations of this study are indicated and recommendations for future research included. The chapter drew conclusions regarding the study's aim and objectives. The chapter concluded with the researcher's reflection about the results and process.

5.2 Social networking site use and its effects

An overview of the research questions, objectives and hypotheses were answered by stating the research findings and the interpretation thereof using insights gathered from the literature review and theoretical framework.

5.2.1 Research objectives

The primary objective of this research study was to identify a relationship between an individual's use SNS and their spelling capabilities and academic performance. The secondary objective was to examine if the effect of using acronyms and abbreviations during interactions on SNS had an effect on the spelling capabilities and academic performance of students.

The independent variable for this study was *SNS frequency*. SNS frequency consisted of three conditions, namely students that have never used SNS or use SNS a few times a

month; students that use SNS a few times a week; and students that use SNS every day. The dependent variables was the respondent's test score obtained from their spelling test and their academic performance calculated by averaging their subject's marks into one score.

5.2.2 Research questions

This research study sought to answer the following research questions:

- Is there a difference in spelling ability and academic performance between frequent users of SNS and infrequent users of SNS?
- Is there a relationship between using acronyms and abbreviations during the time spent on social networking sites and users spelling ability / academic performance?

5.2.3 Research hypotheses

The following hypotheses were stated:

H_0:$\mu_1 = \mu_2 = \mu_3$: The null hypothesis states that no significant difference exists between individuals spelling test score and respondents that have; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

H_1:$\mu_1 = \mu_2 = \mu_3$: The second null hypothesis state that no significant difference exists between individuals academic performance and respondents that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

H_2: $\mu_1 \neq \mu_2 \neq \mu_3$: The alternative hypothesis states that a significant relationship exist between the individual's spelling test scores and participant that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

H_3: $\mu_1 \neq \mu_2 \neq \mu_3$: The alternative hypothesis states that a significant relationship exist between the individual's academic performance and participant that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

5.2.4 Discussion of research findings

5.2.4.1 Hypothesis *spelling

H_2: $\mu_1 \neq \mu_2 \neq \mu_3$: The alternative hypothesis states that a significant relationship exist between the individual's spelling test scores and participant that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

By interpreting the results from Table 4.23 it is confirmed that there is no significant relationship amongst respondent's social networking site use and their spelling scores (p=.05 >.117). According to these research findings, students that use SNS every day and students that never use SNS or use SNS a few times a month have the same spelling abilities. The alternative hypotheses (H_2:$\mu_1 \neq \mu_2 \neq \mu_3$) is therefore rejected and the null hypothesis accepted (H_0:$\mu_1 = \mu_2 = \mu_3$).

It was however established (Table 4.38) during the analysis that frequent users of SNS are more likely to use acronyms and abbreviations than infrequent users of SNS (r = 8.458, p

= .004, *two tailed*). The findings hence confirm that SNS and acronyms and abbreviations are correlated with each other.

Table 4.37: Cross tabulations: SNS usage and the use of acronyms and abbreviations

Use Acronyms * SNS usage Cross tabulation

Count

		SNS usage			Total
		Every day	Few times a week	Few times a month	
Use Acronyms	Yes	20	18	6	44
	No	0	0	12	12
Total		20	18	18	56

Table 4.38: Chi-Square tests: SNS usage and the use of acronyms and abbreviations

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.485[a]	1	.004		
Continuity Correction[b]	6.621	1	.010		
Likelihood Ratio	12.364	1	.000		
Fisher's Exact Test				.005	.002
Linear-by-Linear Association	8.333	1	.004		
N of Valid Cases	56				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.29.
b. Computed only for a 2x2 table

According to Russell (2012) using “chat lingo” can be considered as another / new language, functioning separate from your current lexicon. Hence, using abbreviation and acronyms can be viewed as learning a new language, different from the traditional languages we know and use. Russell (2012) explains that users of chat lingo that use acronyms and abbreviations as a communication tool can still differentiate between correct English grammar and text messaging grammar. A user of SNS and the frequency of SNS usage is therefore a good indication of a user’s communication language (i.e. using acronyms and abbreviations).

Although the study sought to identify a relationship between SNS and spelling, impeding confounding variables cannot be ignored. For instance an individual may use SNS excessively but still read plenty books. Reading heaps of books can increase one's spelling skills, countering the effects of SNS (using abbreviations and acronyms) (Westwood, 2008). Another scenario can be a lecturer that is strict on spelling in assignments and tests, emphasising the importance of correct spelling regularly (Westwood, 2008). This in turn will encourage students to use correct spelling and grammar in their writing (Stone, 2005). These are just some of the possible confounding variables that could have an impact on the study.

Language has several positive and negative impacts on the social development of children which is why it is essential to assess the effects of SNS on spelling skills . Using the correct language in the appropriate setting must be essential to any person i.e. using chat lingo during an assignment that is unacceptable whereas using chat lingo in a SNS environment that would be acceptable (Russel, 2012). According to the Department of Basic Education:

> "language is a tool for thought and communication. It is a cultural and aesthetic means commonly shared among people to make better sense of the world they live in. Learning to use language effectively enables learners to acquire knowledge, to express their identity, feelings and ideas, to interact with others, and to manage their world. It also provides learners with a rich, powerful and deeply rooted set of images and ideas that can be used to make their world other than it is; better than it is; clearer than it is. It is through language that cultural diversity and social relations are expressed and constructed, and it is through language that such constructions can be altered, broadened and refined." (p. 8, 2011)

As stated already, the social learning theory argues that an individual adapts to his or her surroundings, whether it is selected or not (Bandura, 1997). An appropriate example would be an individual that use abbreviations and acronyms while texting or an individual that choose not to. Social learning theory involves the learning of behaviour to which one is exposed to, be that either positive (use of correctly spelled words) or negative (use of misspelled words) (Bandura, 1997). Peer approval is usually given as a reward to conforming to the group's rules, therefore using the same styles of communicating will provide positive feedback from peers, reinforcing their methods of communicating (either positive or negative behaviour) (Westwood, 2008).

By interpreting the findings in line with Rotter's (1966) theory or *retention*, types of factors such as affordability (less expensive to write short messages), attractiveness, peer pressure (to join friends), and faster to type, may have contributed to the retention of such behaviour. It presumed that although students know correct spelling and grammar they simply do not choose to use it or forget to use correct spelling (i.e. texting friends in chat lingo and forgetting to use the correct spelling of words when texting your boss or typing an email).

5.2.4.2 Hypothesis *academic performance

H_3: $\mu_1 \neq \mu_2 \neq \mu_3$: The alternative hypothesis states that a significant relationship exist between the individual's academic performance and participant that has; never used SNS or use SNS a few times a month; students that use SNS a few times a week; and students that use SNS every day.

Results from Table 4.12 indicate that students' SNS usage significantly affects their academic performance (.020 (F(2,52)= 4.239, p<.05)). Students that use SNS every day hence performed academically poorer than students that have never used SNS or use SNS a few times a month. (p=.05 >.020). The null hypothesis (H_1: $\mu_1 = \mu_2 = \mu_3$) is therefore rejected and the alternative hypothesis (H_3: $\mu_1 \neq \mu_2 \neq \mu_3$) accepted. Caution should however be taken when generalising these findings due to the small base sizes for each category.

The results obtained in this study answers one of the key concerns raised by Brook-Gunn and Donahue (2008); Roberts (2000); Anderson, Huston, Schmitt, Linebarger & Wright (2001) and Huesmann, Moise-Titus & Podolski (2003). A concern that all of these researchers had in common was the possible effects of media technology, in this case more specifically social networking sites, on the youth's academic achievement. Although these researchers only suggested a possible effect of media technology on academic achievement, the findings of this study confirms a more specific effect of media technology, social networking sites. The findings also confirm a hierarchical relationship between academic achievement and social networking sites. Post hoc tests confirmed that high usage of SNS had the greatest effect on academic performance with students performing poorer academically in relation to students that use SNS less or not at all. Although the reasons for students performing academically not well due to excessive use of SNS are still unknown the findings do give us some insight into which media technologies are responsible for, or play a role in the poor academic performance of learners. Students that use chat lingo, acronyms and abbreviations have been confirmed to "cross-contaminate" their academic reports, assignments and tests altering their behaviour and affecting their academic performance (Cook, 2004). By applying the social learning theory's condition called *internal locus of control,* it can be interpreted that users of SNS actively selected to adopt this behaviour and know that their academic

performance is dependent on their personal efforts, it is not dependent on external factors (Bandura, 1997). Students that choose to use SNS excessively know that this activity may be influencing their behaviour and attention. By interrupting your attention to studying or assignments with excessive use of SNS can affect their academic performance in that they spend less time studying for tests or being less aware of their poor language use in assignments or tests. Research showed that South Africans that use SNS spend an average of 2.7 hours per day visiting SNS, with Facebook being visited for an average of 682.3 minutes per session (Friedman, 2012). This means that the average user of Facebook spend little over 7 hours on Facebook every time they use Facebook. Taking into consideration that students require a lot of time to study or to prepare for assignments, and that they spend an average of 7 hours on Facebook every time they use it, it can be assumed that little time remains for academic obligations. Looking at recent statistics indicated in Figure 10, it was also established that SNS users between the ages of 15 and 24 (age of school learners and students) are most active (Friedman, 2012).

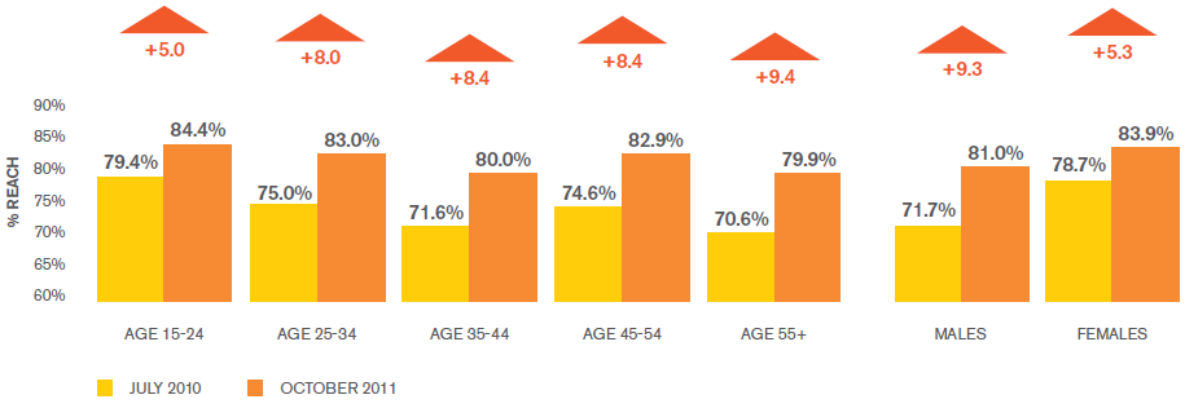


Figure 16. SNS usage split by age groups (Friedman, 2012, p. 61).

Looking at these research statistics it confirmed that users of SNS visit SNS for lengthy periods and fall within the student category (Friedman, 2012). Although various

confounding variables may be responsible for poor academic achievement (i.e. lack of studying due to sports, socialising, poor time management, not understanding the subject matter etc.) it was not the objective of this study to research those variables. Future research studies may want to build on this research, seeing as some type of relationship between SNS and academic performance is existent, and that excessive users of SNS perform academically worse than non-users and use the findings to research other variables that may also be good predictors of poor academic performance.

A hypothesis that was anticipated was the correlation between student's academic performance and their spelling capabilities (r = .42, p = .002, *two tailed*). Seeing as student's spelling capabilities were not affected by SNS use and the fact that their academic performance was, further justifies the need for research on a larger and more representative sample.

5.2.4.3 EOT and spelling

It was established that students that had EOT (Academic Literacy Test) as a subject performed worse in the spelling test than students that did not have EOT as a subject (.004 (F(1,53= 4.272, p<.05). According to the University of Pretoria the EOT is suggested for students with high academic potential but a low level of academic literacy (University of Pretoria, 2013). The University of Pretoria (UP) measures the academic literacy level of each new first-year student so that students can be placed according to their level of literacy in order to not put their academic success at risk (University of Pretoria, 2013). EOT tests are performed in either English or Afrikaans allowing students to perform the test in a language that fits them best. It was expected that performing the spelling test in only English (reason being that it is not possible to create a list in Afrikaans, African languages and English that won't compromise the test difficulty) may have been one of the

confounding variables impacting the research; however after establishing a relationship between EOT and spelling it is evident that performing the test in English only may not have been an issue for students with a different home language. Many of the subjects presented at the University of Pretoria is only available in English, text books are predominantly English and tests and assignments are also performed in English.

5.3 Limitations of the research

Although there are many reasons substantiating the results obtained during this study, one cannot ignore the impact of limitations that this study had (i.e. size of the groups, convenient sample, University students etc.). It is expected that the results will be different if a larger and more representative sample was used and other variables tested like LSM, location etc. The research was mostly limited by financial constraints, scope and sample size. A small sample means that the data should be interpreted with caution and not generalised to other scenarios as the data accuracy may have been hindered by the sample size. The spelling test was only completed on Psychology first year students studying at the University of Pretoria which meant that the findings could not be generalized and was therefore limited in its findings.

5.4 Recommendations for future research

Based on the limitations inherent in this study the following recommendations are suggested:

Convenient sampling	→	Obtain a representative national sample
Small sample	→	Increase the sample size
Questionnaire limitations	→	Include more demographical and SNS questions

It is recommended that future researchers interested in exploring this topic obtain a sample that is representative of the targeted population group and SNS users. An alternative is to recruit respondents in an online domain (i.e. Facebook ads) and implementing an online recruitment survey and online spelling test will probably offer a higher recruiting incidence rate allowing SNS users to complete the spelling test at a time that is convenient will increase the sample size substantially. However, using a different methodology would mean that new confounding variables will be exposed (i.e. some users taking the spelling test may use the internet / dictionary to check correct spelling, friends may work together to spell correctly etc.), uncertainty regarding respondent profiles and accuracy of results. The online methodology will therefore be advised against and the preferred methodology of school surveys suggested. Implementing the spelling test in a school setting in schools around the country would be the appropriate methodology for such research. The LSM of each respondent were also not measured, it is suggested that variables like LSM, location, internet access and type of mobile phone used be measured in future studies.

5.5 Conclusion

Social networking sites have many various impacts on the youth, some being positive and others negative. This research study aimed at exposing some of the effects in an effort to answer many of the questions regarding SNS, use of acronyms and abbreviations and its effects on our youth. Although this study could not confirm both hypotheses (i.e. SNS and spelling) it does not mean that the study was a waste. Future researchers should build on this study and expand on the ideas and methodologies that were used. Technology is ever changing and fast evolving leaving researcher behind struggling to catch up. Technology has many behavioural and social effects, some known and others unknown, that should be

researched. I hope that this research study is of use to future researchers and an inspiration for further research into this area of research.

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Appendix A – Consent form

UNIVERSITY OF PRETORIA

DEPARTMENT OF PSYCHOLOGY

MA Research Psychology

MINI DISSERTATION

CONSENT FORM

FOR

A STUDY ON SOCIAL NETWORKING SITES AND THE EFFECTS ON SPELLING AND ACADEMIC PERFORMANCE

Section A: Participant Information

Title of Study: An explorative investigation into the effect of frequent versus non-frequent usage of social network sites on student's spelling skills.

Researcher: Shaun Fourie

Dear participant,

Purpose of the study
The study aims to investigate a possible relationship between social networking site (sites such as Facebook, Mxit, and MySpace etc.) usage and a possible influence on one's spelling behaviour.

Procedure of study
You will be provided with a questionnaire which you will need to complete and send to the front of the class. Once the data have been captured a selection of students will be contacted and kindly requested to partake in a computerised experiment. The date, time and location will only be disclosed to the respondents that were selected; this information will be disclosed during a telephone conversation.

Risks pertaining to the study
In the study no risks or discomfort are foreseen. All information is treated as confidential and the data will be destroyed should you withdraw.

Benefits of study
The study allows respondents exposure to research methodologies and procedures that students will come across during their undergraduate and postgraduate studies.

Respondent's right during study
Participation is voluntary and you may withdraw from participation in the study at any time and without negative consequences.

Confidentiality of study
All information will be treated, as confidential and all relevant data will be destroyed should the participant withdraw. The data gathered will be used for the purposes of the study and will be in line with the research goal of the study. All data will be stored in electronic form and hardcopies of the transcripts; will be stored at the premises of the University of Pretoria, Department of Psychology, Lynnwood road, Pretoria for a period of 15 years. Only the researcher and his supervisors will have access to this information.

Regards,

Shaun Fourie
Researcher

Prof David Maree
Supervisor

University of Pretoria
PRETORIA 0002
Republic of South Africa

Tel: 012 420 2916
Tel: 012 420 3479

david.maree@up.ac.za
www.up.ac.za/psych

Section B: Participant Informed Consent

In signing this form, I agree that I am willing to participate in the research. I acknowledge that I have read the participant information (Section A). I know that I don't have to answer questions if I feel uncomfortable and I am aware that I may withdraw from the research study at any stage.

Participant Permission:
Name and Surname:
Signed at:
Date:
Signature:

Researcher:
Name and Surname:
Signed at:
Date:
Signature:

Should you have any question, please feel free to contact me on the contact provided below.

Shaun Fourie
Researcher

Prof David Maree
Supervisor

Appendix B – Recruitment questionnaire

UNIVERSITY OF PRETORIA

DEPARTMENT OF PSYCHOLOGY

MA Research Psychology

MINI DISSERTATION

RECRUITMENT QUESTIONNAIRE

FOR

A STUDY ON SOCIAL NETWORKING SITES AND THE EFFECTS ON SPELLING AND ACADEMIC PERFORMANCE

Instructions

Please answer the following questions as truthfully and accurately as possible. Please encircle the correct response with a ○ . Please encircle the number associated with the response, for example

Gender	Male	①
	Female	2

Once your responses have been calculated and analysed some of you will be requested to complete an exercise at the CBT labs in the Informatorium at a date and time still to be announced.

Please fill in your contact details below to allow us to make contact with you if need be.

Telephone number _____

Email address _____

Questions

1.	**Name**	_____	
2.	**Student number**	_____	
3.	**Gender**	Male	1
		Female	2
4.	**Age**	_____	
5.	**Degree**	_____	
6.	**Race**	Black	1
		White	2
		Coloured	3
		Asian	4
		Other	5
7.	**Home Language**	English	1
		Afrikaans	2
		Xhosa	3
		Zulu	4
		Sesotho	5
		Setswane	6
		Swati	7
		Tsonga	8
		Venda	9

Ndebele	10
Sepedi	11
Other	12

8. Do you use acronyms or abbreviations (chat lingo, for instance BRB- be right back) whilst texting?

Yes	1
No	2

9. Are you aware of any Social Networking Sites (SNS), such as Facebook, Twitter, Mxit and others?

Yes	1	
No	2	(*if no, there is no need to continue with the questionnaire, please hand the questionnaire to the test administrator)*

10. Are you a current user of a SNS?

Yes	1
No	2

11. Have you been a previous subscriber of a SNS in the past?

Yes	1	
No	2	(*if no, proceed to question 15)*

12. Which SNS to you belong to? (*you can select more than one option)*

Facebook	1	
Twitter	2	
Mxit	3	
MySpace	4	
Bebo	5	
Friendster	6	
Mig33	7	
The Grid	8	
Orkut	9	
Hi5	10	
Other	11	*(please specify:* _____)

13. If you are a user of more than one SNS, please select the SNS you access the most?

Facebook	1
Twitter	2
Mxit	3
MySpace	4
Bebo	5
Friendster	6
Mig33	7
The Grid	8

Orkut	9	
Hi5	10	
Other	11	*(please specify:* _____)

14. From where do you access your SNS most frequently?

Computer	1
Mobile phone	2
Xbox	3
Other	4

15. How often do you visit a SNS?

Every day	1
Few times a week	2
Few times a month	3

Thank you very much for participating in this study.

Appendix C – List of commonly misspelled words

UNIVERSITY OF PRETORIA

DEPARTMENT OF PSYCHOLOGY

MA Research Psychology

MINI DISSERTATION

COMMONLY MISSPELLED WORDS

FOR

A STUDY ON SOCIAL NETWORKING SITES AND THE EFFECTS ON SPELLING AND ACADEMIC PERFORMANCE

1. acceptable
2. acquire
3. accommodate
4. believe
5. calendar
6. category
7. changeable
8. committed
9. conscience
10. conscientious
11. daiquiri
12. definite
13. embarrass
14. fiery
15. their
16. they're
17. there
18. threshold
19. rhyme
20. receipt
21. questionnaire
22. pronunciation
23. principle
24. neighbour
25. mischievous
26. millennium
27. whether
28. grateful
29. guarantee
30. humorous
31. manoeuvre
32. its/it's
33. jewellery
34. immediate
35. indispensable
36. intelligence
37. library
38. license
39. maintenance
40. until
41. occurrence
42. personnel
43. possession
44. accidentally
45. calendar
46. column
47. existence
48. experience
49. independent
50. separate